Examining and supporting online reading practices for young children

Jan Hutton

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Examining and supporting online reading practices

for young children

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M.RE (ACU), M.Ed., B.Ed (UoW), Dip Teach (CTC)

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Professor Lisa Kervin
Doctor Jessica Mantei

This thesis is presented as part of the requirement for the conferral of the degree:
Doctor of Philosophy

from

University of Wollongong
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The University of Wollongong
School of Education
Faculty of Social Sciences

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Abstract

Educators in contemporary technology saturated cultures are challenged to rethink the ways a new generation of learners must learn, communicate and make meaning. This challenge requires the creation of learning contexts that develop students’ skills, strategies, dispositions and social practices for engagement with the Internet and other digital technologies for literacy learning (International Reading Association [IRA], 2009). A particular challenge lies in the development of children’s online reading proficiency.

We know reading is a complex process whether on page or screen, and that online reading requires new forms of knowledge. We know that many challenges related to developing reading proficiency in the online environment stem from texts being multifaceted and multimodal and not homogenous units of meaning. A gap exists in the research literature that reports on young children’s development of the early skills and strategies required for online reading proficiency. Examined in this thesis is the development of online reading skills and strategies in young children (aged 5 - 7 years) at school.

This qualitative inquiry is underpinned by New Literacies theory (Leu, Kinzer, Coiro, Cammack, & Henry, 2013) acknowledging that the Internet and related technologies continue to define literacy and learning globally. Its principles hold these new literacies as social, ever changing, multiple and multimodal, requiring new strategies and critical literacy skills. Pertinent to this inquiry is the principle that teachers and good pedagogy are central to learners’ literacy success.

This inquiry uses collective case study methodology and ethnographic principles to account for and capture the participants’ unique and complex settings as they work to develop online reading proficiency. The two phase design involved an initial analysis of text complexity and assessments of participants’ reading ability. The second phase responded to the phase one findings by utilising the specific pedagogical strategy Internet Reciprocal Teaching (IRT) (Leu & Reinking, 2005-2008) to examine the reading demands of online texts and to empower these child participants as expert peer educators.

The participants are four children and nine of their peers in the second year of formal
school in an Australian classroom. Rich data were generated through observations, interviews, documents and work samples as the four participants engaged with the IRT model, first developing the online reading skills before then taking on the role of teacher for their peers. Inductive and deductive analysis generated important findings related to the teaching of reading in online environments.

This inquiry argues that there are specific online reading skills and strategies that young learners must be taught as part of daily literacy learning. Therefore, teachers need deep knowledge and understanding not only of those reading demands, but also of students’ abilities if they are to design pedagogically appropriate learning experiences for emergent readers. This knowledge about learners and learning to read online texts is afforded through cycles of formative assessment, planning, teaching, reassessing, reflecting and evaluating for re-planning.
Acknowledgements

It gives me great pleasure to acknowledge those who have helped me in the journey to thesis completion.

To my supervisors Professor Lisa Kervin and Doctor Jessica Mantei, the ‘professional wheel’ has taken a full turn. I am grateful you both have been a part of this journey and I am indebted to you for your encouragement and the sharing of your wisdom in so many ways. You have inspired and influenced me beyond belief, and under your guidance I have grown as an educator and a researcher. I thank you with much love and gratitude from the bottom of my heart.

To the thirteen children and their parents who made this possible. Thank you children for your enthusiasm and excitement each time I arrived at your classroom door! Working alongside you has allowed me to continue to learn about the work of educating young children. Parents, I thank you for allowing me to work with your amazing children.

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To my Catholic Education and University of Wollongong colleagues, in particular Doctor Kylie Lipscombe who has been inspirational to me in many ways, I thank you for your interest, questions and encouragement in supporting my research.

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To my beautiful family, my husband Allan and my children Lauren, James and Alana, thank you for your patience, encouragement and love. I now have the time to be more of a presence in your lives … I will probably drive you all crazy!
I, Jan Mary Hutton, declare that this thesis submitted in fulfilment of the requirements for the conferral of the degree Doctor of Philosophy, from the University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. This document has not been submitted for qualifications at any other academic institution.

Jan Mary Hutton
2018
Dedication

This thesis is dedicated to future generations of teachers and young children.

~

To teachers, may you benefit from knowing more about how to teach reading for today’s digital world so you can continue to influence the young lives of those in your care.

~

To young children, may you reach your life goals as proficient readers in this new and exciting digital world.

~

To learners of all ages, learning is life long. This thesis is testimony that anything is possible with support, guidance and encouragement from others.
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**List of Abbreviations**

**ACARA**: Australian Curriculum Assessment and Reporting Authority  
**AC:E**: Australian Curriculum: English  
**BOSTES**: Board of Studies Teaching and Educational Standards NSW (NSW authority in curriculum, teaching, assessment, registration and policy)  
**ICT**: Information and communication technology  
**KLA**: Key Learning Area (used in NSW to define specific curriculum areas)  
**GC**: General Capability (used in NSW syllabuses)  
**NSW**: New South Wales
Chapter 1: INTRODUCTION
CHAPTER 1

INTRODUCTION

Overview

Print-based texts are no longer the main source of reading material and children are now accessing technology from increasingly younger ages. It is therefore essential to understand the ways they interact and make meaning with text in all forms. Usage and population statistics estimate that almost 52% of the world’s population currently has access to the Internet (Internet World Stats: Usage and Population Statistics, 2017). At current rates of adoption it is reasonable to anticipate that nearly all of the world’s population will have access to online information within the next eight years (Internet World Stats: Usage and Population Statistics, 2017).

The Australian Bureau of Statistics (ABS, 2016) reports that in 2014-2015, 86% of all households across Australia had access to the Internet. In those households, 97% had children aged 15 and under, with most of these households accessing the Internet using a computer (94%), a mobile phone (86%) and/or a tablet device (62%). This access fosters an environment where younger children are engaging with online technologies in a variety of ways, using computers and mobile devices for both leisure and learning (Marsh, Hannon, Lewis, & Ritchie, 2015). More than ever, younger children are engaging with online activities such as watching YouTube videos, creating and networking within virtual worlds, as well as playing online games and games created as apps for mobile devices. These trends present a challenge for literacy educators and researchers (Larson, 2010) as we look to help learners to engage with and respond to the literacy demands of these environments.

Globally, a new generation of learners is arriving in our educational systems, a generation that has grown up with technology as an integral part of their lives (Bennett, Maton, & Kervin, 2008). Marsh (2005) reports that children’s engagement with digital technologies has influenced the way they now interact with each other and their environments. Despite this increased participation, however, Bennett et al. (2008) and more recently, Forzani and Maykel (2013) assert that students are not especially skilled at reading online, leaving them in need of support if they are to read and learn from the vast array of online information. Although students have the ability to engage with social networks, text messaging programs and video games, there is a need for careful instruction to support them to critically read and evaluate online information effectively.
(Kuiper & Volman, 2008). As such, it is essential for educators to have a better understanding of the demands that online texts present to young children in order to develop pedagogical approaches that support the development of reading proficiency.

**Purpose of the inquiry**

The purpose of this qualitative case study was to explore the reading demands of online texts for young children who are emergent readers, and to examine the ways teachers can support young children to acquire the skills they need using an instructional model, Internet Reciprocal Teaching (Leu & Reinking, 2005-2008).

This inquiry analysed the reading demands placed on emergent readers by online texts. The understandings gained by doing so informed the design of an intervention to develop young children’s online reading skills and strategies. Thirteen emergent readers (the youngest was 5 years and 10 months old and the oldest was 6 years and 7 months old when the inquiry was conducted) participated in the first phase of this inquiry, in which their print-based and online reading skills and strategies were assessed. This data informed the second phase of the study, where these understandings were used to support the design of an intervention using a specific instructional model, Internet Reciprocal Teaching. Findings from the intervention were then examined to see how teachers could support emergent readers to first acquire, and then share online reading skills and strategies with their peers in classroom settings. The research was guided by the following questions:

**Research questions**

- What do teachers need to know about the online reading demands for young children who are emergent readers?
- What is the role of Internet Reciprocal Teaching in developing young children’s online reading skills and strategies?
- How can teachers support young children to develop online reading skills and strategies?

**Background to the inquiry**

There are claims that education must change dramatically to cater for the needs of a new generation who have grown up with technology embedded in their lives (Bennett et al., 2008). It is assumed that this new generation of learners, known as “digital natives” (Bennett et al., 2008, p. 5) possess sophisticated technology skills and prefer particular
learning styles that are different from previous generations. Immersion in this technology-rich culture is said to influence the skills and interests of these new learners in ways significant for education. However, Bennett et al. (2008, p. 5) argue these young peoples’ relationship with technology is much more complex than the “digital native debate” suggests. They call for a considered examination that includes the perspectives of these learners and their teachers to understand the current situation about the role of education today, and the “learning styles required to cater for the needs and interests of these so called digital natives” (Bennett et al., 2008, p. 5).

The role of education today

Education plays a critical role in shaping people’s lives. To play this role effectively, the intellectual, personal, social and educational needs of students must be addressed. This presents challenges at a time when ideas about the goals of education are changing and will continue to evolve. The Australian Curriculum and Reporting Authority (ACARA, 2015) report that globalisation and technological change are placing greater demands on education and while schools have employed some technologies in teaching there is a need for a significant increase in their effectiveness. Educators need to change the ways they prepare students for the workforce, and for the opportunities that await them in an online world of information and communication technology (Kervin, Mantei, & Leu, 2017).

Government agendas

In 2008, the Melbourne Declaration on the Educational Goals for Young Australians (Ministerial Council on Education, Employment, Training and Youth Affairs [MCEETYA], 2008) set a direction for Australian schooling which, a decade later, is still current. Among other priorities, the Declaration recognised that in a digital age, and with rapid and continuing changes in the ways that people share, use, develop and communicate with technology, young people need to be highly skilled in its use. The declaration states:

To participate in a knowledge-based economy and to be empowered within a technologically sophisticated society now and into the future, students need the knowledge, skills and confidence to make technology work for them at school, at home, at work and in their communities, (MCEETYA, 2008).

To support this goal, the Council of Australian Governments (COAG, 2009) adopted a National Education Agreement (NEA) which articulates the commitment of Australian state and territory governments to ensure that all Australian school students acquire the knowledge and skills needed to participate effectively in society and employment in a
globalised economy. This agreement was designed to support all Australian students to make a smooth transition from school to the workforce by ensuring they acquire the skills of digital literacy and develop as learners with the capacity to think creatively, innovate, solve problems and engage with new disciplines.

More recently, the New South Wales Government has supported the implementation of the NSW Literacy and Numeracy Strategy, a four-year plan that aims to ensure all students across NSW schools have the essential literacy and numeracy skills to be successful in life (NSW Education Standards Authority [NESA], 2017). Literacy and numeracy skills have been identified as underpinning workforce participation, productivity and the broader economy, and can also impact on social and health outcomes. A priority area of interest to this inquiry refers to providing quality training for teacher education to support students in literacy skills.

**Positioning technology in the curriculum**

Shaped by the Melbourne Declaration of Educational Goals for Young Australians (MCEETYA, 2008) and the acknowledgement by government policy of the rapid and continual changes occurring with technology, the newly developed Australian Curriculum (ACARA, 2015) has been implemented across Australian school systems. The Australian Curriculum (AC) recognises that each student is entitled to the knowledge, understanding and skills needed to provide a foundation for successful and lifelong learning and participation in the Australian community (ACARA, 2015). It also acknowledges the significance of digital technology in the lives and learning for twenty-first century students. Information and Communication Technology (ICT) is both a Key Learning Area (KLA) and a General Capability (GC) in the Australian Curriculum.

In this inquiry the mandated Australian Curriculum (ACARA, 2015) is considered, as the inquiry’s focus is online reading for young children in their second year of formal education. In the specific KLA of English (ACARA, 2015) students are required from foundation years through to Year 10 to listen, read, write, interpret and evaluate digital texts. These new demands require that educators develop their own understandings and explore pedagogies to make learning and teaching relevant to their learners.

**Reading and reading pedagogies**

The historical journey of teaching reading and the emergence of instructional models to support its development have evolved from several approaches. These approaches include, for example the alphabetical approach (Huey, 1908) where children encounter
synthetic phonics taught through drill and practice methods, and the look and say method where children were taught to look at and identify whole words or read sentences. Other methods recognised that reading was more than just letter or word recognition and involved context and deriving meaning from printed text.

Turbill (2002) claims there has been ongoing debate (Bouffler, 1997; Brown, 2014; Clay, 1979; Ewing, 2018; Goodman, 1967; McNaughton, 2014; Rosenshine & Stevens, 1986) about how best to teach reading, with research continuing to explore and develop the most effective reading pedagogies to benefit all children. Over time, research into reading and reading instruction has seen several approaches emerge. These include, for example phonics-based reading, the word-based approach, the whole language approach, literature based instruction, guided reading, the four resources model and the balanced literacy approach (Rasinski & Padak, 2004). What has been generally deemed important in all these approaches is that learning to read is viewed as a developmental process, and that making meaning from the text, that is comprehending the text, is central to the reading process.

Reading research (for example, Ewing, 2018; Frey, Lee & Tollefson, 2005; Kennedy & Shiel, 2010) has yielded several significant findings, with the role of the teacher being central to reading success, and an agreement that there is no, one best method to teach all children to read. Husbands and Pearce (2012) argue that the presence of an effective teacher has more impact on student achievement than any other factor, and they claim that it is what teachers know about reading, and what they do, that are of most importance. The International Reading Association (IRA, 2002) suggests that all reading pedagogies can be effective, depending on how well they fit with children’s reading needs.

Since the last quarter of the twentieth century, there have been definite paradigm shifts that have influenced both practitioners and researchers in relation to the reading process and reading instruction. However, the field has remained focused on two areas, reading and comprehension. Researchers, policy makers, educators and parents are continually looking for ways to provide all children with opportunities to learn to read, as this is understood to be key to a child’s wellbeing and success in life.

*Envisioning reading and reading pedagogies in new ways*

Educators have always been focused on the teaching of reading. Traditionally, print-based texts have been the focus of reading and reading instruction, and their important
role in supporting reading proficiency cannot be denied. However, it is appropriate to consider reading in new ways for a new era. Nowadays, the online environment is “making our daily lives more meaning-intensive” (Kiili, 2012, p. 11) as it offers almost constant access to a huge amount of information, including digital texts that take many forms and offer countless reading experiences and challenges for readers. Current students must be able to critically evaluate a vast collection of multimodal texts. Therefore, educators need to understand the importance of the online informational contexts that now define our literacy lives and begin to teach students to read and critique complex information online (Coiro, 2011; International Reading Association [IRA], 2009; Leu, O’Byrne, Zawilinski, McVerry, & Everett-Cacopardo, 2009). This requires educators to have an understanding of the demands of online reading to support the early development of young children’s online reading proficiency, as well as the appropriate pedagogical practices needed to teach them to do so (Leu, Kinzer, Coiro, Castek, & Henry, 2013).

It has been argued that reading in an online context requires “a different logic and set of practices” for meaning making to occur (Rowsell & Burke, 2009, p.106). Castek (2008) and Coiro (2007) assert that new skills and strategies are required for online reading. We know very little about online reading in comparison to what we know about reading print-based texts (Kervin, 2016; Uso-Juan & Ruiz-Madrid, 2009). Some researchers (Castek, 2008; Lankshear & Knobel, 2003) have called for educational practices to be reshaped to meet the online literacy demands of the twenty-first century. It is therefore both timely and necessary that researchers review, revise and build on well-established reading theory so we can enrich rather than replace existing reading pedagogies for young children in the online environment (Kervin et al., 2017).

Therefore, this inquiry focuses on exploring the reading demands of online texts for emergent readers, and the ways teachers can support young children to develop the skills they need to read online.

Personal orientation to the inquiry

Mertens (1998) claims, understanding the researcher’s background and professional experience in connection with the inquiry’s focus enables the reader to have an understanding of the researcher’s values and beliefs. In positioning this inquiry for the reader, I reflect on my professional experience and values and beliefs about learning, teaching and literacy.
I have worked in the field of education in Australia for over 40 years, beginning my teaching career in 1976 as a three-year trained primary teacher. During this time, I have taught grades Kindergarten to Year 6 (aged four to 12 years old), held numerous senior leadership positions at the school and system levels, and engaged in study including completing a Bachelor of Education (1984), a Master of Education (1995) and a Master of Religious Education (2001). My educational pathway has given me ongoing opportunities to work alongside some remarkable educators who have challenged me and encouraged me to continue to learn and grow both personally and professionally. This I am very grateful for, as the professional relationships I have built over the years have brought me to this point, completing a PhD.

My early years of teaching involved working in the ‘Infants’ department (aged five to seven years) teaching children in their first three years of formal schooling. In 1995, I trained in Reading Recovery, which provided me with professional learning opportunities that fostered deeper understandings about how young children develop reading and writing proficiency. Being able to successfully implement Reading Recovery and provide equal opportunities for young children to learn to read provided me with much professional satisfaction. As a passionate educator I have always been interested in how young children acquire reading competency and on reflection, I see that two specific experiences have had an impact on me professionally.

In 1999, I was appointed as an education officer in an independent system of schools south of Sydney and, with a knowledgeable colleague I was involved in designing and delivering a professional learning course for teachers of students in Early Stage/Stage One (aged 5 to 7 years) called Good First Teaching. This course was developed as a system response to improve literacy teaching and students’ literacy outcomes. In this role, I worked alongside many teachers, observing their classroom practice and leading professional discussions and workshops to develop successful classroom pedagogies in literacy. This role also involved mentoring Early Stage/Stage One teachers, a role which involved supporting teachers to acquire a wide range of skills, including making professional judgments, taking appropriate action to support learning, and building capacity to reflect and revise decisions on the basis of observations and insights. In this role, it was important for me to keep abreast with current research and professional learning to effectively fulfill my responsibilities. This led to me joining professional associations, including the Australian Literacy Educators’ Association (ALEA), and I became an active member of my local branch of ALEA. My role at a system level also provided me with many ongoing opportunities to network with colleagues. These
opportunities have had a great influence on my professional learning, shaping my current beliefs and understandings about how young children learn to become readers and writers.

In 2011, I took responsibility for managing the National Partnership and State Action Plan, (Federal and State Governments educational reform) agendas across this same system of schools. As one of a number of initiatives to improve teacher capacity in literacy instruction, a partnership of cooperation was formed between this system of schools and a local university to explore the reading demands of the online environment for young children. This involved teachers using a prototype assessment tool, the Online Reading Assessment (Kervin & Mantei, 2015), which was in the very early stages of development, to examine children’s understandings of reading in digital environments. As part of this project, I participated in professional sessions conducted by Professor Donald Leu from the University of Connecticut who spoke about research he had been involved in with his colleagues, focused on New Literacies.

As a trained Reading Recovery teacher with many years of teaching experience, I had always viewed myself as an educator with a deep understanding of the skills and strategies required for reading print-based texts as well as the pedagogies to support the explicit teaching of these skills. I was challenged to think more deeply, firstly about the knowledge, skills and strategies required to read and gain meaning from multimodal texts, and secondly, how these can be explicitly taught. These questions motivated me to begin my research informed by New Literacies theory (Leu et al., 2013). New Literacies as a theoretical frame afforded me new opportunities to continue my commitment to understanding how children read, with a focus on online texts, as I investigated equity in education for all students.

**Significance of the inquiry**

This inquiry addresses the demands of reading for young children in an increasingly technological age. It addresses the immediate need to support both teachers and learners through its development of an instructional model for teaching online reading to young children. As it was conducted in the authentic setting of the classroom, this inquiry has the potential to make significant contributions to knowledge about the reading demands and the skills required for online reading and the ways educators can teach these skills to young children. There is an expectation that the findings will prove important to researchers, school leaders, teachers, and policy makers.
For teachers: it can provide insights for teaching both offline and online reading skills and incorporating digital texts into classroom reading experiences

For children: it can provide opportunities to access digital resources giving value to the reading practices they choose to engage with; it will also provide opportunities to share expertise and support the solving of problems

For school leaders: it can provide a vision of what can be accomplished with an innovative solution to an important pedagogical challenge

For policy makers and curriculums: it can promote new directions for thinking about how to reposition online reading to a central location in the curriculum and appropriately prepare students for work and leisure in an online age

For methodology: it can further investigate and develop an instructional model, Internet Reciprocal Teaching with much younger children, contributing to theoretical understandings of New Literacies.

Theoretical location

This qualitative inquiry is framed by New Literacies theory, a theoretical perspective informed by the work of Leu and colleagues (Leu, Kinzer, Coiro, & Cammack, 2004; Leu et al., 2013). New Literacies theory acknowledges the Internet as the defining technology of our time. Its eight defining principles (Leu et al., 2013) relate to the enormous potential of technology to support students to effectively access, create and communicate information and ideas, solve problems and work collaboratively in all learning areas at school. Engaging in these activities prepares them for participation in a knowledge-based economy (MCEETYA, 2008).

New Literacies theory explores specific Internet technologies, allowing research to stay closely in touch with the rapid changes taking place as a result of diverse and continuously changing online technologies, for example instant text messaging (Lewis & Fabos, 2005), blogging, social networking spaces, sharing music and the multimodality in online media (Kress, 2003). Research around New Literacies theory (Leu et al., 2013) offers insights into the complex nature of the reading demands of the online environment. This research has a strong connection to reading research that contributes to our understandings regarding the new literacies of online research and comprehension (Castek, 2008; Coiro, 2011; Coiro & Dobler, 2007). However, much of this research has been with older more proficient readers and it has focused on how they read information on the Internet and develop research skills to problem solve. In this
inquiry, New Literacies theory will enable us to think in more complex ways about the nature of online reading for emergent readers, as the practices, experiences and beliefs that younger children bring to online reading are investigated (Kervin et al., 2017).

Leu et al. (2013) have conceptualised New Literacies as a theoretical construct to respond to the shifts in literacies in today’s society. They have proposed a set of principles defining elements that underpin the essence of this theory as a way to describe the influence of digital technologies on literacy learning and the changing forms of literacy people need if they are to participate in modern societies. These eight principles are now listed and discussed.

1. The Internet is this generation’s defining technology for literacy and learning within our global community

New Literacies theory acknowledges that the Internet and other digital technologies as the central technologies of literacy for a global community (Leu et al., 2013). These digital technologies are now rapidly defining the new literacies that are part of our daily lives, and they encourage literacy research and practice to recognise this fact. Coiro (2003) and Leu et al. (2013) argue that reading on the Internet is very different as it illustrates how we need to rethink our assumptions about literacy, as new skills and strategies are required to successfully read in this context. Reading on the Internet involves such activities as using search engines, using hyperlinks and synthesising the vast amounts of information presented in many multiple forms. Readers, who bring different background knowledge to reading in this context, can follow very different informational pathways, read different sets of information and come to different conclusions about what they have read (Leu et al., 2013). The reader is required to navigate non-linear text and deal with an increasing number of modes of communication. This combination of new tasks has broadened our understanding of reading as it has been traditionally known (Jewitt, 2013; Kervin et al., 2017).

2. The Internet and related technologies require new literacies to fully access their potential

New Literacies theory argues that typically, new technologies require different sets of skills, practices and dispositions, such as identifying important questions, locating information, critically evaluating information, and synthesising information to answer questions and then communicate those answers to others (Leu et al., 2013). These skills, practices and dispositions support the effective use of the Internet and other
technologies as we read, write and communicate for new social purposes. Leu et al. (2013) argue that new literacies include such skills as effectively using a search engine or word processor, including using technical functions such as graphics and formatting text and emailing and using hyperlinks. Research (Coiro, 2003; IRA, 2002; Sutherland-Smith, 2002) reports that reading and writing have become even more important in this informational age. Reading, writing and communicating are continually adopting new forms, and text is being combined with new media resources and connected to complex information networks. This means that people wishing to make use of the Internet need to acquire new literacies to read online.

3. New literacies are deictic

Literacy is constantly changing and as technology develops, literacy is transformed and redefined. Leu et al. (2013) argue that literacy changes as new technology emerges and new social practices appear. Technological change happens so quickly that changes to literacy are restricted, not by the technology, but by peoples’ capacity to adjust and learn the new literacies that emerge (Leu et al., 2011).

Leu et al. (2013, p. 1591) explain that there are three sources impacting these deictic changes to literacy:

- transformations of literacy due to technological changes, for example different upgraded versions of Microsoft Word which may require new literacies to effectively use the upgraded program
- envisioning potential of new forms of literacy which make use of new technologies, for example technologies that allow users to create new visions for their use by solving problems and seeking new solutions
- the use of more efficient technologies to communicate, rapidly spreading new literacies, for example the speed at which we can download new technologies from the Internet and share them with others, has increased rapidly, contributing to the rapid pace of change in the forms and functions of literacy.

All three sources contribute to the fundamental changes occurring with literacy (Leu et al., 2013).

4. New literacies are multiple, multimodal, and multifaceted, and, as a result, our understanding of them benefits from multiple points of view

New Literacies theory categorises the multiplicity of new literacies on three levels, multiple representation of meaning, multiple usage of tools and multiple social practices
needed to operate within a wide range of social contexts (Leu et al., 2013). Texts in the
digital environment often draw on multiple modalities such as text, image and audio
(Cope & Kalantzis, 2009). These new combinations challenge users’ traditional
understandings of how information is represented and shared (Jewitt & Kress, 2003).
Proficient Internet users must use multiple tools to construct meaning and also to
design, manipulate and upload their own contributions to the growing body of
information that defines the digital environment (Leu et al., 2013). Therefore, New
Literacies theory comprises multiple forms of research based on digital meaning and
content construction.

5. Critical literacies are central to new literacies
New Literacies require users to be adept at new forms of critical thinking and analysis
of information (Leu et al., 2013). The open platform of the Internet provides
information that is represented in multiple forms and affected by different ideologies
and influences (Coiro & Dobler, 2007; Leu et al., 2011). More than ever before, there is
a need for successful classroom practice in this area to support students, starting in their
eyears of school, to become critical consumers of the information they encounter on
the Internet and to develop higher order thinking skills about what is being
communicated (Leu et al., 2013).

6. New forms of strategic knowledge are required with new literacies.
Leu et al. (2013) argue that definitions of New Literacies will be based on the essential
strategic knowledge required to successfully use information within the rich and
complex networked environment of the Internet. Technology is diverse and requires
users to be skilled in the use of different strategies in different contexts in order to
construct meaning from what they are reading (Coiro, 2007; Coiro, Knobel, Lankshear,
& Leu, 2008; Leu et al., 2011). Leu et al. (2013) claim that many new forms of strategic
knowledge will emerge that will be important to the new literacies. These forms of
knowledge will be needed to locate, evaluate and effectively use these extensive
resources which are available within the Internet space.

For example, hyperlinks and the freedom to choose navigational pathways could present
opportunities that may distract readers from important content unless they have
developed strategies to deal with these distractions (Lawless & Schrader, 2008). When
reading a digital literary text, a young reader could become distracted by the animations
within the text, unless they develop strategies to deal with these often competing
demands.

7. New social practices are a central element of new literacies

New literacies enable us to construct, access and share information in ways that are very different to those we have used before (Leu et al., 2013). In today’s literacy classroom, social learning and peer support play an important role in the exchange of skills and strategies, with effective learning being influenced by the teacher’s ability to “orchestrate opportunities” (Leu et al., 2013, p. 1597) between students who have mastered different new literacies. Both teachers and students may enhance their literacy skills and their use of technology through the provision of opportunities to exchange new literacies (Leu et al., 2013). Thus, the building of knowledge in the learning spaces defined by Internet technologies will gradually become collaborative, and young students will need to be prepared for learning experiences in which the co-construction of knowledge and the collaborative nature of learning are recognised (Kiili, 2012).

Leu et al. (2013) also argue that social learning is important not only for how information is learnt but also for how information is constructed using new technologies. For example, interactive chat sites, threaded emails and discussions and collaborative databases all expand the global knowledge base shared through Internet technologies. Therefore, literacy learning will become more dependent on the social skills of learners.

8. Teachers become more important, though their role changes within new literacy classrooms

The central role of the teacher is critical in the new literacies classroom (Leu et al., 2013). Educators must be aware of evolving technologies, be capable of using and teaching the new literacies required of them and be proficient at catering for the learning needs of students in the classroom when reading and creating digital texts (Coiro & Fogleman, 2011; Leu et al., 2013). Instead of being the source for all literacy learning in classrooms, teachers will need to construct contexts for learning where students who possess more skills in new literacies feel valued and supported to share these skills with others (Leu et al., 2013).

Principles specifically relating to this inquiry

The inquiry undertaken in this thesis specifically draws on principles four, six, seven
and eight to inform the inquiry. The elements specific to these four principles are now discussed and considered in the frame of this inquiry.

4. New literacies are multiple, multimodal, and multifaceted, and, as a result, our understanding of them benefits from multiple points of view

New Literacies theory categorises the multiplicity of new literacies on three levels, multiple representation of meaning, multiple usage of tools and multiple social practices needed to operate within a wide range of social contexts (Leu et al., 2013). Each level is to be considered in this inquiry.

Representation of meaning

Texts in the online environment usually draw on multiple modalities such as sound, image, text and movement (Jewitt, 2013). These complex and multifaceted media forms have expanded the ways meaning can be expressed. Jewitt (2013, p. 254) argues “this rapidly changing technological landscape” presents new reading demands for the reader, as they attempt to gain meaning from a range of symbols and multiple-media formats.

In this inquiry, exploring the reading demands of online texts will contribute to the understanding of the multiple modes found in online resources and the reading practices required by emergent readers to problem solve and make meaning when reading online. Having an understanding of the multimodality of online texts will also support teachers in articulating their own understandings about the demands of online reading and the way different modes work to support pedagogies (Kervin et al., 2017). With assessment data, this will inform the appropriate selection of text resources to support emergent readers’ online reading needs.

Multiple use of tools

Skilled technology and Internet users must use multiple tools to construct meaning, and to design, manipulate and upload their own contributions to the growing body of information that characterises the online environment (Leu et al., 2013).

In this inquiry, the children will be required to have an understanding of the skills needed to control and manipulate online texts, such as navigating menus and scrolling through pages while developing understandings of how texts work. Explicit teacher-led demonstrations in step one of the Internet Reciprocal Teaching (IRT) (Leu & Reinking, 2005-2008) intervention will provide the children with learning opportunities that
promote them as experts (Castek, Henry, Coiro, Leu, & Hartman, 2015) empowering and enabling them to become newly literate with new technology and to then teach their peers.

Multiple social practices
Social contexts where users share and encounter information have important implications for consumers, in particular the need for users to become more critically aware of the social and cultural influences that impact the construction of information found on the Internet (Henry, 2006; Leu et al., 2013).

In this inquiry, using a specific instructional model, IRT, will provide the children with a social context in which they can interact and collaborate with their peers to problem solve and to co-construct meaning from the online text.

6. New forms of strategic knowledge are required with new literacies
New literacies are often related to the strategic knowledge that is central to their ever-changing environment (Leu et al., 2013). Research has established that different skills are required for online reading (Castek, 2008; Coiro, 2007; Leu et al., 2013).

In this inquiry, a close examination of the online reading practices children demonstrate during IRT experiences will be explored and considered in order to understand possible new forms of reading practices young children need to construct meaning from online texts.

7. New social practices are a central element of new literacies
Within New Literacies, social learning strategies will be significant to literacy instruction (Leu et al., 2013) and therefore the teacher’s role and ability to create learning experiences amongst students will become essential to literacy learning.

This opens up space for the connection this inquiry makes to the IRT model. For example, the findings will provide opportunities for the young children to interact, collaborate and co-construct meaning as they engage with online texts. This experience will be considered through the lens of literacy as social practice, acknowledging that literacy practices are highly contextual and interwoven in the experiences and values of each participant.
8. Teachers become more important, though their role changes within new literacy classrooms

Leu et al. (2013) argue the teacher’s role becomes more important than ever. In this inquiry the classroom teachers of the 13 participating children are interviewed to understand their beliefs about current literacy practices and to gain deeper knowledge about the literacy learning opportunities associated with online texts that have been previously provided for the children leading up to this inquiry.

The IRT instructional model adopted in this inquiry will enable the role of the teacher, and the role of children as facilitators of learning, to be considered. The model provides opportunities for the young children to take responsibility for learning through a gradual release of responsibility strategy within the model. Opportunities will be provided for the primary participants to lead their peers in peer tutoring experiences. The ways the young children can be challenged individually and in small groups will be examined.

This inquiry uses these principles to inform the context for understanding the inquiry, and expands New Literacies theory by exploring the reading demands of online texts for emergent readers using a specific instructional model, Internet Reciprocal Teaching.

Methodology

This inquiry is situated within a qualitative paradigm and uses a collective case study methodology (Creswell, 2013; Yin, 2009). Guided by ethnographic principles, the inquiry uses methods aligned with the methodology to collect and analyse data to achieve its purpose.

The qualitative design in this inquiry allows the researcher to investigate the reading demands of online texts by observing young children in a specific learning environment using a model, Internet Reciprocal Teaching (IRT) (Leu & Reinking, 2005-2008). The inquiry’s research design has two phases. In phase one, data collection techniques of interviews, observations, formal assessments and document analysis were employed to establish the child participants’ understandings of offline and online reading, and to guide the subsequent intervention in phase two. Phase two investigated whether the IRT model was an appropriate instructional model to support online reading proficiency for young children. The three IRT-based steps (explicit teaching in online reading skills; group work and reciprocal exchange by children with their peers; and sharing and reflecting with peers) are explored as a support for young children’s development of the
skills and strategies for online reading. The four case study children’s reciprocal teaching experiences formed the bounded collective case study (Stake, 2006). Data collection methods in phase two included interviews, observations, and the examination of work samples. Data collection and analysis allowed a compilation of rich descriptions of the four cases to gain a deeper understanding of the reading demands of online texts and the pedagogies used to support the development of the skills and strategies needed for early online reading. Findings are then presented from analysis of data.

**Locus of the inquiry**

*School site*

The research site for this inquiry was a school on the South Coast of New South Wales. The school is part of a non-government system of schools, which comprises 29 primary and seven secondary schools. At the time of the inquiry, this large school was two-streamed (i.e. it had two classes for every year from Kindergarten to Year Six). It had 354 students across 14 classes and it employed a total of 29 staff. This school was selected because literacy and digital technologies were prioritised in their annual School Improvement Plan and further, the school had committed significant resources to support its improvement agendas.

*Classroom site*

The inquiry involved two Year One classes (children in their second year of formal school). There were 28 students in each class (56 in total) and two classroom teachers. The classrooms were next door to each other and close to the school’s Covered Outdoor Learning Area (COLA). The two classrooms had a joint verandah. For learning experiences the teachers and children used both the COLA and the verandah. Each classroom had a designated space called the ‘engine room’ that was used for small, guided group activities such as guided reading, and a small class library that housed print-based texts. Each classroom had a technology corner with two desktop computers and six iPads.

*Participants*

The inquiry included 13 participants (aged five to seven years) from across the Year One classes. All Year One students’ literacy achievements were tracked and monitored by the classroom teachers using the K-10 Literacy Continuum (NSW Department of Education and Communities [NSW DEC], 2011). The classroom teachers selected the
13 child participants for this study using current classroom assessments. These 13 participants were identified as operating at the lower end of the continuum and they had therefore been targeted. These 13 children were the participants in phase one of the research design. In phase two of the research design, four children were selected from the 13 participants to be the primary participants. These four children then facilitated a learning experience together with three or four children selected from the remaining nine participants. Each of these four groups was the subject of a case study in this inquiry.

### Definition of key terms

Some terms used in this inquiry have meanings that differ from their usual meaning. It is therefore necessary to define them (Creswell, 2013). The researcher acknowledges that the current literature surrounding literacy and technology is saturated with ambiguous terms used to refer to the reading of digital texts and the acquisition of new literacies skills. Given the ambiguity of these definitions, the key terms referred to in this inquiry have been defined as follows.

**Reading**

Clay (1991, p. 6) defines reading as a “message-getting, problem-solving activity which increases in power and flexibility the more it is practiced”. The reader is required to make meaning of the text while using strategies to problem-solve (Clay, 1991). In this inquiry, the term reading is used to describe the process of constructing meaning from offline and online texts.

**Emergent reader**

An emergent reader is one who is in the early stages of developing the skills and strategies needed for reading (Clay, 1991). In this inquiry, the term emergent reader refers to a child in the early stages of reading proficiency.

**Proficient reader**

A reader is said to be proficient when they can comprehend the text: they can identify the purposes for reading and the reading demands of a particular text and use a variety of strategies to solve comprehension problems (Clay, 1991). In this inquiry, a proficient reader will be described as one who can automatically problem solve to construct meaning from a complex text (Clay, 1991).
Texts
Texts are the different ways in which information is represented and organised to convey meaning (ACARA, 2015). In this inquiry, the representation of an author’s work will be referred to as text.

Print-based text
In this inquiry, texts that are linear, written and can be read, will be referred to as print-based or offline texts.

Online text
For the purposes of this inquiry, nonlinear texts that are read on a screen will be referred to as online, digital or screen-based texts. This includes texts that are published on an open network system of the Internet or a closed electronic system such as an application (app) on an iPad.

Multimodality
The term multimodality refers not just to the language and the visual and spatial design usually used to make meaning in print-based text, but also to the dynamic and constantly changing interrelationships between and among the visual, linguistic, audio, gestural and spatial modes (Jewitt, 2013).

In this inquiry, multimodality is used to refer to the multiple sign systems (modes) the reader needs to understand in order to make meaning while navigating in an online context (Jewitt, 2013).

Mode
The term mode refers to any one of a set of socially and culturally shaped mediums for making meaning (Kress & van Leeuwen, 2006). For example, a piece of writing, an image on a page, a moving image, sounds, colours and layout.

In this inquiry, the term mode is used to describe the purpose and design of texts. In the online environment the modes can be described as:

- linguistic mode, for example, written print as well as recorded voice such as narration
- visual mode, for example, images, colours, font sizes
- aural mode, for example, audio that is not narration such as sound effects and music
• spatial and gestural modes, for example, the way the space is used and the movement within the screen (Jewitt, 2009).

Navigating
In this inquiry, the term navigating is used to describe the various decisions the reader is required to make regarding the different pathways for deriving meaning from a digital text (Kress, 2010).

Metalanguage
A metalanguage is the vocabulary and understandings we use to talk about our language (van Leeuwen, 2004). In this inquiry, the term metalanguage is used to refer to terms used by participants to articulate their understandings of the skills and strategies for online reading. For example, in the ORA (Kervin & Mantei, 2015) the responses by the child participants to the ORA webpages and script provide insights into the reading process each child enacted. The child participants’ responses to the assessment items provided explicit examples of the skills and strategies they demonstrated as they read online.

Strategies
In this inquiry, the term strategies refers to the planned and explicit actions of the reader to use knowledge and skills to access and engage with texts for meaning making.

Activities
In this inquiry, the term activities refers to learning experiences that are associated with reading and writing tasks to develop literacy skills.

Teacher
In this inquiry, the term teacher refers to primary school practitioners who work directly with children (aged four to 12 years) in the primary school setting.

Educator
In this inquiry, the term educator refers to any teacher, school leader or researcher who is involved in the educational profession.

Thesis overview

Chapter 2: Review of the literature
This chapter reviews the literature with the aim of locating the research in the broader context of what is known about reading and reading online. The chapter explores the emerging literature that relates to the changing nature of literacy and the many new technologies that are now available to young children and their relationship to online reading. Redefining notions of texts and the reading practices online texts afford are then discussed along with both offline and online reading and digital games. The chapter then discusses the need for educators to develop their own offline and online reading skills and explores the importance of teachers’ roles in New Literacies classrooms. Reading pedagogies are then examined with a focus on the authentic integration of technology into instruction, and the pedagogical strategies Reciprocal Teaching (Palinscar & Brown, 1984) and Internet Reciprocal Teaching (Leu & Reinking, 2005-2008).

Chapter 3: Methodology
This chapter outlines the design of the inquiry. It discusses the methodology used in conducting the research and justifies the inquiry’s design. It then describes the research site and participants, and explains the methods used in data collection. The analytical procedures are then presented and explained. Finally, the parameters, ethical considerations and trustworthiness of the inquiry are addressed.

Chapter 4: The learning environment
This chapter presents the classroom teachers’ literacy pedagogy, beliefs and assumptions, and how they integrate technology into their literacy programs. This enables the reader to fully understand the literacy experiences of the child participants. It offers insights into the daily classroom literacy context within which the child participants work.

Chapter 5: Findings
This chapter outlines the cases of the four child participants and reports the findings from the inquiry. Individual cases are presented, in which four young children as ‘experts’ engage in a reciprocal teaching experience, teaching their peers the skills needed to create meaning from an online text. Each case study concludes with an interpretative summary.

Chapter 6: Discussion and conclusion
This chapter presents and discusses the implications of the findings from this inquiry in
relation to the supporting literature and the research questions presented in the introductory chapter. Analysis from the collective case study is used to make connections between and across cases in order to respond to the three research questions. The process of analysis reveals important insights associated with the knowledge, skills, strategies and language used by the children as they engaged with an online text during a reciprocal teaching experience. Implications from the findings are then discussed for practice, policy and theory and concluding comments are presented in relation to the inquiry’s framing research questions.
Chapter 2:
REVIEW OF THE LITERATURE
Chapter 2

REVIEW OF THE LITERATURE

Chapter introduction

As discussed in Chapter 1, the purpose of this qualitative case study was to explore the reading demands for emergent readers when reading in the online environment. This inquiry works from a premise that understanding these demands should inform strategies to develop emergent readers’ online reading skills and strategies in an effort to increase reading proficiency. This chapter positions the inquiry within the body of relevant research about reading and its crucial role in developing the literacy skills of students to enable them to learn and live in contemporary times.

This review of literature is organised into four sections. The first examines literature related to literacy theory. It discusses insights from research about the development of the literate individual, evolving definitions of literacy, and the ways New Literacies theories have contributed to ever changing notions of our understandings about ‘text’. The second section takes a focus on literature related to reading theory. Defined and discussed in this second section are traditional and contemporary views of ‘reading’ as laid out in the research literature and explores the impacts of technology on emerging theories about reading development. The third section narrows its focus to highlight current arguments related to emergent reading and the development of reading proficiency. It draws parallels in the literature between online and print-based reading practices, and examines the current understandings about the specific reading demands of online reading and online games. The review concludes in section four with a focus on reading pedagogies. This section examines the important and ongoing role of teachers and their pedagogies for teaching reading. It compares and contrasts the power and potential of existing pedagogical frames for teaching reading and proposes Internet Reciprocal Teaching as a suitable pedagogical approach for the focus of this inquiry. The four sections of the literature review are summarised in Figure 2.1.
Literacy theory

Becoming and being literate

What is Literacy?
New literacies theory
Redefining notions of ‘text’

Reading theory

Definitions and views about reading
Contemporary theories of reading in an ever changing environment

Emergent reading
Emergent reading proficiencies
Learning to read
Understanding reading development
Online reading practices
Reading and online games

Reading Pedagogies

The teacher’s role
Pedagogical practices for teaching reading
Internet Reciprocal Teaching- one pedagogical approach

Figure 2.1: Overview of the literature review

Literacy theory

Becoming and being literate

Literacy as a concept has proved to be complex. It has been interpreted and defined in multiple ways that have in turn influenced the broader notions of education and knowledge. For most of its history, the word literate has meant to be familiar with literature, or it has meant well-educated and learned. However, with a greater understanding of the integrated nature of becoming literate and its relationship with social practices (Gee, 2004) definitions of literacy have evolved over time. And literacy has become more generally viewed as the ability to interact with print-based text in reading and writing. At the same time, the word has retained its broader meaning of being knowledgeable or educated (Fransman, 2005). According to Kiili (2012) literacy defines us as humans, our intellectual and financial wellbeing, both as individuals and as nations. Some studies (Harste, 2003; Lankshear, 1994; Pattison, 1982) argue that being literate empowers individuals and societies to achieve their full potential. Today, academic success, secure employment and personal autonomy are closely aligned with proficient literate practices (National Institute of Child Health and Human Development [NICHD], 2000). Similarly, Ewing (2016) argues that, for children, learning to be
literate is crucial for generating life chances and that mastering twenty-first century literacy skills will lead to a more socially active and fulfilled life.

Although print-based texts remain a powerful and important means of developing literacy skills, to become fully literate in today’s world involves becoming skill proficient with the new literacies of the Internet and other information and communication technologies (IRA, 2009). Larson and Marsh (2005) argue that recent changes in literacy practices precipitated by developments in technology have been so profound that they have challenged our understanding of the nature of literacy itself. Currently, views about learning to be literate also encompass developing an understanding of and familiarity with electronic literacies (Waller, 2006). Marsh et al. (2015) claim that the plural form ‘literacies’ has now become more widely adopted to acknowledge the range of literacy and communicative practices developed through the use of new technologies. Today, such terms as ‘new literacies’ (Lankshear & Knobel, 2003), ‘media literacy’ (Buckingham, 2003) and ‘digital literacies’ (Glister, 1997) all appear to address similar issues about literacy, namely the ability to decode, encode and make meaning using a range of modes of communication mediated by new technologies.

What is Literacy

Traditionally, perspectives of literacy focused on the accumulation of alphabetical knowledge and the ability to learn a set of skills deemed necessary for the acquisition of reading and writing (Chall, 1967). Anderson (1980) claims a skills-based approach to becoming literate, involves teaching the skills and processes needed to decode and encode texts. This approach emphasises letter and word recognition, schemas and stages of skill learning such as phonics and phonemic awareness. Knobel and Healy (1998, p. 9) describe this approach to literacy acquisition as “a fixed neutral system of language rules, symbols and conventions” which is usually independent of the context in which it is acquired and of the background experiences of the person who acquires them. Scribner and Cole (1981) and Street (1984) describe the acquisition of these skills as the development of tools to unlock the language system, enabling the decoding and encoding of written texts. The strength of this focus lies in the planned and systematic way a sequence of predetermined literacy skills can be taught and acquired, which many would claim are critical to the development of literacy, where literacy is understood to be the ability to read and write texts (Chall, 1967; Scribner & Cole, 1981; Street, 1984).

Understandings of literacy as a social practice have shifted from a focus on skills
acquisition to the application of those skills for authentic purposes and real life settings. In this approach, literacy is what people do and not what they learn. The body of research that theorises literacy as a social practice recognises that individuals and groups construct literacy in everyday life, whilst focusing on how literacy is used in different contexts and how it is taught, learned and practised across different communities (Comber & Cormack, 1997). Street (2003) observes that when literacy is considered in this way, it evolves within meaning, practice and within context. By participating in everyday social and cultural experiences within family and community contexts, people engage in a range of literacy practices to develop literacy skills. When literacy is seen as a social practice, the scope of what is viewed as literacy broadens and varies according to circumstances such as place, purpose, culture and power (Street, 2003). Both Barton (2001) and Street (2003) claim that different everyday contexts present different literacy demands, perceptions of literacy and types of power relations, all of which influence literacy acquisition. Literature that supports these understandings claim that literacy is not a neutral set of skills that can be removed from the social context in which they are used or acquired (Gee, 1996; Heath, 1983; Street, 1995). A key strength of this view is its focus on access to a variety of texts for different purposes, with language systems such as reading, writing, speaking and listening seen as interrelated components of literacy learning (Goodman, 1986).

More recently, research (Coiro et al., 2008; Hill, 2005; Lawless & Schrader, 2008) has explored the different perspectives of emerging new literacies and argue that the Internet and other technologies require new social practices, skills, strategies and dispositions for their effective use. Waller (2006) argues that nowadays technology is used for a range of complex social and literacy practices, which are constantly changing. To become proficient and to engage effectively with these new technologies, a focus on developing new skills and literacy practices is vital. Being able to read and learn from information that is now afforded through the online environment will contribute to people’s literacy (IRA, 2009; Organisation for Economic Co-operation and Development [OECD], 2011). Karchmer (2001) highlights that the ability to create and analyse the vast array of multimodal texts that are now available is important for engaging effectively in learning and life today. New technological developments have led to significant changes in the ways we communicate, and these developments have impacted upon literacy as a social practice (Knobel & Lankshear, 2007). Consequently, research continues to build on existing theories to explore what it means to think of literacy as a social practice and to understand the literacy skills needed for engagement in today’s technical world.
New literacies theory

New literacies theory is continually evolving in the field of literacy research, with interesting and differing views about what constitute new literacies for today (Hamilton, 2010). Leu et al. (2009) assert that a more precise definition of these new literacies may never be possible because their most important features are that they are deictic and constantly changing. It is argued that as new digital technologies for information and communication continually appear, still newer literacies will emerge, with the continuous nature of these changes requiring new theories to help us understand them (Leu et al., 2013).

Research in new literacies seeks to explore the ways societies produce, negotiate, distribute and share meaning in contemporary settings (Knobel & Lankshear, 2014). Literature that does refer to new literacies (Coiro et al., 2008; Hamilton, 2010; Knobel & Lankshear, 2014; Leu et al., 2013) refers to them as forms of literacy made possible by digital technology developments. Jones (2007, p. 3) defines new literacies as “the ability to use digital technology, communication tools or networks to locate, evaluate, use and create information” and identifies these skills as critical to becoming effective users of technology. Knobel and Lankshear (2007, p. 7) distinguish two categories of new literacies and refer to them as “paradigm cases” of new literacies and “peripheral cases” of new literacies. They explain that paradigm cases of new literacies involve both new technical and ethos changes, but peripheral cases of new literacies have only new ethos changes. They argue that what is central to new literacies is not that you can use technology to look up information, listen to music or to use a word processor, but that they mobilise very different values, priorities and sensibilities than the literacies we are familiar with.

Accompanying these varying conceptualisations of new literacies, there are also differing terms used by different researchers when referring to these new literacies. They include, for example, twenty-first century literacies, Internet literacies, digital literacies, new media literacies, multiliteracies, information literacies, ICT literacies and computer literacies (Coiro et al., 2008). Literature demonstrates that new literacies are extensive and include such social practices as instant messaging, tweeting, blogging, maintaining websites, participating in online social networking, creating and sharing music videos, YouTube videos, emailing, shopping online, digital storytelling, playing online games, conducting and collating online searches, reading, writing and processing and evaluating online information (Coiro, 2003; Gee, 2007; Lankshear & Knobel, 2006;
Leu et al., 2011). For individuals to become competent in these new social practices, they need to acquire specific skills and strategies. This has created new challenges for education, including the need to develop adequate theory on which to base research when the nature of these technologies is continuously being redefined as new ones appear.

In response to the changing social practices needed to use these new technologies, literacy theories for technology-rich contexts have and will continue to emerge. The nature of literacy continues to evolve as the added information and capabilities that electronic formats provide for authors and readers, create the need to continue to explore what it means to be literate with these changing and complex technologies (Leu et al., 2009). Lankshear and Noble (2006) argue it is evident that literacy needs to be envisioned in new ways with a broader more comprehensive view of what it means to be literate needing to be developed.

Different researchers offer different perspectives of these new literacies. Some researchers (Abraham, 2008; Beavis & O’Mara, 2010; Coiro & Dobler, 2007; Henry, 2006) are focused on the technological influences on literacy while others (Gee 2007; Kalantzis & Cope, 2012; Kress, 2003) adopt a broader view, and are more concerned with conceptual and theoretical insights into the changing nature of literacy. The perspective which views literacy as a social practice has come to be termed New Literacy Studies (NLS) (Gee, 2007; Street, 2003). NLS views literacy as a social practice in order to help explain what types of knowledge are necessary for effective literacy practices in contemporary settings (Gee, 2007). NLS explores the connections between literacy and identity and views literate behaviour and a person’s identity to living everyday life (Gee, 2007). However, it is important to note that NLS recognises that technologies have brought change on an unparalleled scale to literacy learning. Acknowledging and being able to continuously adapt to the literacies required by new technologies is, and will continue to be critical for educators (Burnett, 2009; Lankshear & Knoble, 2011).

Globally, the notion of ‘literacy’ is continually being reconsidered to incorporate the wide variety of forms of communication that are present in society as a whole and in the lives of school-age children. Researchers (Abrams & Merchant, 2013; Coiro et al., 2008; Kress, 2003; Merchant, 2006) claim that curriculum developers need to re-conceptualise how young children acquire and develop literacy for today’s technical world as patterns of communication are changing in a new social environment. Coiro et
al. (2008) argue that to be literate is more important than ever before, as the technologies that have become part of daily life demand a certain level of digital literacy. However, the curriculum outcomes of many English language education systems continue to frame literacy in terms of book reading and print-based media, with technology mentioned as a supplement to existing literacy practices (Coiro et al., 2008). Levy (2009) and Marsh (2005) claim that across the world change in education systems to include technology into curriculums has been moving at a conservative pace. To make education more relevant to the everyday lives of children, Abrams and Merchant (2013) argue that education systems nationally and internationally need to consider the position of technology integration in curriculums and classrooms. Despite the rhetoric around the importance of digital literacies in curriculums, Burnett and Merchant (2015) report that recent curriculum reforms have tended to support traditional literacy skills and print-based text. And this problem continues to challenge teachers to incorporate technology and new literacies into classroom practice. According to Scott (2010, p. 15), education systems globally are “failing to prepare students adequately for citizenship by equipping them with the skills to address complex societal, economic and environmental issues” and that digital technologies still only play a minor role in education.

There is now much evidence to suggest that young children enter school having accumulated a range of proficiencies in digital technologies, and therefore schools should begin to teach these new literacies as soon as young children begin formal schooling (Forzani & Maykel, 2013; Marsh, 2005; Yamada-Rice, 2010). Researchers (Allington, 2003; Gee, 2008; Leu et al., 2004) argue that educators need to shift towards a view of literacy that is inclusive of both existing print-based literacy and digital literacy. This, Waller (2006) argues will bridge the differences between school and home definitions of literacy and support children’s views of literacy, which often narrow to more traditional views upon school entry. While in some cases school children do not have opportunities to build on their out-of-school digital skills, O’Hara (2008) claims that increasingly teachers are attempting to develop ways that enable learners to access, respond to, and create using technology. Leander (2009, p. 149) suggests these new literacy practices be “fruitfully taught side-by-side, rather than the ‘old’ being a precursor to the new or being replaced by it”. This view is supported by Kervin et al. (2017) who highlight the need for traditional and new reading practices to be part of classroom teaching, with online reading moving to a central position in curriculums alongside print-based reading. Solis (2014) argues for education systems to view technology as an enabler in settings, where students can learn and collaborate to
develop the skills needed to tackle future complex global challenges. Research must continue to be driven by a desire to better understand the new skills, strategies and dispositions required to effectively use the Internet and other digital technologies (Burnett, 2009; Leu et al., 2008; Levy, 2009). This inquiry aims to contribute to developments in this field.

*Redefining notions of ‘text’*

As the literature has established, online reading takes an ever increasing role in everyday life and the Internet has been described as this generation’s defining technology for literacy and learning (Danby et al., 2013; Hill, 2005; Leu et al., 2013). The Internet offers all readers a vast array of texts in an environment of constant change (Leu, 2007). Burnett and Merchant (2015) observe how new digital and networked environments challenge traditional assumptions about the nature of texts. As not only do the tools and information change, but the meanings and viewpoints presented can also change relative to the contexts within which they appear. The result is that texts have become more complex, multifaceted and nuanced, requiring new kinds of reading proficiency from an earlier age. The definition of text is now not straightforward. Burnett (2009, p. 260) states it is clear that “complex interactions occur between children, technology and their wide ranging experiences of literacy”, and this has influenced the ways in which young children make meaning from and produce texts.

While multimodality has always been a feature of almost any text, Internet technologies have broadened the ways they are constructed. Jewitt (2009) describes a broadened notion of ‘text’ as new opportunities for integrating traditionally privileged modes (print and image) with a range of modes (linguistic, visual, auditory, gestural and spatial) to convey meaning and express meaning through functions. The interactions between the functions of the modes Jewitt (2009) claims, are expressed through features, ideational (representation of people, places and events), textual (physical structure and cohesion) and interpersonal (relationships and connections between people, places and events and the relationship between author and reader). These text features are expressed through an ensemble of print, image, sound and movement. Online texts encourage readers to explore and navigate information in a non-linear way through pathway choices, and these paths may be different to those of other readers (Jewitt, 2013).

The multimodality of online texts is one component that broadens understandings and definitions. Online texts are often non-linear, using hyperlinks to convey an array of pathways for readers. Further, online texts can be interactive (Jewitt, 2013) providing
unique opportunities for people to network with others using a range of technologies for new social practices, including searching the Internet, watching YouTube videos, engaging with games and apps on mobile devices, text messaging and interacting with virtual worlds.

Embracing a broadened notion of what a ‘text’ is has important implications for the ways learners are supported to develop reading proficiency. Whether print or screen based, it is clear the reader requires a sophisticated set of reading skills in order to succeed within and beyond the lessons of school.

**Reading theory**

*Definitions and views about reading*

The ability to read has always been key to engagement in life. It empowers those who can read and disempowers those who are less proficient. Although reading is just one component of literacy, Cope and Kalantzis (2000) claim that it remains central to the idea of literacy and, as such, definitions and views of reading have been well researched over time. Understandings about how young children learn to read have been informed and advanced by ongoing research both in Australia and internationally. Interestingly, while approaches have changed overtime, Moustafa (1997, p. 4) argues that a focus on the purpose of reading as “making sense of print” has remained central to reading pedagogy and theory. In defining reading, Adams (1990, p. 38) claims that a great deal of research evidence converges on the following definition of reading:

> Reading is a complex system of deriving meaning from print which requires the development of the motivation to read, active strategies to construct meaning from print, sufficient background information and vocabulary to foster reading comprehension, ability to read fluently and decode unfamiliar words and the knowledge and skills to understand how phonemes or speech sounds are connected to print.

To gain insights into the organisation of early reading behaviours, we can draw on an accomplished body of research by Marie Clay and Kenneth Goodman, both of whom have influenced the field of education through their research into reading theory and their many publications over a significant period of time. Both Goodman’s and Clay’s work inform our understanding of the reading process for young children, as they move from dependence to independence in reading. Goodman (1967, p. 2) claims that reading is a “precise process”, explaining that to read is to be a “problem-solver, who engages in a multifaceted process to make meaning from the complex text puzzles that are
is a complex process, a message getting, problem solving activity, which increases in
power and flexibility as it is practiced”. Clay argues that readers who are in the early
stages of developing reading proficiency need to find and use many sources of
information and they read for meaning. Clay (1991, p. 14) claims:

All readers, whether they are very young children or effective adult readers need to find
and use different kinds of information in print, and combine this information with what
they carry in their heads from their past experiences with language, to read for meaning.

Clay’s (1979) theory assumes that a child begins to read by attending to many different
aspects of printed texts (letters, words, pictures, language, messages, stories). As the
child gains reading proficiency, they learn more about each of these areas and about
how to work on the interrelationships between them. Clay (1991, p.44) identifies
factors, which she argues enables progress in early reading. They are:

- Attending to the ways print works
- Using sources of information (e.g., visual, phonological, language, meaning)
- Engaging in strategic activity to solve problems (e.g., searching, selecting, evaluating,
  deciding, monitoring, correcting, confirming)
- Being flexible when choosing among alternatives to solve problems.

Goodman (1967, p. 2) explains “that reading is a selective process” in which the reader
makes tentative decisions that are confirmed, rejected or refined as the reading
progresses. When young children begin to read, they use information from a variety of
sources, make decisions and evaluate them in a continuous cycle of learning. Young
children also use their background knowledge and understandings of the text’s
vocabulary. Their familiarity with semantic and syntactic structures helps them to
predict relationships between letter sounds and words, and to read fluently for meaning
(Fountas & Pinnell, 1996). In supporting these views, Goodman (2003) and Ewing
(2006) both claim that early readers need to develop a repertoire of skills and strategies
to draw upon in order to engage with texts to make meaning. Goodman (2003) observes
that proficient readers are distinguished from less proficient readers, not by the reading
process itself, but by how well it is orchestrated. Fountas and Pinnell’s (1996) model of
the reading process is shown in Figure 2.2.
Research into reading theories is ongoing. The NICHD (2000) reported five foundational areas that it considers critical for print-based reading proficiency. These are phonemic awareness, phonics, fluency, vocabulary and comprehension. The report also claimed that learning how to read is a combination of these foundational skills, and proposed that these skills are interconnected and interdependent on one another, making it difficult to acquire them in isolation. The National Early Literacy Panel (NELP, 2008) also identified five key predictors to reading success and literacy achievement for young children. These key predictors are concepts about print, print knowledge, reading readiness, oral language and visual processing. Young children learn to use these skills and knowledge, and combined with their oral language, illustrations, print and their experiences, create and communicate meanings in a variety of ways (NELP, 2008). Both Goodman (1967) and Clay (1979) claim that most children can become literate, that is developing reading and writing proficiency if the conditions for learning are right. Supporting this view, Brown (2014, p. 35) argues that children can develop a strong foundation for literacy and reading development if they are “given opportunities to engage in purposeful and meaningful language use, early print activities and given developmentally appropriate settings, materials, experiences, and social support”.

Contemporary theories of reading in an ever changing environment
What has been established in the literature is that reading is a complex process, whether it be on the page or the screen (Afflerbach & Cho, 2010; Burnett, 2017; Clay, 1979; Coiro & Dobler, 2007; Goodman, 1967). What is known is that online reading practices
almost always build on foundational reading practices rather than replace them and that additional skills and strategies are required during online reading (Hill, 2005; Leu et al., 2004). Research (Castek, 2008; Coiro, 2007; Danby et al., 2013) has indicated that fundamental print-based skills related to letters, words and directionality are even more important in the more complex online environment because of the greater volume and diversity of information demanding the reader’s attention. While the literature establishes that reading is about making meaning, Rowsell and Burke (2009, p.106) note that reading in an online context requires “a different logic and set of practices” for meaning making to occur. To explain further, Duke and Pearson (2008) and Valencia, Wixson, & Pearson (2014) found that there are clear connections between the skills required for controlling and manipulating an online text and the reader’s ability to make meaning, including such skills as manipulating menus, scrolling through pages, critiquing text purposes and understanding how texts work. When reading online, Coiro (2011) and Leu et al. (2013) claim that extra elements and new forms of knowledge are required to read the vast array of online texts and understand their purposes. These extra elements include for example, the way the modes (linguistic, visual, aural, gestural and spatial) of a text interact and the functions (ideational, textual and interpersonal) are expressed through print, image sound and movement (Jewitt, 2009). It also includes the different non-linear reading pathways chosen by the reader to locate, evaluate and effectively use these extensive resources that are now afforded through digital technology and the Internet space.

Afflerbach and Cho (2010) reviewed a large number of studies that focus on reading strategies used during Internet and hypertext reading. Their analysis found evidence of strategies and skills that seem to have no equivalent in print-based reading. Many of the strategies were centered around a reader’s ability to use methods to reduce uncertainty while navigating and negotiating suitable reading pathways. Examples of these include the use of key words and the reading of search engine results during reading and problem solving with online information. While these strategies can be used in offline reading, they are nearly always used when reading in an online environment (Coiro & Hobbs, 2016). Afflerbach and Cho (2010) claim that the reciprocal nature of offline and online reading is yet to be fully understood, as the online environment is continually evolving, leading to new reading demands and new ways of making meaning.

Extensive research (Coiro & Dobler, 2007; Kulikowich, 2008; Lawless & Schrader, 2008; Leu et al., 2013; Mayer, 2010) has been conducted to examine the skills and strategies required to develop online reading proficiency for researching information
and using the Internet. Leu et al. (2013) report that online reading consists of a problem solving process usually across many different online information sources, which all require several recursive reading practices that can often be complex. Coiro and Dobler (2007) describe online reading as self-directed, as the reader selects the online texts they read through the hyperlinks that they follow. This results in each reader uniquely choosing their own reading pathway, as they select different links to locate information, often to solve the same problems (Castek, Coiro, Guzniczak, & Bradshaw, 2012). Online reading is usually collaborative and social, rather than an individual activity (Kiili, 2012). However, what is clear is that the continuities and discontinuities between offline and online reading have created challenges for educators.

Marsh et al. (2015) and Kervin (2016) claim that very little empirical research has been conducted into young children and their reading in the online environment. However, research (for example, Burnett, 2009; Cope & Kalantzis, 2009; Danby et al., 2013; Edwards-Groves, 2012) has been conducted with young children to understand the multimodal practices, skills, understandings and processes to develop new literacies and to engage with digital technology. And research suggests that students face difficulties in using technology and critical thinking skills for problem solving (Bennett et al., 2008; Castek et al., 2015; Leu, Kiili, & Forzani, 2015b). What is clear from the literature though, is that children from an early age must be supported to learn new literacy skills to develop proficiency in the additional areas required for online reading. Abrams and Merchant (2013) claim that more needs to be done to uncover what we need to know about technology and digital literacies within classrooms, as there is a dissonance between the in-school and out-of-school literacies experienced by students. New understandings need to be generated about the literacy demands of these continually emerging forms of digital texts to support online reading teaching.

Jewitt (2013) argues our understanding of reading has been challenged, as what we understood as ‘text’ has expanded within a technology-flooded environment. As has been previously established in this review, digital and online texts have adopted new ways to present meaning through “non-linear, reading pathways and novel multimodal arrangements” (Mantei, Lipscombe, & Kervin, 2018, p. 172). And when reading online there is a shift from a focus on the reader and the reading practices they demonstrate, to a careful consideration of their interactions with a much wider array of modalities (Jewitt, 2013). Pahl and Escot (2015, p. 490) describe the “scattered landscape” of the Internet, and acknowledge the contexts within which texts are created by authors and the affordances which now include sound, image, text and movement within dynamic
and changeable spaces. While approaches to teaching reading have usually focused on children’s proficiency with print, it has been argued for some time that an exclusive focus on the print is insufficient for making meaning with the increasing number of multimodal, digital and online texts that children now engage with in their daily lives (Coiro, 2003; IRA, 2002; RAND Reading Study Group, 2002; Sutherland-Smith, 2002). It is timely for researchers to continue to contribute to this area of research to appropriately inform policy makers, so that they can create curriculums which are explicitly aimed at teaching the skills for online reading (Kervin et al., 2017).

Emergent reading

Emergent reading proficiencies
Ewing (2018) claims that an independent and robust reading process is essential for children’s life chances, and that young children should begin learning this process as emergent readers. Clay (1991) describes an emergent reader as one who is in the early stages of developing the skills and strategies for reading, and suggests that even though emergent readers are typically young children, the term is also applicable to older readers whose reading has been delayed. Emergent readers attempt to apply early understandings of the rules of engaging with text (Goodman, 1976). They demonstrate behaviours that precede, and usually develop into conventional reading practices (McNaughton, 2014; Sulzby & Teale, 1991) to gain meaning from texts. These may include the foundational skills for both offline and online reading, such as the recognition of letters, words and directionality, and the ability to manipulate menus and scroll through online pages. Kervin et al. (2017) observe that emergent readers require support from more knowledgeable others, as they learn to extract meaning from both offline and online texts for future reading proficiency.

Learning to read
Developing reading proficiency is basic to being literate and learning to read is about making meaning from texts (Ewing, 2018). Traditionally, the teaching of reading begins with print-based text. Through explicit instruction, learning experiences and interactions, usually with adults, emergent readers can develop a strong foundation for literacy and reading development. This involves being given opportunities to engage in purposeful, meaningful language and early literacy activities. As they continue to learn, emergent readers increasingly consolidate what research refers to as foundational skills (Brown, 2014; National Association for the Education of Young Children [NAEYC], 1998; NICHD, 2000). Research (Ballantyne, Sanderman, & McLaughlin, 2008; Brown,
2014) provides evidence that foundational skills including phonics, phonemic awareness, vocabulary, fluency and comprehension can predict young children’s later reading ability. To read, emergent readers organise information into patterns that allow for automaticity and fluency to develop reading competency (Clay, 1979). Reading, Brown (2014) claims is a developmental process. As emergent readers learn how to read print-based texts, they usually follow a similar pattern and sequence of reading behaviours, and move between the stages of reading development at their own pace. Consequently, learning to read is conceptualised better as a developmental continuum than as an all-or-nothing phenomenon (IRA, 2009). Brown (2014) claims that foundational skills for reading are the building blocks that children learn to utilise, to subsequently develop the higher-level skills needed to become proficient offline readers. Ballantyne et al. (2008) argue the foundations of good reading are the same for all children, with most children using the same processes in learning to read regardless of their gender, background or learning needs. What is known though, is that young children who have an opportunity to develop basic foundational skills in reading usually develop and flourish as competent readers, supporting long-term academic and life success.

In comparison to what we know about emergent readers engaging with print-based texts, the research about online reading is in its early days. However, given findings that prior to school many children experience exposure to both print and digital forms of text (Burnett, 2009; Danby et al., 2013; O’Hara, 2008), literacy teaching and learning should have a focus on teaching reading skills for both print and digital texts right from the earliest years of schooling. Levy (2009) and Yamada-Rice (2010) suggest that teachers need to acknowledge children’s skills, knowledge and understandings about digital literacies developed prior to school, and use these as foundational building blocks to further develop digital practices and online reading proficiencies in the early years of formal school.

Recently, Kervin et al. (2017) explored how emergent readers access and understand the mechanics of online reading. These researchers claim that it is unclear what skills and strategies children, as emergent readers understand and control and can therefore apply as increasingly independent readers of online texts. However, they do explain that “without being able to manipulate menus, scroll through a page or critique the purpose of different parts of an online text, a reader is at risk of reaching unsubstantial conclusions” (Kervin et al., 2017, p. 13). Young emergent readers develop a certain familiarity with the online environment through engagement with online technologies.
such as networking within virtual worlds, YouTube videos and playing online games, but these practices do not necessarily develop the skills and strategies for proficient online reading (Marsh et al., 2015). As the complexity of online texts increases, the reader is required to navigate non-linear pathways and draw on multiple modalities, and these combinations have challenged user’s traditional understandings of how information is represented and shared (Jewitt & Kress, 2003).

Research (Castek et al., 2015; Coiro, Castek, & Quinn, 2016; Cope & Kalantzis, 2009; Leu et al., 2013) with older more proficient readers has established that different skills are required for reading online texts. Leu et al. (2013) have argued that adolescent readers, when reading online information to learn, must use the practices of questioning, locating, critically evaluating, synthesising, and communicating in order to construct texts, meaning and knowledge. However, Leu et al. (2015b) claim that students are not yet particularly skilled in online reading and they are limited in their ability to locate information and think critically about online information and sources. They argue adolescent readers find it difficult to judge the reliability, accuracy and bias of sources. Since the Internet continues to become increasingly important in our lives, research needs to continue to consider the different social practices, skills, knowledge, experiences and expectations that a reader brings to the online environment (Leu et al., 2015b).

**Understanding reading development**

To understand reading development and to plan effective reading programs, educators need to assess students’ reading abilities. The purpose of assessment is to gather valid, reliable and useful information about student learning with authentic assessments being situated within classroom practice (ACARA, 2015).

Reading assessments inform teachers about children’s reading development. An effective reading program for early reading development will include assessments of reading for several purposes; identifying skills to be reviewed by some students, identifying groups of students for specific instruction, selecting appropriate texts to support student’s reading needs, monitoring student progress, guiding teacher instruction, demonstrating the effectiveness of instruction and supporting teachers to reflect on pedagogies for improvement (ACARA, 2015). Notable reading assessment resources that have been used over time to support the assessment of early print-based reading are Goodman’s (1967) Miscue Analysis and Clay’s (1979, 1993) An Observation Survey of Early Literacy Achievement, which includes the assessment
tools Running Record, Concepts About Print (CAP), Letter Identification, Hearing and Recording Sounds in Words and the Duncan Word Test (DWT). These tools support teachers to gain insights into children’s reading process and monitor their reading development. However, it is the Running Record (Clay, 1979) that is used most often in the earlier stages of reading to assess reading behaviour, to monitor and check progress and to inform reading instruction. Running Records are designed to be systematically applied as a child reads orally from a text. Their purpose is to gather evidence of how well children are learning to direct their knowledge of letters, sounds and words to understanding the messages conveyed in print-based text. Running Records guide teaching by providing teachers with immediate information to make decisions about what a child can control and what they need to control next, to inform future instruction.

Of particular interest to this inquiry is Clay’s (1979) Concepts About Print (CAP) assessment tool which gathers information about how emergent readers interact with print-based text as they follow, monitor and identify specific elements of the print guided by the teacher script. These concepts are “directional movement across print, the orientation of letters and how the reader attends to the sequence of letters and words or ideas” (Clay, 1979, p. 41). According to Clay, emergent readers must learn and attend to these concepts automatically, while reading for meaning with print-based texts. The purpose of this assessment is to gain information about what young readers already know about books and print. It also identifies the differences in what individual children can attend to when reading.

Understandings from literature (Danby et al., 2013; Levy, 2011; Roswell & Pahl, 2007) report that students enter school with diverse backgrounds and literacy skills, and with an increased familiarity of technical devices and the online environment. For these students many of their prior to school educational, social and creative experiences have included digital technologies, as these technologies are apparent in almost every facet of children’s everyday lives. With a shift to more affordable and portable mobile devices, Danby et al. (2013) claim that young children have more opportunities to engage with technology, thus developing capabilities to do so. And teachers are increasingly required to cater for a diverse range of students, each with individual experiences and ways of learning to read and write. The question is no longer whether children should access digital worlds, but how best to support them in their use. Kervin et al. (2017, p. 13) note however, that “school entry tests include limited assessments of the online reading of young emergent readers”. In many nations, curriculums give a significant amount of attention to the assessment of offline reading but overlook the assessment for
online reading. What we know is, it is important that teachers understand the ways that young emergent readers interact and make meaning with both offline and online texts. Leu et al. (2004, p. 1606) argue that there is little incentive for teachers to integrate online reading into the curriculum until it is “included in state and national standards and literacy assessments”. Research examining the assessment of online reading has focused mainly on older students and their access, reading preferences, pathways and interactions with online environments (Coiro, 2011; Leu et al., 2008). It is essential that we consider how to gather evidence about what emergent readers can and cannot do when reading online to understand their reading development.

Even though many research studies (for example, Doyle, 2011; Hill, 2005; Lankshear & Knobel, 2003; Mishra & Koehler, 2006) have examined the integration of technology with literacy pedagogy, Leu, Forzani, & Kennedy (2015a) claim that currently we have few assessments for online reading, research and comprehension. This view is supported by Levy, Yamada-Rice & Marsh (2013) who claim a key challenge for education is that as yet, there are few multimodal, multimedia texts that can be used by teachers to assess where learners are and where they need to go next. Bearne (2009) has developed a model of progression to analyse multimodal texts, but claims this is just a starting point and there needs to be further research in this area. This has implications for education, for if teachers don’t know how students perform in the areas of online reading, they have difficulty monitoring students’ online reading development or planning instruction. It is also important to recognise that any assessments developed for online reading will have a more limited “shelf-life” (Leu et al., 2015a, p. 232) than traditional print-based reading assessments because of the ever evolving nature of technology and the emergence of new literacy practices. Like Bearne (2009), Leu et al. (2015a, p. 233) suggest that any assessments developed for online reading can be “starting points” for instruction, and can support the development of additional skills, strategies and literacy practices required for skilled online reading. It is essential to develop these assessments quickly, so teachers can connect assessment to instruction and develop powerful ways to support students to read and learn from digital multimodal texts (Leu et al., 2015a). Valid and reliable assessments of online reading that are also practical for teachers to use are essential if we are to prepare students for their literacy futures.

One prototype assessment tool currently under development, the Online Reading Assessment (ORA) (Kervin & Mantei, 2015) has been developed to provide researchers and teachers with insights into the emerging reading practices of online readers. The
ORA extends on the principles of the CAP (Clay, 1979) assessment tool and provides information about what young children attend to when reading an online text. The ORA tool is discussed in more detail in Chapter 3.

**Online reading practices**

It is well established in seminal and more recent literature that the practice of reading is about making meaning (Emmitt, Hornsby, & Wilson, 2013; Ewing, 2018; McNaughton, 2014). That is, a reader reads in order to understand, connect with and respond to the content they read. And this purpose is no different for a reader engaging in an online environment. What does change in the practice of reading online, is the ways a reader is expected to make meaning across a greater range of modalities. Burnett and Merchant (2018) claim that the multiple and complex digital reading practices of children and young adults need to be addressed alongside the changing nature of literacy.

Literature has established that reading online involves a different process from the left to write, linear reading of print-based texts (Kress, 2003; Walsh, 2006). In fact Coiro (2012) argues, online texts create new challenges for readers as their characteristics require different processes to construct meaning. When reading online, the practices of meaning making are complex and varied (Burnett, 2017) and involve the reader not only engaging with meaning as it has been expressed within and across the modes, but also the actions and processes involved with achieving different meaning making purposes.

Online environments enable readers to engage in new practices. These involve for example, constructing personal responses to others, publishing online, communicating and sharing information in new ways for specific purposes. The New London Group (Cope & Kalantzis, 2000) identified online practices that young children engage with when interacting with online environments; web-searching, playing games, music, virtual conversations, cutting/pasting text, manipulating graphics, web-cameras, importing photographs, movies, slideshows, exploration of digital still photography, podcasts, weblogs (blogs), YouTube and video-clips to name a few. In addition to these, Lawless and Schrader (2008) identified the use of hyperlinks, interpreting icons, scrolling through menus and navigating pathways as particular online practices that children require to engage successfully in online environments. Other studies (Danby et al., 2013; Marsh et al., 2015; Pahl & Escot, 2015) found that young children use technologies to search for information, communicate and to document, and these affordances have become popular activities practiced by young children using online...
environments. Although it has been established that reading, writing, listening and speaking are important for literacy proficiency, Hill (2005) claims that it is fundamental for young children’s emergent literacy development to be able to decipher, code break, achieve meaning and express ideas through a range of media. It is important to note that Beavis, O’Mara, & McNeice (2012) report that the practices associated with the online environment promote active participation, while developing new literacy practices for the reader. These practices require new ways of thinking about how to access, manipulate and respond to the vast pools of information now available online (Jewitt & Kress, 2003).

Walsh (2011) argues, even though children today adjust quickly to the navigational potential and new practices in online environments, how are these impacting childrens’ learning. Walsh (2011) questions whether young children need to develop different cognitive capabilities than those they need for reading print-based text. Gee’s (2003) research on video games suggest that new processes that are necessary to use digital technologies, such as the iPhone and iPad (which rely on gestural and spatial modes) require further investigation to determine the impact these new practices have on young children’s cognitive processing. More recent research (Beavis et al., 2012; Mayer, 2010) point to the influences on metacognitive skills when children are engaged with online practices, such as electronic games. These studies found that when children are playing games they are continually in the process of problem solving and practicing their working memory and their reasoning skills. As children enter formal schooling with growing familiarity with the online environment, teachers are offered exciting teaching opportunities to develop new practices using a range of texts and for different purposes. However, being familiar with technology and online environments doesn’t necessarily mean young children will develop clear understandings about the literacy demands or the skills needed to meet them (Kervin et al., 2017).

Reading and online games
There are a now a range of different types of digital games that offer opportunities for engagement, creativity and emotional response, and these can vary from games with educational purposes to develop specific skills, and to games which aim to amuse and entertain (Levy et al., 2013). Digital games can also differ according to the device they are played on. However, it is becoming increasingly recognised that digital technology, including games play an important role within the context of the classroom and in children’s social lives (Burnett, 2014). Supporting this view, Marsh et al. (2015) claim
that increasingly younger children are interacting with a range of digital technologies for leisure and learning using computer and mobile devices. Therefore, it is important to examine what do digital games offer in terms of supporting pedagogy in classrooms.

Levy and Marsh (2010) claim that digital games are complex texts that require new literacies for engagement. To successfully engage with games, Kervin et al. (2017) report the reader needs knowledge of the text purpose and its methods of conveying meaning. Kress and van Leeuwen (2006) claim that depending on the design of the game, the reader needs to make decisions about reading pathways for gaining access and to make meaning. Other studies (Levy, 2009; Merchant, 2014) have found digital games require strict adherence to a set order for reading, where topics and the form of the game are predictable. This predictability, Kress (2010) claims is realised through the games layout. Other digital games are less predictable and allow the reader to shape their own, often non linear paths to meaning.

With the increasing inclusion of multimodal texts in classrooms, there needs to be a focus on the use of games in educational contexts (Mayer, 2010). Research (Fregola, 2015; Marsh, 2010) found digital games have had a positive influence on children’s metacognitive skills by providing opportunities to interact with rich and complex literacy environments, which require complex social practices. By incorporating games in learning activities, children have opportunities to use sound, image, movement, proximity and printed text to interact and make meaning (Mayer, 2010). Games allow for children to engage in social practices while developing important new literacy skills. Supporting this view, Beavis et al. (2012, p. 2) argue the inclusion of games in learning provides activities for young children to develop new literacy practices, through opportunities to be “critical uses of these multimodal forms”. More recently, Fregola’s (2015) study found that the use of games in mathematical activities increased thinking and learning processes and developed skills such as counting, exploring space and problem-solving. Other research (Marsh, 2014) found that games support the social and emotional development of young children by providing opportunities to explore self-identities, engage in role play and follow rules, use fantasy, drama and ritualised play. Gee (2003, p. 68) argues that games encourage high levels of engagement by inviting the player to become immersed in a virtual world and where the player makes an “identity commitment”. Gee (2003) also highlights that this immersion often results in the player engaging in repeated practice of a skill, which often the player may not realise is taking place. Compton-Lilly’s (2007, p. 722) research on the links between
digital games and reading found that this immersion in a text is “precisely what good readers do”, and aligns this repeated skill practice to fluent print-based reading. Proficient print-based readers don’t read to improve decoding skills or extend sight vocabulary, but engage in reading activities for enjoyment (Compton-Lilly, 2007). Beavis et al. (2012, p. 2) suggest that digital games can provide opportunities for learners to be “critical makers and users of these multimedia forms”, and develop non-linear literacy. Research (for example, Burnett, 2017; Fregola, 2015; Levy et al., 2013) indicates that many digital games give learners opportunities to engage in literacy practices for real life purposes, including opportunities to exchange with people outside of the classroom. Engagement with online texts, such as digital games can promote ‘new literacies practices’ based on co-construction, collaboration and active participation (Coiro & Hobbs, 2016; Danby et al., 2013).

There has been significant research in the last decade (Beavis & O’Mara, 2010; Burnett & Merchant, 2015; Danby et al., 2013; Kalantzis & Cope, 2012) around the advantages of using games in academic settings. However, some small studies raise negative concerns about children’s wellbeing and impact on aggression (for example, Hastings et al., 2009). Levy et al. (2013) do warn that it is naïve to assume that using games in classrooms will facilitate children’s learning and urge for research to continue to develop understandings of the ways in which digital media, such as digital games impact on pedagogy and learning. And even though there has been an increase in studies around the use of digital games in education, Danby et al. (2013) claim empirical evidence is often mixed and inconclusive. The use of digital games in an educational setting is of significance to this inquiry as it was the researcher’s online text choice used in this inquiry.

**Reading pedagogies**

There has been continuous research and prevailing debates about the most effective reading pedagogies for our schools (Bouffler, 1997; Brock, 1998; Kennedy & Shiel, 2010; Kervin et al., 2017; Leu, et al., 2013; Rosenshine & Stevens, 1986; Turbill, 2002). However, Turbill (2002) claims that these debates are part of a process that forces us to constantly search for better ways to develop pedagogies for reading instruction that benefit all children.

Some significant findings in reading pedagogy research have been the centrality of the teacher’s role in teaching the reading process, and a consensus that there is not one best
method to teach children to read (Baumann, Hoffman, Moon, & Duffy-Hester, 1998; Chall, 1967; Shannahan, 2003). The International Reading Association (IRA, 1998) discusses several instructional practices that can promote young children’s reading development, however what is emphasised is that many approaches can be effective provided they fit with children’s needs. Ewing (2018) claims that there is no single, simplistic answer to the problem of how best to teach reading. She claims that teachers need to gain an understanding of a wide repertoire of pedagogical skills and apply this knowledge to design learning experiences that will meet the individual needs of children in developing reading proficiency.

**The teacher’s role**

Traditional models of literacy instruction focus on an adult whose role is to transfer literacy skills to a group of students who do not have those skills (Levy, 2009). However, Harste (2003) claims that the transfer of core knowledge is only one, and perhaps a less important function of schooling, in environments where students have become more proficient in the new literacies than their teachers. Claims that children’s childhoods are being socially and virtually constructed by digital technology (Danby et al., 2013) and that students have spent their entire lives in an online world and are very skilled in many online literacy practices (Leu et al., 2013) respond to the needs this generates for learners. Leu et al. (2013) argue that teachers are more important than ever before, as pedagogies require a careful balance between models of information delivery alongside models that develop critical and creative thinkers and skills for problem solving, interpreting and responding to sophisticated texts. Levy et al. (2013) recognise that teachers may not always be the ones with the most expertise and knowledge, and that learners may have more advanced knowledge and skills in the area of digital literacies and can guide the learning of others. As such, the success of contemporary learning experiences is increasingly dependent on the ability of a teacher to orchestrate literacy learning opportunities between students with different types of proficiencies with new literacies (Leu et al., 2013). One feature of this new teacher role is the redistribution of knowledge, and the roles students and teachers take on for teaching and learning (Levy, 2009).

In a climate of continual change where developments in technological devices and their capabilities are constant, it is vital that educators are at the forefront in developing pedagogies to support the integration of new literacies into the curriculum (Leu et al., 2015a). Merchant (2009) claims that digital technologies unsettle traditional ways of
thinking about curriculum and pedagogy, but at the same time presents exciting and radical times for education. As the teaching role continues to undergo great change and education systems continue to strive to embrace a more flexible view of literacy that is inclusive of new literacies, educators will be challenged to rethink their roles within the classroom. They will need to shift pedagogies to provide learning opportunities for young readers and writers to enable them to become literate in today’s digitally rich environment.

*Pedagogical practices for teaching reading*

Husbands and Pearce (2012) reviewed several pedagogical methods for successful reading instruction. Their findings provided robust evidence that effective reading pedagogies depend on “behaviour (what teachers do), knowledge and understanding (what teachers know) and beliefs (why teachers act as they do)” (p. 3). Building on the learner’s prior knowledge and experience were also important factors. These findings align with research by Edwards-Groves (2012) who found that teaching is about what and how well we teach, to enable learners to be knowing and skillful in literacy practices. The National Research Council (NRC, 2012) found that effective reading teachers adapt their instruction and make changes designed to meet the needs of individual children. Most children can be successful readers if effective instruction in reading is provided, and if teachers, who are closest to children, are the ones who make decisions about what reading methods to use (Johnston, 1997; Snow, Burns & Griffins, 1998). This includes the practice of reading, in which construction of meaning involves social interactions between people and resources. Vygotsky (1978) theories related to learning as a social practice describe social and structural support for students, while learning new concepts. Vygotsky (1978) argues that the process of learning involves moving into a ‘zone of proximal development’, the distance between the level of development and the level of potential development, and is supported by adult guidance or in collaboration with a more capable peer. There are many forms of pedagogies that aim to achieve balance in literacy teaching by adopting socio cultural theories of learning that allow for group approaches to tasks and sharing of responsibilities within rich learning environments. For example, Internet Reciprocal Teaching (Leu & Reinking, 2005-2008), which is examined in this inquiry. Building on what we already know about effective reading pedagogies has become even more important as teachers grasp the significance of the technological changes taking place and how they can enable their learners to develop digital literacy skills, knowledge and understandings for future employment and leisure (Levy et al., 2013).
This points to the view that teachers today are challenged to design and implement high quality literacy pedagogies for learners to enable them to partake in literacy experiences within and beyond the classroom. Both Luke & Freebody (1999) and Danby et al. (2013) suggest that literacy educators should use approaches to reading instruction that are balanced and integrated and embed learning experiences in real and meaningful contexts. Luke and Freebody (1999) claim that teaching reading with a balanced approach acknowledges the complex nature of learning to read. A balanced approach involves coordinating a focus on continuous texts or ‘whole’ texts, while matching explicit reading instruction with independent learning and language exploration (Pressley, 2006). This method scaffolds children’s reading development through the pedagogical strategies of reading aloud, guided reading, shared reading, independent reading and word study (Pressley, 2006). According to Frey, Lee, & Tollefson (2005) a balanced approach has been seen as successful, as it uses a ‘gradual release of responsibility’ process and allows the teacher to provide differentiated learning experiences for individual children. Other noted strategies to develop reading proficiency include reader’s theatre (Peebles, 2007) where the whole class or groups of students learn and rehearse lines from a play to build fluency in reading, reader’s workshop (Fountas & Pinnell, 2001) involving students reading, writing, listening and speaking together or independently and language and word study (Spiegel, 1998) where phonological awareness, phonics, sight word recognition and vocabulary development are the focus. More recently, Kiili (2012) examined the use of a strategy, collaborative reading, where children in pairs or groups discuss and negotiate ideas and views about the text either at the end of reading, or while reading. Kiili found that this method had potential for supporting reading comprehension, as it provided a social context and opportunities for participants to have dialogue and collaboration regarding the text. However, it is important to note that Pressley (2006) argues that when teachers combine and balance approaches and methods, they can provide for more successful ways to teach reading to all children.

The practice of explicit teaching is not a new concept for teachers, being acknowledged over time as an effective approach to literacy teaching. The explicit instruction model (Archer & Hughes, 2011) promotes the importance of teacher explicit instruction within a balanced approach. Archer and Hughes (2011) argue that this model can empower teachers if their instruction is systematic, direct, engaging and success orientated. They claim it is an efficient and effective procedure to successfully instruct students through modelling, prompted or guided practice and unprompted practice. The explicit
instruction model provides learning experiences for students to discover content they could not otherwise learn (Archer & Hughes, 2011). A strength of this model is that it provides opportunities for students to gradually take responsibility for their learning, however it relies on the role of the teacher to transfer literacy skills to a group of students who as yet, do not have those skills.

Another approach supporting reading development for older readers is Close Reading (Fisher & Frey, 2012), an instructional routine that invites the reader to closely examine a text through repeated readings. Close Reading (Fisher & Frey, 2012) supports readers to critique the text’s structures, including the way the text is organised, the vocabulary that is used and its key ideas and inferential meanings. Fisher and Frey’s (2012) research focused on how Close Reading could be used with younger children to support early reading development. Their findings pointed to the role of the teacher, and their ability to modify the approach to cater for younger students’ cognitive and metacognitive development. They claim that Close Reading could be successfully used if teachers themselves had deep knowledge about the text’s purpose and features and were adept at choosing appropriate questions and using vocabulary to support their learners. Fisher and Frey (2012) highlight that Close Reading should accompany other noted reading pedagogies for example, shared reading, read-alouds, teacher modelling and think-alouds to support reading teaching.

John Hattie’s extensive and significant research supports teachers in that it has endeavored to determine the major influences on student achievement. Hattie’s (2012) Visible Learning approach argues that there needs to be a focus on student learning and not on their achievement, standards or their ability. He claims if learners learn they then will achieve. Visible Learning (Hattie, 2012) places emphasis on school leaders and teachers to know the impact they are having on student learning outcomes and promotes five key messages about Visible Learning. They are i) that all interventions are likely to work, ii) educators need to understand the power of moving towards what students know now to success criteria, iii) errors are the essence of learning and they are to be welcomed as opportunities by educators, iv) feedback to educators about their impact is essential and v) the need for passion about learning needs to be promoted to students through the language of learning. Hattie (2012) also identifies seven fundamental principles of learning, which he argues when applied to teaching practices, in particular the teaching of reading, a powerful new narrative to teaching and learning will be created. These principles highlight the importance of assessment, deliberate instruction, classrooms as social spaces, feedback and identifying major learning strategies as
effective factors to improving pedagogies. These factors, Hattie (2012) claims need to be acknowledged by teachers and evidenced in pedagogies to positively influence student learning outcomes.

Reciprocal teaching (Palinscar, 1986; Palinscar & Brown, 1984) is a pedagogy more closely aligned with the principles of balancing explicit or direct instruction with facilitation and shared responsibilities between teacher and students. Westera and Moore (1995) observe, reciprocal teaching developed out of research related to monitoring and constructing meaning from text, and aligns closely to Vygotsky (1978) theories related to learning as a social practice. Palinscar and Brown’s (1984) description of reciprocal teaching views it as a cooperative learning strategy requiring collaboration and group thinking. It promotes a culture that values growth in learning through experimentation and enquiry, which aligns well with Vygotsky’s socio cultural theory. Reciprocal teaching facilitates a group effort between teacher and students and among students themselves to bring meaning to the texts by applying four specific reading strategies; questioning, clarifying, summarising, and predicting, which are used to support reading comprehension (Rosenshine & Meister, 1994). Westera and Moore (1995) argue that reciprocal teaching follows a dialectic process to enable metacognitive thinking and empowers participants to take ownership of their own learning in a systematic and purposeful way. They argue that discussions happen in reciprocal conversations to co-construct understandings of the text, and the participants learn thinking strategies for deeper levels of understanding at their own pace and with more able peers. Studies that support reciprocal teaching (Palinscar, 1986; Palinscar & Brown, 1984; Rosenshine & Meister, 1994) have found that it is an inclusive practice, and an effective teaching technique when used in the context of small-group collaborative investigation, and when a gradual transfer of responsibility from teacher to student occurs (Rosenshine & Meister, 1994). The reciprocal teaching model has influenced the development of another model, Internet Reciprocal Teaching which moves the same social practices for making meaning and sharing responsibilities for learning, into the online environment (Leu & Reinking, 2005-2008).

Pedagogies for literacy teaching supported by and focused on the use of technology have been characterised by frameworks that look to develop knowledge about the topic of focus as well as technology skills. Existing research acknowledges that inclusion of technology in pedagogy, like all teaching, is complex because of the ever changing nature of the environment (Shulman, 1986). Despite the complexity, research findings suggest that ongoing pedagogical support has been offered. For example, Shulman’s
The (1986) construct of Pedagogy, Content and Knowledge (PCK) has influenced the development of a framework called Technological Pedagogical and Content Knowledge (TPACK) (Mishra & Koehler, 2006). Like PCK, the TPACK framework aims to develop teacher knowledge to support technology integration into instruction. The TPACK framework acknowledges that content, pedagogy, technology, and learning and teaching contexts have roles to play in effective instruction, both individually and together. Mishra and Koehler (2006) claim that TPACK is the basis of effective teaching with technology, however it requires the simultaneous integration of all three concepts. This model has been used successfully across curriculums to develop students’ literacy skills. While the TPACK model is effective in providing a framework for teachers to effectively integrate technology into instruction, it does not directly account for providing opportunities to empower students through reciprocal conversations, collaborative group investigations and where a gradual release of responsibility from teacher to student occurs. Figure 2.3 shows the TPACK framework (Mishra & Koehler, 2006).

Figure 2.3: TPACK framework (Mishra & Koehler, 2006)
Another example of an approach that looks to authentically incorporate technology into instruction is the Substitution Augmentation Modification Redefinition (SAMR) model (Puente, 2016). The model’s four levels, Substitution, Augmentation, Modification, and Redefinition have been used to guide teachers in making technology integration into learning experiences more purposeful. These levels assist teachers to determine the impact of the integration of technology, to either enhance or transform the learning experience. For example, a traditional learning method such as using a pen to write, can be substituted for a new learning style using technology such as completing a group project using global videoconferencing and a virtual classroom. Like the TPACK framework (Mishra & Koehler, 2006) this model has also been successful in building teacher capacity to authentically integrate technology in learning and teaching activities. However, the model’s focus is to guide teachers to enhance learning activities by integrating technology and not necessarily on creating collaborative environments in which student’s collectively solve problems and develop critical thinking, even though this may occur.

A more recent study (Joint Research Centre [JRC], 2017) has drawn on other noted international frameworks, assessment tools and training programs to develop a framework, the European Framework for the Digital Competence of Educators (DigCompEdu). The DigCompEdu framework was established to support the development of educators’ digital competence. The framework describes the aspects of digital competence for educators to enable them to determine their own professional development needs, and identifies six stages of development: professional engagement, digital resources, teaching and learning, assessment, empowering learners and facilitating learner’s digital competence (JRC, 2017). The framework aims to i) encourage innovation in education and training practices for educators, ii) improve access to life-long learning and iii) develop digital skills and competencies needed for employment, personal development and social inclusion (JRC, 2017). The framework also aims to support educators by providing a common language and approach for dialogue about best practice across borders, as well as a general reference frame for the development of other digital competence models.

It is worth considering these examples of different approaches, frameworks and pedagogies in light of their merits to develop digital literacy and online reading as a social practice and to advance learning in this new digital age. Deepening teachers’ understandings of socially and digitally constructed reading practices will support them to develop pedagogical practices for successful online reading proficiency (Kiili, 2012).
Internet Reciprocal Teaching - one pedagogical approach

Internet Reciprocal Teaching (IRT) (Leu & Reinking, 2005-2008) extends the principles of the print-based reciprocal teaching method (Palinscar, 1986; Palinscar & Brown, 1984) by providing a process for developing online reading comprehension strategies that are deemed most effective for reading online texts. These include the skills of questioning, locating, critically evaluating, synthesising, and communicating (Leu, 2007). The purpose of IRT (Leu & Reinking, 2005-2008) is to develop students’ meaning and knowledge construction patterns in a collaborative reading situation, and where online information is sought and different viewpoints about controversial issues are explored (Kiili, 2012). IRT (Leu & Reinking, 2005-2008) has three phases; phase one teaches basic tool use through teacher-led instruction, phase two features collaborative problem solving by students while modeling online research and comprehension strategies, and phase three uses these skills in project inquiries, usually with students in other parts of the world. In the IRT (Leu & Reinking, 2005-2008) model, the gradual release of responsibility to students is accomplished through the implementation of these three phases of instruction. This is an approach which Castek, Henry, Coiro, Leu, & Hartman (2015, p. 330) argue aims to “increase academic engagement, encourage active reading, and promote students as experts in online research and comprehension”. Coiro and Hobbs (2016, p. 9) claim that when “everyone has the potential to teach everyone, a genuine sense of empowerment results”. Figure 2.4 shows a side-by-side comparison of the features of the reciprocal teaching and IRT models (Castek et al., 2015).
The IRT (Leu & Reinking, 2005-2008) model has brought a number of benefits to teaching online reading and comprehension skills and strategies associated with new literacies. Leu et al. (2015a, p. 425) explain that this pedagogical strategy provides a special opportunity to “help the last become the first”. This is accomplished by placing students who struggle with literacy at the center of the literacy and learning classroom, and celebrating the skills they have acquired that others may not yet possess. Teaching these students new literacies empowers them and enables them to become literate with new technologies and strategies, thus enabling them to then teach their peers. Leu and Reinking’s (2005-2008) study used the IRT principles to guide a successful intervention for online reading comprehension skill development with adolescents in an American educational setting. Leu et al. (2015b, p. 358) describe the IRT model as a “rich instructional model” that integrates online research and comprehension into disciplinary learning for older readers. Leu et al. (2015b) suggest that this model could be used for younger readers, however the pool of information on websites would need to be narrowed and websites would need to be selected to include reading supports such as images, videos, interactive features and tools that read text aloud, making the site more accessible to younger readers.

This inquiry will adopt the principles of Internet Reciprocal Teaching (Leu & Reinking,
2005-2008) to form the basis of the intervention used in this inquiry to examine online reading for young children.

Chapter conclusion

The number of studies that examine the reading demands of online texts for young readers, or the pedagogies that support online reading development, is increasing. As argued, online reading requires a different set of skills beyond those required for print-based reading. Early years are critical to literacy development and there is clearly a need to further understand the reading skills and strategies required by young children in the online environment. This means that contemporary educational research faces an important challenge, that is how to identify the skills and strategies young children require to be effective readers of both offline and online texts and how best to teach these skills. Attention must now be turned to new literacies that are emerging, and how best to teach young children these new literacies in ways that promote technology use, while being developmentally appropriate, equitable, and integrated into the regular literacy learning environment (Leu et al., 2009). It is essential that teachers understand online reading demands and engage in effective pedagogical practices to develop online reading proficiency in young readers at the early stages when these skills are being formed.
Chapter 3: METHODOLOGY
Chapter 3

METHODOLOGY

Chapter introduction

This chapter presents the methodology used in this inquiry to explore the online reading demands for young children when engaging with online texts. It begins by outlining the research questions and research design and explains why they were considered to be the most appropriate ones for this inquiry. The locus of the inquiry is then presented and adult and child participants are introduced. The phases of the research design are then described, including the methods of data collection and data analysis and the steps taken to ensure the trustworthiness of the findings. The chapter concludes with information regarding the parameters of the inquiry and ethical considerations.

Research questions

The purpose of this qualitative case study was to explore the reading demands of online texts for emergent readers when reading in the online environment. Thirteen emergent readers (the youngest was 5 years and 10 months old and the oldest was 6 years and 7 months old when the inquiry was conducted) participated in the first phase of this inquiry, where their print-based and online reading skills and strategies were assessed to inform the second phase of the inquiry. The second phase explored how the model, Internet Reciprocal Teaching (Leu & Reinking, 2005-2008) could support these emergent readers to first acquire and then share these skills and strategies with their peers. The inquiry was guided by the following research questions:

- What do teachers need to know about the online reading demands for young children who are emergent readers?
- What is the role of Internet Reciprocal Teaching in developing young children’s online reading skills and strategies?
- How can teachers support young children to develop online reading skills and strategies?

Research Design

This inquiry adopted a qualitative paradigm and used a collective case study...
methodology (Creswell, 2003; Yin, 2009). Guided by ethnographic principles, the inquiry used various methods to collect and analyse data. Figure 3.1 provides an overview of the qualitative research methodology.

![Research methodology](image)

**Figure 3.1: Research methodology of the inquiry**

**Qualitative research**

Qualitative methods are exploratory and descriptive. They enable the researcher to closely examine a topic to gain an understanding of the phenomena under investigation (Creswell, 2003; Denzin & Lincoln, 2000). Qualitative researchers aim to understand the participants’ worlds and the meanings they give to their situations by considering their actions, contexts and perspectives (Mertens, 1998). A qualitative paradigm was used to support the investigation of a specific phenomenon and to appropriately respond to the questions in this inquiry. The research design recognised the need to align the design to the purpose of the inquiry (Creswell, 2003). The qualitative design allowed the researcher to investigate the reading demands of online texts by observing young children while they were in a specific learning environment using the Internet Reciprocal Teaching model (IRT) (Leu & Reinking, 2005-2008). The following characteristics are critical to qualitative designs and to this inquiry.
**Researcher as key instrument for data collection**

In qualitative research, the researcher is viewed as the key instrument of data collection (Merriam, 1998) as they engage directly with participants and observe them in their natural environments. A qualitative paradigm allows the researcher to sensitively respond to the research questions by gathering descriptive accounts from the perspectives of participants within a chosen context (Merriam, 1998). In this inquiry, the researcher engaged directly with the child participants and observed them in situ. This allowed the researcher to gain insights into the ways the young children created meaning out of their experiences as they engaged with an online text using a specific instructional model, Internet Reciprocal Teaching (Leu & Reinking, 2005-2008).

**Data collection within natural environments**

In qualitative research, the researcher often collects data in the field at the site where the phenomena being studied takes place. The researcher gathers information by observing and talking to the participants as they behave and act within their environment (Creswell, 2013). The researcher obtains a deep understanding by observing the participants in their natural environments (Merriam, 1998). In this inquiry the researcher observed the children in their classroom setting, as they participated in literacy activities during their daily literacy sessions.

**Multiple methods**

In qualitative research, the researcher gathers data from multiple sources such as interviews, observations and documents, rather than a single data source (Creswell, 2013). In this inquiry, the researcher collected data through document analysis, interviews, observations and work samples.

**Emergent design**

In qualitative research, the research process is emergent (Merriam, 1998). This means that the initial plan for the research process may change or shift after the researcher enters the field and begins to collect data. In this inquiry, the researcher made decisions throughout phase two to collect further data. This decision was to ensure adequate information was being gathered in order to learn about the problem and to ensure that the best possible means of gathering data were used (Creswell, 2013).

**Reflexivity**

In qualitative research, the researcher conveys to the reader information about the
researcher’s background (work and cultural experience and history) to explain how this may inform their interpretations of the data and to reveal what they may have to gain from the research (Wolcott, 2010). In this inquiry, the researcher included background information in Chapter One.

**Collective case study**

Case studies have played a very important role in qualitative research in educational settings (Merriam, 1998). By using a case study design, the researcher aimed to gain an in-depth understanding of the phenomenon being explored in real life contexts and from the perspectives of the participants (Yin, 2009). Creswell (2013, p. 97) defines case study research as “a qualitative approach in which the investigator explores a bounded system (a *case*) or multiple bounded systems (*cases*) over time”. A case is deemed bounded when the study requires a limit in terms of the number of participants involved, the scope of the setting, or the timeframe for observations or interviews (Stake, 1995).

Collective case study research is the study of a number of cases in order to inquire into a particular phenomenon (Stake, 1995). According to Yin (2009) the design for the collective case study should replicate the design used for the individual cases. When examining several cases together, the researcher can explore the similarities and differences between the cases through describing, understanding and explaining the research problem or situation. This makes the conclusions more robust and powerful (Yin, 2009) and increases their trustworthiness (Guba & Lincoln, 1989). Researchers (Simons, 1980; Stake, 1995; Yin, 2009) have suggested six techniques for organising and conducting case study research successfully:

- **Determine and define research questions**: The researcher establishes a focus and formulates questions about the situation or problem to be studied and determines the purpose of the research.
- **Select the cases and determine data gathering and analysis techniques**: The researcher identifies single or multiple real-life cases to examine in depth and decides what data gathering approaches are appropriate.
- **Prepare to collect the data**: Because case study research generates a large amount of data from multiple sources, a systematic organisation of the data is essential to ensure the researcher remains focused on the original purpose of the study and the research questions.
- **Collect data in the field**: The researcher must collect and store data from
multiple sources systematically so it is readily available for subsequent reinterpretation.

- **Evaluate and analyse the data**: Throughout the analysis process the researcher must remain open to new opportunities and insights; the multiple sources of data available from the case study method provide researchers with opportunities to use triangulation to strengthen the research findings and conclusions.
- **Prepare the report**: Exemplary case studies report the data in ways that transform a complex issue into one that can be understood, allowing the reader to examine the study and reach an understanding independently of the researcher.

Guided by these techniques for case study research, a collective case study method of investigation was used for this inquiry to respond to the research focus and the research questions. Creswell (2013, p. 101) suggests that qualitative researchers typically choose “four or five cases”. This inquiry reports four cases. Each case reports on the ways a single case study child participated in the Internet Reciprocal Teaching intervention, which included leading an online reading experience for three or four of their peers. The parents/carers of 13 children gave consent for their participation in this inquiry (Appendix D). Four of these children are reported as cases, and the remaining nine participated in the child led online reading experiences. All 13 children had opportunity to participate in the literacy learning experiences for reading online.

Each case was analysed as an individual case and then the four cases were examined together as a collective case using deductive and inductive processes to analyse the data and then cross-case analysis to strengthen the findings (Stake, 1995). By exploring similar cases it was possible to obtain a deeper understanding of the case findings, adding confidence and stability to the findings (Mills & Huberman, 1994).

**Ethnographic principles**

In this inquiry the researcher engaged directly with participants and observed them in situ. Applying ethnographic principles enabled the researcher to gain insights into the ways the young children made sense of their experiences in an educational context (Creswell, 2003; Yin, 2009). This inquiry was conducted in the child participants’ natural environment, the classroom, with data collected while the participants engaged in learning experiences. This inquiry used the following ethnographic actions to analyse
the data: understanding and interpreting multiple realities, fieldwork, reciprocity and empathy, multiple data procedures and emic and etic perspectives (Creswell, 2003). Each of these is now described and then connected to the inquiry.

*Understanding and interpreting multiple realities*

Ethnography involves the study of the social behaviours of a particular group (Wolcott, 2008). The researcher looks for patterns in the group’s ideas and beliefs expressed through language and behaviour (Creswell, 2013). Considering and interpreting these patterns, supports the process of understanding the participants’ realities as they interact in a particular setting (Brewer, 2000).

In this inquiry, the researcher used a variety of data sources to provide an extensive description of the cases and their contexts. This enabled the researcher to explore the perceptions of young children and to gain an understanding of their ideas and beliefs as they interacted with each other whilst they engaged with an online text.

*Fieldwork*

Fieldwork involves the gathering of information in the context or setting where the individual or group that is the focus of the study works or lives (Wolcott, 2010). Engaging in fieldwork allows the researcher to gain insights into the participant’s learning and the characteristics of the setting (Wolcott, 2010). Looking for the shared values and behaviour patterns of a group involves the researcher engaging in extensive fieldwork and collecting data from diverse sources (Fetterman, 2010).

Undertaking fieldwork in this inquiry allowed the researcher to gain an understanding of the children’s classroom context. The researcher observed the selected research site before working with the child participants, spending extended periods of time with them during the inquiry, which allowed trustful relationships to build. Whilst observing young children as they interacted and collaborated with each other in a particular educational context (using the Internet Reciprocal Teaching model) in phase two, the researcher gained insights into how this experience supported their learning about online reading.

*Reciprocity and empathy*

Fieldwork requires the researcher to respect participants and the research site as they collect data from multiple sources (Creswell, 2013). The researcher must be sensitive to
any issues that may occur in the field that reflect on the relationship between the researcher and the participants (Hammersley & Atkinson, 1995).

The interpretive nature of this inquiry required the researcher to be attentive to the feelings of the two teachers and the child participants. The researcher needed to be empathetic and engage in dialogue and collaboration with them (Mills & Morton, 2013). The researcher was mindful of building trustful and honest relationships, as this inquiry required the researcher to engage with the teachers and the young children in a classroom setting. When working alongside the young children as participants, the researcher endeavoured to create relaxed environments that supported them while promoting positive exchanges i) between the researcher and the young children and ii) between the four case study children and their peers. The researcher also regularly met with the two teachers to debrief and to keep them informed of what was happening.

*Multiple data collection procedures*

Checking information that has been collected from different sources or methods for consistency is described as triangulation (Mertens, 1998). This process involves validating evidence from different sources to further understand a theme or perspective (Lincoln & Guba, 1985; Patton, 2002).

In this inquiry a variety of data sources were used, compared and analysed to support triangulation and to strengthen the interpretations and conclusions of the inquiry. Data collection methods are described in more detail in the section titled, Data Collection Methods.

*Emic and epic perspectives*

The aim of ethnography is to understand the culture of a group from an emic (insider) and an etic (outsider) perspective, providing information about the beliefs, ideas and behaviours of particular people (Mertens, 1998). In this inquiry, the researcher built a relationship with the classroom teachers to gain an etic (outsider) perspective through classroom observations and teacher interviews. This gave the researcher an understanding of the teachers’ beliefs and what they valued about literacy learning and the use of technology to support learning in the classroom setting. Through child participant interviews, observations, assessments and work samples the researcher gained an emic (insider) perspective The approach adopted involved valuing the children as full participants in their setting, and giving voice and perspective to their
ideas and behaviours. The researcher gained an in-depth understanding of the children’s perspectives about the demands of online reading during the two phases of the research design.

**Locus of the Inquiry**

*Location*

The research site for this inquiry was a non-government primary school on the South Coast of New South Wales, Australia. The school belonged to a system of 29 primary and seven secondary schools. At the time of the inquiry, the system’s Strategic Direction (2013-2017) had prioritised Literacy and Information and Communication Technology (ICT) as key focus areas in the system’s continuous improvement plan.

The site selection was important because of the inquiry’s focus on the demands of online reading. The school was selected because it had prioritised Literacy and ICT, which aligned with the system’s strategy. The school had also committed over thirty thousand dollars for ICT resources in its 2015 school budget. At the time of the inquiry, the school was two streamed; it had two classes for every year from Kindergarten to Year Six, with 354 students across 14 classes. The school had a total of 29 staff, which included a non-teaching principal and assistant principal, 20 teachers (including specialist teachers for Reading Recovery, Library, Music, Technology, Indonesian and Physical Education), two administration staff, an Aboriginal Education Assistant, three school support officers and a canteen manager. The school’s daily operating hours were between 8.30 am and 2.50 pm. The system within which the school was located mandates a two-hour daily session allocated to literacy instruction. This research occurred during this time.

Figure 3.2 is a map of the school’s layout. The dark orange areas indicate the two Year One classrooms, the verandah and the COLA spaces that were used in this inquiry.
The outdoor space for the school’s student population had a large permanent play equipment facility, three basketball courts, a grass area and a passive play area under a large Covered Outdoor Learning Area (COLA) for games such as chess and draughts. The COLA had an outside stage, which was used for school assemblies and performances. The school did not have a school hall and this was problematic for whole-of-school sharing, particularly for plays, musical productions and Book Week celebrations. The Year One teachers used the engine room, verandah and COLA in their daily learning experiences, and therefore these were familiar spaces to the children and were utilised in this inquiry.

All classrooms had been updated. The facilities included new furniture, an engine room (a space where teachers conduct small group and individual instruction), a class Library and a technology space with two desktop computers and six iPads. A Reading Recovery space was located near the Year One classrooms for easy access for teachers and students. To support the school’s improvement agenda regarding developing students’ digital literacy skills, ICT was a focus in weekly library lessons from Kindergarten to Year Six. The students visited a well-resourced school library each week where digital and print-based texts were both available for borrowing. Even though digital texts were available for student and teacher borrowing, both Year One teachers reported that only
print-based texts were selected for guided reading instruction and borrowed by the Year One students. Figure 3.3 shows the physical layout of the Year One E (Mrs Evan) classroom. Year One N (Mrs Nau) classroom had the same layout as Year One E classroom.

![Classroom Layout Diagram](image)

**Figure 3.3 Year One classroom layout**

**Participants**

All participants in this inquiry were identified and approached only after ethical approval from the University of Wollongong Human Research Ethics Committee (HE14/258) and from the system in which the school was located (Appendices A & B).

**Recruitment of the teacher participants**

At the time of the inquiry the school had 56 students enrolled in Year One. They were in two classes, Year One E and Year One N (pseudonyms), each with 28 students. After consultation and approval from the Principal to conduct the research (Appendix C), purposeful sampling (Patton, 2002) was used to select the teacher participants. The Principal selected both the Year One E and N teachers, as one teacher was the school’s Leader of Literacy and had an interest in the teaching of digital literacies, and the other had extensive experience in early-year classes.
The Year One teachers, Mrs Evan and Mrs Nau (pseudonyms), were approached and given information regarding the purpose, aims and timeframe, and their roles in the inquiry. Both teachers gave written informed consent for participation (Appendix D). Even though the child participants were selected from across both year one classes, the engine room in Mrs Evan’s classroom was used for teaching purposes, with the verandah and COLA also being used as spaces in the inquiry. Subsequent to the inquiry, all findings were made available to both teachers.

Recruitment of child participants
Leu and Reinking (2005-2008) recommend Internet Reciprocal Teaching (IRT) as a pedagogical strategy for empowering less successful students by positioning them as experts who can teach their peers. Taking up this recommendation, purposeful sampling (Patton, 2002) was used to identify child participants requiring additional support.

Thirteen children were initially identified by the Year One teachers, Mrs Evan and Mrs Nau as possible participants. They used current classroom assessment data, Clay’s (1979) Running Record assessment, which determined the children’s reading levels using basal readers (Appendix R). The data identified these 13 children as the least competent text readers across both the Year One classes, and they were therefore considered suitable candidates for being skilled up and repositioned as reading experts among their peers.

Parent/carer information was distributed to the 13 child participants, and 13 parents/carers gave written informed consent for their children to participate in this inquiry (Appendix D).

In phase one of the research design the researcher administered two assessments, Clay’s (1979) Concepts About Print (CAP), and the Online Reading Assessment (ORA) (Kervin & Mantei, 2015) to the 13 child participants. The CAP assessment has a total of 24 items for children to respond to while interacting with a print-based text. There are 27 scored items children are required to attend to while interacting with the ORA webpage. The CAP has been discussed in Chapter 2. As the ORA is not a well-known or widely used tool, a more detailed description is provided at the end of this section.

Each of the 13 children also participated in a semi-structured interview (Appendix H) to
gather information regarding their attitudes towards technology and their technology access and use at home and at school.

Recruitment of primary participants
From among the 13 participants, four children were recruited to become the primary participants who engaged in the intervention using the Internet Reciprocal Teaching model (IRT) (Leu & Reinking, 2005-2008). The 13 child participants’ assessment data, combined with information shared in the semi-structured interviews, informed the selection of the four primary or case study participants.

The four primary participants were children with low scores on the CAP and ORA assessments who indicated during the semi structured interviews that they had limited access to technology in the home environment. In consultation with Mrs Evan and Mrs Nau, Nathan, Yasmin, Kurt and Ella (pseudonyms) were selected as the primary participants. They are referred to throughout the inquiry as the four case study children. The remaining nine children became their learners as part of the IRT experience (Leu & Reinking, 2005-2008). The selection of these four case study children was consistent with the methodology of this inquiry in which the IRT model was used as a pedagogical strategy to empower the less successful students and skill them up to teach their peers (Coiro, 2007; Leu & Reinking, 2005-2008). Mrs Evan and Mrs Nau, using their knowledge of the children’s interests and friendships allocated the remaining nine children to work in one of the case study children’s group. The four case study children and their learning groups became the collective case study. Table 3.1 provides an overview of each case study child’s group participants.

Table 3.1 Overview of case study child’s group participants

<table>
<thead>
<tr>
<th>Case study child</th>
<th>Group participants (pseudonyms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nathan</td>
<td>Yasmin</td>
</tr>
<tr>
<td></td>
<td>Kurt</td>
</tr>
<tr>
<td></td>
<td>Ella</td>
</tr>
<tr>
<td>Yasmin</td>
<td>Nicole</td>
</tr>
<tr>
<td></td>
<td>Rebecca</td>
</tr>
<tr>
<td></td>
<td>Tayla</td>
</tr>
<tr>
<td></td>
<td>Nathan</td>
</tr>
<tr>
<td>Kurt</td>
<td>Katie</td>
</tr>
<tr>
<td></td>
<td>Ben</td>
</tr>
<tr>
<td></td>
<td>Tim</td>
</tr>
<tr>
<td>Ella</td>
<td>Matthew</td>
</tr>
<tr>
<td></td>
<td>Jamie</td>
</tr>
<tr>
<td></td>
<td>Ann</td>
</tr>
</tbody>
</table>
An overview of the 13 child participants’ data collected in phase one of the research is presented in Table 3.2. They are listed in order of their ages in years and months. The four case study children have been identified by an asterisk (*) and their names are written bold.

Table 3.2 Overview of child participant phase one data

<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Age (Years &amp; months)</th>
<th>Reading Level</th>
<th>CAP Score /24</th>
<th>ORA (Number of ORA items successfully attended to)</th>
<th>Summary of information shared at semi-structured interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Kurt</td>
<td>5.10</td>
<td>9</td>
<td>12</td>
<td>10</td>
<td>Kurt reported that his family had an iPad and a computer at home but he was not allowed to use these devices. His favourite game at school was the ‘Frog’ game where you “drag numbers and make the frog jump” (SI_10).</td>
</tr>
<tr>
<td>Matthew</td>
<td>5.11</td>
<td>3</td>
<td>14</td>
<td>13</td>
<td>Matthew reported that both his parents had computers at home and he owned his own iPad. He enjoyed playing games on his iPad and his favourite game was “Minecraft because you can build stuff” (SI_1).</td>
</tr>
<tr>
<td>Katie</td>
<td>6.2</td>
<td>9</td>
<td>16</td>
<td>14</td>
<td>Katie reported she had no access to the family computer but enjoyed using the school iPad to play spelling and maths games.</td>
</tr>
<tr>
<td>* Nathan</td>
<td>6.3</td>
<td>5</td>
<td>11</td>
<td>10</td>
<td>Nathan reported that he didn’t have access to technology at home but he enjoyed playing with the iPad at school with his favourite game being the ‘Frog’ game.</td>
</tr>
<tr>
<td>Rebecca</td>
<td>6.3</td>
<td>8</td>
<td>20</td>
<td>16</td>
<td>Rebecca reported that she had access to her family computer and had her own iPad that she used “for looking up school stuff and for homework and playing games like ‘Tom Cat’ and ‘Subway Surf’” (SI_6). Her favourite game was ‘Tom Cat’ because, “it copies things that you say” and ‘Dog with a Blog’ because “it has a Disney clown in it” (SI_6).</td>
</tr>
</tbody>
</table>
| Ben       | 6.4                   | 8             | 18            | 15                                                | Ben reported that his family had an “iPad and an iPod but not a computer at home” (SI_5). He used the iPad “all the time at
Jamie reported that he had access to the family computer but it was “only a little one” (SI_2). He was allowed to use the computer in the afternoons and on the weekend. When he was using a device he enjoyed spelling and maths games and his favourite game was ‘Tiger’ because “it’s a spelling game” (SI_2).

Tayla reported that she had access to the family computer and she owned an iPad, which she played “during the week at anytime but not on the weekends” (SI_7). She enjoyed playing games and her favourite thing was “playing everything” (SI_7).

Nicole reported that she had access to the family computers and had her own iPad at home, which she used after school and on the weekend. She stated she played lots of games and her favourite games were called “Subway Surface, Press Boy and Police” (SI_4).

Ella reported that she had access to the family computer and she owned her own iPad as did her older sister and younger brother. She was sometimes allowed to play on her iPad “before school, but mostly just on the weekend” (SI_12). She used her iPad to “write things like poems” and “play games like the ‘Monster’ game” (SI_12).

Ann reported she had access to an iPad but not a computer at home. She had permission to play the iPad every morning before school and her favourite thing was “playing games especially the ‘Ghost’ game” (SI_8).

Yasmin reported her family owned a computer but she “can’t use this” (SI_11). However, she liked to play ‘Doodle Buddy’ on the iPad at school in literacy groups.
Timothy reported he had access to the family computer and iPad and used the iPad to play games. He was allowed to play with the iPad in the afternoon and before bedtime.

**Online Reading Assessment tool**

Kervin and Mantei’s (2015) Online Reading Assessment (ORA) tool was used in this inquiry as it was a formative assessment that enabled the researcher to investigate the skills and strategies emergent readers control as they navigate and make sense of online texts. These were fundamental print skills, reading pathways, multimodalities within text and computer literacies. The evidence from observation and actual performance of the child participants with the ORA webpage gave the researcher data (ORA_1-13) to select the case study children. It also guided the explicit planning of lessons in the intervention phase, and provided evidence for the researcher to select a suitable digital text (ABCKids) to support the learning activities in the intervention. It also allowed the researcher to provide effective feedback to the children that was specific to each child participant’s individual needs. The ORA script and scoring sheet is provided in Appendix O, and a description of the ORA follows below.

The ORA tool is designed to provide insights into the reading practices of an emergent reader when reading online. Like Clay’s (1979) Concepts About Print (CAP) assessment, its purpose is to help teachers to understand what young children attend to (or don’t) when reading in the online environment. The tool, through a series of webpages (written as blog entries) contains images, sound and movement for the reader to navigate. Distractors on the screen are also included in the form of unrelated images, advertisements and background patterns. Using the ORA pages and an accompanying script with a scoring sheet, teachers can record the knowledge readers demonstrate about online text features, and the structure and directionality of the text in the online environment. The information gained from the ORA can reveal much about emergent reader’s knowledge of the online context, and it can inform teacher’s decisions about future learning experiences (Kervin & Mantei, 2016).

The ORA tool includes six key areas for assessing a reader’s understanding about how online text work: text features, orientation to the text, structural concepts, directionality, letters, words and punctuation, and reader as author (Kervin & Mantei, 2015). The ORA uses a narrative structure to recount children’s familiar events (school, park, zoo)
in the form of blog entries, and uses inclusive, developmentally appropriate language deemed suitable for young children. Through a series of questions (teacher’s script) the reader is asked to identify features they notice on the webpage, and those that are their favourite part. This, Kervin and Mantei (2016) report provides information about what a reader first attends to as they view the webpage. The reader’s initial responses gives insights into what might immediately attract their attention and can reveal distinctive pathways for noticing items.

The ORA includes multimodal features that are typical on websites. The reader is asked about the ways sound, movement and colour are used and the purposes of navigational tools such as the URL, back arrow and menu. Questions related to these features provide information about the reader’s understanding of the multimodalities within online texts, and their combined use of reading skills and strategies that allow access to the text (Kervin & Mantei, 2016). Figure 3.4 is an example of some of the features on the ORA webpage.

![Figure 3.4: ORA webpage example (Kervin & Mantei, 2015)](image-url)
The ORA also includes linear and non-linear text components. Menus are organised both horizontally and vertically, and include hyperlinks that are activated as the reader users the curser to move across the screen. Kervin and Mantei (2016) report that these movements are scripted, so the teacher can see what navigational skills the reader controls in the online environment. The reader is also asked how to access parts of the texts that are not immediately visible on the screen, and to scroll through the webpage. These questions, Kervin and Mantei (2016) suggest help to understand the reader’s knowledge of simple mechanics to move between the webpage to access the text. Scripted questions about letters, words and punctuation require the reader to use the highlighting function or the curser to point to items, and this gives insights into the reader’s fine-motor skills to work the technology.

At the end of the ORA, the reader is invited to respond, either with a post comment or the creation of a new blog to one of the topics from the vertical menu. Kervin and Mantei (2016) claim that central to literacy experiences in online environments is the ability to respond to a text’s author. The opportunity to contribute through blogging, offers the child a chance to be part of the online community (Kervin & Mantei, 2016). Figure 3.5 is an example of how directionality is represented in the ORA.

Figure 3.5: ORA directionality example (Kervin & Mantei, 2015)
Research Design Sequence

Figure 3.6 provides an overview of the research design sequence of the inquiry. The research design had two distinct phases for data collection. Data collection methods included document analysis, observations, interviews, and analysis of student work samples. The data collection methodology and the two phases of the research design are explained in the next section of this chapter. Analysed data from the two phases were used to inform the discussion in the final chapter.

![Figure 3.6 Research design sequence of the inquiry](image)

**Phase One - Audit of the learning environment and the children’s learning**

In phase one, data collection focused on developing insights into the 13 participants as literacy learners and their experiences with digital technology. The Year One teachers, Mrs Evan and Mrs Nau participated in individual semi-structured interviews, contributing their knowledge about the children as literacy learners and providing the researcher with an understanding of their values and beliefs about literacy learning and the role of technology in developing young children’s digital literacy skills. The teachers also described and discussed their English program with the researcher. The researcher conducted classroom observations to gain insights into the classroom context.
and the child participants as literacy learners. Each of the 13 children then participated in an individual semi-structured interview, allowing the researcher to gain insights into their values and beliefs about technology experiences in both the home and school setting. The CAP (Clay, 1979) and the ORA (Kervin & Mantei, 2015) were administered to the 13 participants and analysed. The analysis of phase one data informed the design of the intervention in phase two and the selection of the primary participants, the four case study children.

Phase two – the Internet Reciprocal Teaching model

During phase two, the four case study children worked with the researcher to develop their knowledge and understanding of the online environment. The researcher, guided by phase one data analysis, designed an intervention using the model Internet Reciprocal Teaching (IRT) (Leu & Reinking, 2005-2008) with the aim of increasing the four case study children’s understandings of the way digital games work, and to develop the skills required to successfully play the game. Phase one data analysis was used to select a suitable online text to support the identified learning needs of the child participants. Text selection for this inquiry is discussed in more detail in the section titled, The Intervention. The IRT-based steps for phase two of the research design were as follows:

• explicit instruction in online reading skills
• group work and reciprocal exchange by children with their peers
• sharing and reflecting with peers.

These IRT-based steps guided the design of the intervention, which is discussed in the next section of this chapter, and in more detail in Chapter 4.

The Intervention

Figure 3.7 presents a model of the IRT-based steps the researcher used in the intervention. Each step is described in more detail below.
### Internet Reciprocal Teaching

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Explicit instruction in online reading skills</td>
</tr>
<tr>
<td>2</td>
<td>Group work and reciprocal exchange by children with their peers</td>
</tr>
<tr>
<td>3</td>
<td>Sharing and reflecting with peers</td>
</tr>
</tbody>
</table>

Figure 3.7: Model of the IRT-based steps

**Step 1 - Explicit instruction in online reading skills**

In step 1, the four case study children were provided with explicit, whole group teaching in online reading skills and strategies to play a digital game. Using the website ABCKids (Australian Broadcasting Corporation [ABC], 2015) the researcher delivered four lessons (Appendix S) to the four case study children. These lessons involved the researcher explicitly demonstrating the strategies (predicting, questioning, clarifying, and summarising) while explaining and demonstrating the online reading demands of the digital games available in the ABCkids website. This involved instruction about the multimodal features of these texts and the technical skills and language to interact with them. Explicitly teaching (Archer & Hughes, 2011) the case study children these understandings and strategies skilled them as experts, enabling them to then teach these skills to their peers. The IRT (Leu & Reinking, 2005-2008) model used in this intervention provided the case study children with opportunities to support one another through discussions and co-learning, whilst applying strategies to develop the skills they needed to interact with the game. These opportunities are discussed in more detail in Chapter 5.

**Step 2 - Group work and reciprocal exchange by children with their peers**

In step 2, opportunities were provided for the reciprocal exchange of online reading skills and strategies between the case study children and their peers. In response, the case study children drew on their prior knowledge and understandings of the strategies and reading demands of the resource ABCKids website (developed during the explicit lessons) and exchanged this knowledge with their peers in a group learning experience.

To facilitate this learning experience the four case study children, with researcher guidance, selected a text (digital game) from the ABCKids website, planned and constructed the learning experience and then taught their group of three or four learners. These learning groups involved the nine secondary participants selected in this inquiry.
Data collection in this phase was through observations (field notes and audio-visual material), interviews and student work samples. These peer-led teaching experiences formed the four case studies in this inquiry and are explained in detail in Chapter 5.

Step 3 - Sharing and reflecting with peers
In step 3, IRT (Leu & Reinking, 2005-2008) model provided the four case study children and their groups of learners with group sharing opportunities. At the completion of each learning experience, the researcher conducted an individual semi-structured interview with each case study child and a focus group interview with each group, to obtain the participants perceptions about the experience, and how it supported their development of the knowledge, skills and strategies needed to engage with the digital game. This data is included in the case study descriptions presented in Chapter 5.

Internet Reciprocal Teaching
The researcher selected the IRT (Leu & Reinking, 2005-2008) model as the preferred instructional model to use in this inquiry as i) it complimented reciprocal teaching (Palinscar, 1986; Palinscar & Brown, 1984) which was used in this inquiry by both teachers in their teaching practice, ii) it supported the ‘explicit instruction’ pedagogical strategy (Archer & Hughes, 2011) which was evident in the teachers’ program and teaching practice, iii) it used a gradual release of responsibility process (Rosenshine & Meister, 1994) that was evidenced in the teachers’ guided reading practices and iv) it provided a collaborative and supportive learning environment for the young children to use technology authentically (Mishra & Koehler, 2006). Leu et al. (2015) reported that the IRT model had been successful with teaching online reading and comprehension skills and strategies associated with new literacies to adolescents, and claimed it was a successful instructional model to skill less proficient learners. This was of interest to this inquiry. However, there are very few studies with younger children that use the IRT model combined with online reading assessment. This inquiry uses both the IRT and online assessment data, and illustrates the connection between assessment and instruction when young learners interact with digital, multimodal texts. The IRT model also provided opportunities for empowering all students, which was of particular interest to this inquiry. Chapter 2 presents a detailed description of IRT.

Think aloud strategy
In this inquiry the researcher used the ‘think aloud’ strategy, as it is deemed an effective way to support learners to talk about their behaviours and practices (Coiro & Dobler,
This strategy was used by the researcher to model for students how skilled readers construct meaning from an online text. During the four explicit lessons, the researcher modelled this strategy to the child participants by talking about the rules of the game, describing how the modes interacted to make meaning, and the pathway choices they could make as they engaged with the digital game. The researcher discussed with each child their thinking and reading behaviours during these lessons and gave opportunities for participants to articulate their learning and to talk about the technology itself. The interview questions conducted in this inquiry also reflected the ‘think aloud’ strategy as the researcher asked children questions that required them to articulate their understandings of their selected digital game and their experiences during the intervention. In this inquiry the ‘think aloud’ strategy supported the researcher to learn more about cognitive processes that cannot be observed (Pressley, 2006).

Text selection
Informed by data (SI_1-13; ORA_1-13) in regards to the child participants’ existing practices and preferences with online environments, the researcher selected the resource ABCKids website (ABC, 2015) as i) it could be accessed on multiple devices, ii) its content was age appropriate for the children in the inquiry, iii) the layout and multimodal features (print, image, sound and movement) supported the teaching and learning of skills and strategies needed to engage with a digital game and iv) it was an online text which could support student’s learning needs, which were identified through ORA assessment data collected in phase one. Digital games was the only text choice offered to the children to teach to their peers, as data indicated that the 13 child participants were all familiar with digital games and interacted with them either at home or at school (CO_1-2; SI_1-13). This inquiry acknowledges that the digital games selected and used by the children were mostly image-based, and thus structured in a non-linear and image driven way. Figure 3.8 represents the home page of the website with examples of the modes, linguistic (written print), visual (images, colours font size) and spatial and gestural (the way the space is used on the screen and the movement of the wheel). There is no example of the aural mode (sounds or music) on the home page, however all modes are represented within the games in the website. Each digital game’s purpose, rules to play the game and its multimodal features is described in the case studies in Chapter 5.
Methods of data collection

Aligning with the usual activity of qualitative researchers and case study methodology, this inquiry used a number of methods to collect data (Creswell, 2003). These methods enabled the researcher to gain insights into the online reading knowledge, skills and strategies used by emergent readers and to learn about how these could develop through using the Internet Reciprocal Teaching (IRT) (Leu & Reinking, 2005-2008) model as a pedagogical strategy. Data sources for exploring the research questions were document analysis (CAP and ORA assessments and teachers’ English program), observations (field notes from classroom observations and audio visual recordings of IRT teaching experiences), interviews (focus group, semi-structured, unstructured) and work samples (children’s lesson plans, case study children’s self reflections). A complete audit trail of the data (Appendix E) details the data collected and the assigned codes that allowed data sources to be identified throughout the thesis. Table 3.3 provides an overview of data collected over the two phases of the inquiry, connecting data collection to the research questions.
Table 3.3: Overview of the inquiry’s data collection

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Phase One</th>
<th>Phase Two</th>
</tr>
</thead>
<tbody>
<tr>
<td>What do teachers need to know about the online reading demands for young children who are emergent readers?</td>
<td>Document analysis: CAP and ORA assessments administered to 13 child participants</td>
<td>Observation: Four case study children participated in explicit lessons</td>
</tr>
<tr>
<td></td>
<td>Interview: Teachers and 13 child participants (transcripts, audio/video recordings)</td>
<td>Interview: Four case study children’s reflections and feedback (transcripts, video recordings)</td>
</tr>
<tr>
<td></td>
<td>Document analysis: Teachers’ English program</td>
<td>Interview: 13 child participants’ self reflections and feedback (transcripts, video recordings)</td>
</tr>
<tr>
<td>What is the role of Internet Reciprocal Teaching in developing young children’s online reading skills and strategies?</td>
<td></td>
<td>Work samples: Case study children’s lesson plans and written self-reflections</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Observation: Case study children’s individual IRT group lessons (transcripts/audio/video recordings)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Observation: 13 child participants engage with online texts in IRT model</td>
</tr>
<tr>
<td>How can teachers support the development of young children’s online reading skills and strategies?</td>
<td>Observation: Classroom field notes</td>
<td>Observation: 13 child participants engage in learning experiences using IRT model</td>
</tr>
<tr>
<td></td>
<td>Interview: Teachers (transcripts, audio recordings)</td>
<td></td>
</tr>
</tbody>
</table>

Document analysis

Reviewing documents is an important and relevant part of data collection in case study research. It is used to corroborate data from observations and interviews (Yin, 2009).

Formative assessment

Formative assessments are tests that systematically measure how well students have mastered learning outcomes (ACARA, 2015). Wren (2001) suggests that assessment is an integral part of teaching and learning and assessment of reading should be grounded in classroom instruction. In phase one of the research, formal assessments were used in the recruitment of the child participants and to inform the design of the intervention.
To recruit the child participants Running Records (Clay, 1979) were used to select the 13 child participants. These were part of the teachers’ regular classroom assessment practice (Appendix R). Running Records provide an assessment of text reading and are taken as a child orally reads from a continuous text. Running Records need to be systematic and teachers use a common standard for recording, for describing what they observe and for calculating scores and for interpreting records.

In phase one of the research, the four case study children were selected from the 13 child participants. The researcher administered the assessments Concepts About Print (CAP) (Clay, 1979) and the Online Reading Assessment (ORA) (Kervin & Mantei, 2015) to the 13 child participants. The CAP assessment is designed to gather information about young children’s interactions with print-based text. The ORA assessment extends Clay’s (1979) CAP assessment for use in the online environment.

Teaching programs
The NSW Board of Studies English Syllabus for the Australian Curriculum (BOSTES, 2015) and related support materials guided the English planning and programming owned by the two, Year One teachers in this inquiry. Both teachers collaboratively planned their teaching program. A sample excerpt of their English program can be found in Appendix Q. In phase one of the research, the researcher collected and analysed the teachers’ program to understand how literacy expectations and practices were contextualised in the educational settings of the Year One classrooms, and how the program reflected implementation of the mandated NSW Board of Studies English Syllabus for the Australian Curriculum (BOSTES, 2015). A support document for the Australian Curriculum (ACARA, 2015) designed to identify suitable texts for developing young children’s reading, was also analysed alongside the teaching program.

Observations
In qualitative research, observation is vital for obtaining detailed knowledge of the contexts in which the participants operate. Observation allows the researcher to describe their own interpretations of what is happening and then check this understanding with participants (Creswell, 2013). In educational contexts, researchers need to become ‘insiders’ in the setting being observed in order to truly understand the participants’ practices. Gall, Gall, & Borg (2007, p. 277) describe the changing role of the observer as “varying along a continuum from complete observer, through observer-participant and participant-observer to complete participant”.

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During this inquiry, the researcher observed, interacted with, supported and learnt alongside the young children. In phase one of the research, the researcher as participant-observer conducted classroom observations in the mandatory daily two-hour literacy session, to see how the children interacted with the literacy activities in their classroom context. As a participant-observer the researcher observed and interacted closely with the children to establish a meaningful identity within the group (Gall et al., 2007). At times during these classroom observations the researcher became an active participant (Mertens, 1998) generally doing what the children were doing, but not blending in completely. This observation process was documented using field notes and audio recordings, alongside analysis of the teachers’ program. Triangulation of this data provided the researcher with a deep understanding of the children as literacy learners in the classroom context.

In phase two of the research, the researcher observed the case study children whilst they participated in the IRT-based steps of the intervention. This allowed the researcher to develop a rapport with the case study children (Gall et al., 2007) as the researcher interacted with the children to gather data.

During step 1 of the IRT intervention, the researcher delivered four explicit lessons (Appendix W) to the case study children. The researcher explicitly taught the strategies predicting, questioning, clarifying and summarising along with the skills and strategies to access, navigate and engage with the resource ABCKids website. This experience afforded the researcher opportunities to observe closely the children’s collaborations and conversations as they engaged with the website and digital games.

In step 2 of the IRT intervention, the researcher took on the role of a participant-observer (Gall et al., 2007) while the case study children were guided in the task of selecting a digital game, planning and documenting their learning experience to then teach their group of three or four learners. This process provided the children with opportunities to talk unreservedly about the actions they were engaged in and not be led by the researcher (Yin, 2009). The case study children then taught their lesson to their group of peers. As an outsider to the group the researcher’s role became a nonparticipant/observer as participant (Creswell, 2013) as she observed each case study child lead their group learning experience.

*Interviews*
Interviews involve direct interaction between the researcher and research participants providing rich insights into their experiences, thoughts and viewpoints (Gall et al., 2007). Qualitative research uses interviews in case study research to discover and describe multiple views of the case (Stake, 1995). In this inquiry the participants and the purpose of the interviews determined the types of interview conducted. The types of interviews used in this inquiry are described below.

Focus group interview
Focus group interviews are useful when the interactions between the interviewees are likely to create valuable discussion and when the participants may be less able to contribute information if they are interviewed individually (Creswell, 2003). This is especially true for young children whose social interactions and language skills may be slightly limited (Yin, 2009).

In phase two of the research, the case study children participated in a focus group interview after the researcher delivered four explicit lessons in step 1 of the IRT intervention. The purposes of the four explicit lessons were i) to provide a model and ii) to provide a stimulus for discussion as the case study children engaged with the website. During this interview, the researcher created an environment where the discussion was relaxed and enjoyable for the young children as they shared their ideas and perceptions (Creswell, 2013). These interactions allowed the researcher to collect data about the children’s feelings and beliefs, that they may not have expressed individually (Gall et al., 2007). Sample questions used in the focus group interviews to promote conversations and discussions are presented in Appendix I.

In step 3 of the IRT intervention, the researcher conducted a focus group interview with the three or four group participants. The purpose of these interviews was to seek their perspectives and reactions to the learning experience facilitated by the case study children. The interviews also canvassed their insights and perceptions regarding online reading. Appendix K is a sample transcript of a focus group interview with group participants.

Semi-structured interview
Semi-structured interviews involve the researcher asking some structured questions and then searching more intensely using open-form questions to gain further information from the interviewee (Gall et al., 2007).
In phase one of the research, the researcher conducted individual semi-structured interviews with Mrs Evan and Mrs Nau, the Year One teachers. The purpose of this interview was to gain insights into each teacher’s values and beliefs about literacy learning, their use of technology in teaching practice and to gain an understanding of the children as literacy learners. Appendix L is a transcript of a semi-structured interview with Mrs Evan.

At the completion of the intervention in phase two of the research, the researcher conducted individual semi-structured interviews with Mrs Evan and Mrs Nau. The purpose of this interview was to seek their insights and perceptions of the 13 children’s participation in the intervention and the children’s online reading practices. Appendix G is an example of the questions used in these interviews.

In phase one of the research, the researcher also conducted individual semi-structured interviews with the 13 child participants to gain an understanding of their attitudes towards technology use at home and school. Open-ended questions were used for all interviews and the use of a semi-structured approach provided opportunities for the researcher to probe further to obtain additional information from the teachers and the child participants. Appendix M is a sample transcript of a semi-structured initial interview with a child participant.

In phase two of the research, individual semi structured interviews were again conducted with the four case study children. The purpose of the children’s interviews was to seek insights and perceptions regarding their roles as leaders of a group in which they exchanged knowledge about the online reading demands of a digital game to a group of peers. Appendix N is a sample transcript of a semi-structured interview with a case study child.

**Unstructured interviews**

Unstructured interviews were conducted with the 13 child participants during phases one and two of the research. These interviews enabled the researcher to collect data while observing the child participants in their educational setting. Unstructured interviews occurred as ongoing informal conversations (Creswell, 2013) throughout classroom observations of the child participants in literacy sessions during phase one of the research, and during the IRT-based steps in the intervention in phase two. These interviews were documented as part of classroom observations in phase one, and in the
learning experiences’ transcripts during the intervention in phase two.

*Work samples*

In qualitative studies, the researcher produces observation field notes, fieldwork journals and interview transcripts whilst work sample documents are produced by the participants themselves (Yin, 2009). In phase two of the research, the case study children planned and documented a learning experience using two pro-formas provided by the researcher to guide their thinking about the teaching strategies and the sequence of their lesson. After the four case study children had taught their lesson, they completed a written self-reflection about the experience, including their attitudes towards facilitating the learning experience for their group of peers. These work samples are included in Chapter 5.

*Methods of data analysis*

The qualitative researcher engages in an ongoing and recursive process to identify patterns, themes and categories in the data (Lincoln & Guba, 1985; Stake, 2006). Throughout the phases of the research and data collection, the researcher interacted with the data and the data analysis to carefully identify and organise patterns, themes and categories (Creswell, 2013) related to the research questions and the theoretical frame of New Literacies.

This inquiry involved a three step process of data analysis: segmenting case study data into two extended literacy events, assessment and planning and teaching, deductively analysing data according to the theoretical frame New Literacies (Leu et al., 2013) and inductively analysing the data according to the emerging themes. By using this process, the patterns could be coded, initially based on knowledge of the theoretical frame, and then on the emerging patterns in the data (Merriam, 1998).

*Segmenting the data*

Researchers of social theories of literacy often use literacy events as the basic units of analysis of data (Barton & Hamilton, 1998). In this inquiry, data analysis involved identifying what data was significant to the research questions. This meant data could be segmented into themes that addressed specific aspects of the inquiry’s focus (Merriam, 1998). The phases of the research supported the decision to segment the data based on two extended literacy events, namely assessment, and planning and teaching as the
researcher required the emerging patterns and themes from the assessment event to guide the intervention in the planning and teaching segment. The researcher initially read the data from the assessment event in its entirety and inductively analysed the data according to the categorised codes. Once data collection was completed for both segments, the researcher read the individual case records in their entirety and coded according to their related category. Table 3.4 shows the categorising to segment case record data into the two literacy events, assessment and planning and teaching.

Table 3.4 Segmenting case record data into categories

<table>
<thead>
<tr>
<th>Segmenting category label</th>
<th>Category description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment</td>
<td>Data collected in this segment identified the teachers’ beliefs and practices about literacy and technology and the child participants’ offline and online reading knowledge through formal assessments. For example: • CAP and ORA assessments • Interviews (teachers, child participants) • Classroom observations • Document analysis (teachers’ program)</td>
</tr>
<tr>
<td>Planning and teaching</td>
<td>Data collected in this segment explored the online reading demands for young children while participating in the phases of IRT. For example: • Observations (explicit lessons by researcher) • Analysed selected online text (reading demands, modality) • Observations and work samples (planning teaching lesson) • Observations (teaching peers) • Interviews and work samples (reflecting and sharing)</td>
</tr>
</tbody>
</table>

*Deductive analysis*

Deductive analysis refers to analysis that utilises prior assumptions and theories to analyse data (Creswell, 2013). In this inquiry, the researcher used a process of deductive analysis to identify four category codes used for analysis, and which had emerged from the perspective of New Literacies (Leu et al., 2013). The four category codes identified for deductive analysis were SK (strategic knowledge), M (multimodality), SP (social practices) and TR (teacher role). Each acted as a guide that was applied as a means of categorising the data for subsequent inductive interpretation.

In the process of deductive analysis, codes were initially given to the data collection (interviews, observations, document analysis) in the assessment literacy event.
Transcripts from the teachers’ and child interviews, field notes from observations and child participant’s responses to the assessment scripts were coded against the four category codes. These emerging patterns and themes guided the design of the four explicit lessons delivered by the researcher to the case study children in phase two of the research. The researcher took these patterns and themes from the deductive analysis, “out to the field for the next wave of data collection” (Mertens, 1998, p. 351) in phase two of the research, the IRT-based steps in the intervention. Entire transcripts from each case study child’s planning and teaching experiences were then analysed using the four category codes. Through the analysis of the four codes, data could be examined to reveal more comprehensive understandings of the young children’s strategic knowledge, the reading demands of online texts and the roles and social practices enacted as the children exchanged learning within the IRT experience (Leu & Reinking, 2005-2008). During this process data were further reduced and essential understandings of the experiences emerged (Creswell, 2013).

**Strategic knowledge**
The analysis of strategic knowledge draws on theoretical work that argues technology is diverse and requires users to be skilled in using different strategies in different contexts in order to construct meaning out of what they are reading and creating (Coiro & Dobler, 2007; Leu et al., 2013).

**Multimodality**
New literacies theory categorises the multiplicity of new literacies into three categories: i) representation of meaning ii) multiple usage of tools and iii) multiple social practices (Leu et al., 2013). Unlike print-based mediums, online texts draw on multiple modalities such as text, image and audio in comparison to print-based mediums (Cope & Kalantzis, 2009). Proficient online readers must know how to use multiple tools to construct meaning, and how to upload their own contributions to the online environment (Leu et al., 2013). The array of social contexts where users share and encounter information have important implications for consumers, particularly in regards to the need to become more critically aware of the social and cultural influences that influence the construction of information found online (Henry, 2006; Leu et al., 2013).

**Social practices**
New literacies enable the construction, access and sharing of information in ways that are very different to those that have traditionally been possible, resulting in the
emergence of new social practices of literacy (Gee, 2007; Leu et al., 2013). Leu et al. (2013) claim that in the world of new literacies the construction of knowledge will be increasingly collaborative and learning experiences will be dependent on social interactions between students and teachers, and between students and their peers.

The teacher’s role
The central role a teacher plays is of critical importance in the new literacies classroom. Educators must be aware of evolving technologies, they must be capable of using and teaching the new literacies required of them, and they must be proficient at supporting the learning needs of students in the classroom when reading and creating online texts (Coiro & Hobbs, 2016; Leu et al., 2013). Figure 3.9 is a sample excerpt from a teacher interview that has been analysed deductively. It shows how transcripts were coded using the four deductive themes.

<table>
<thead>
<tr>
<th>Data Type</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>R Can you tell me about the way you have integrated iPads into the literacy program this year?</td>
<td>TR</td>
</tr>
<tr>
<td>E Yes, the children have access to iPads every day in the literacy session</td>
<td></td>
</tr>
<tr>
<td>R What have you found particularly effective?</td>
<td>SP</td>
</tr>
<tr>
<td>E The children are always engaged when they are using them</td>
<td></td>
</tr>
<tr>
<td>R What have you found challenging?</td>
<td></td>
</tr>
<tr>
<td>E When some of the children have difficulty with logging in...technical issues with the iPads...this interrupts my teaching as they are used as part of independent literacy activities in the session</td>
<td>SK</td>
</tr>
<tr>
<td>R How do the students in your class participate in online reading?</td>
<td></td>
</tr>
<tr>
<td>E Well...I use the Smartboard for whole class reading and the children use the iPads in literacy activities</td>
<td>TR</td>
</tr>
<tr>
<td>R What types of digital text have they read?</td>
<td></td>
</tr>
<tr>
<td>E A variety...I use information text and websites to engage students using the Smartboard</td>
<td>TR</td>
</tr>
<tr>
<td>R What specific digital literacy texts have they read?</td>
<td></td>
</tr>
<tr>
<td>E Mm...perhaps I really don’t read literary texts online to them</td>
<td></td>
</tr>
<tr>
<td>R How do they read the digital literacy text? i.e. independent, small group, whole class</td>
<td></td>
</tr>
<tr>
<td>E N/A</td>
<td></td>
</tr>
<tr>
<td>R What specific skills and strategies have you taught them about digital reading?</td>
<td>SK</td>
</tr>
<tr>
<td>E Well, I really do teach tradition skills and strategies very explicitly, but I really don’t explicitly teach skills for online reading...you have given me something to think about</td>
<td></td>
</tr>
<tr>
<td>R What have you noticed about the differences and similarities between print- based reading and online reading?</td>
<td></td>
</tr>
<tr>
<td>E Mm...children do have to use the skills and strategies for traditional reading when they are reading online...I need to think a little harder about this question</td>
<td>SK</td>
</tr>
<tr>
<td>R How does the current syllabus require students to use technology in stage 1?</td>
<td></td>
</tr>
<tr>
<td>E They have to know simple word processing skills and view digital texts</td>
<td>SK</td>
</tr>
</tbody>
</table>

Figure 3.9 Example of an excerpt of deductive analysis

**Inductive analysis**
Creswell (2013, p. 45) explains inductive analysis is a process where a researcher reads “back and forth” between the themes and the data to establish a comprehensive set of themes. Coding data should only be used as the initial stage of analysis, as it is
necessary to examine the relationships between the data more closely (Gall et al., 2007). In this inquiry, using inductive analysis framed by New Literacies theory (Leu et al., 2013) allowed the codes to be refined and grouped into categories related to understanding the online reading demands on emergent readers and their roles and social practices while engaging in a specific instructional model. The researcher re-read the coded data from the deductive analysis of all the transcripts of interviews, observations, documents and work samples for each case, in order to understand the emerging sub-themes and to expand on the deductive themes already identified. As with most coding and theme generating processes, an overlap of sub-themes was evident in the category codes (Gall et al., 2007). For example, ‘language’ was identified as a sub-theme across the four category codes, strategic knowledge (SK), multimodality (M), social practices (SP) and teacher role (TR) codes, while ‘hyperlinks’ was identified in both strategic knowledge (SK) and multimodality (M). Table 3.5 shows examples of sub-themes, which emerged from the inductive analysis.

Table 3.5 Inductive analysis

<table>
<thead>
<tr>
<th>Code</th>
<th>Sub-theme</th>
</tr>
</thead>
</table>
| **Strategic knowledge (SK)** | Skills: (tapping, swiping, scrolling)  
Navigation tools: (mouse, touch pad)  
Functions: (URL, browser, back/forward arrows, menu, highlighting tool, audio link, volume button)  
Visual icons: (sound, loading, movement)  
Reading pathways: (hyperlinks)  
Language |
| **Multimodality (M)** | Meaning  
Sound  
Movement  
Image  
Colour  
Text: (linear, non-linear)  
Hyperlinks  
Distractors: (advertisements)  
Interactive  
Language |
| **Social practices (SP)**    | Talking  
Sharing  
Demonstrating  
Collaborating  
Communicating: (using technology)  
Language |
| **Teacher role (TR)**      | Explicit instruction  
Demonstration  
Collaboration  
Co-learning  
Peer tutoring  
Language |

**Cross-case analysis**

This inquiry used a collective case study approach. Often, the reporting of collective or multiple cases is followed by a “cross-case” analysis aimed at identifying “generalisable
conclusions” applicable to other situations (Yin, 2009, p. 20). Therefore, a further analysis of the data was undertaken to determine the relationships between the sub-themes across the four cases. Findings from the data analysis are reported as multiple cases so that thick descriptions of each child’s engagement within the IRT model could be shared. These descriptions reveal the ways in which they interacted with the technology and the digital games, and how they taught their peers. Creswell (2013, p. 101) refers to this process as “within case” analysis. By methodically analysing the scripts of each case study child, commonalities and differences in the collected data were noted, checked and re-checked to identify links between the various parts of the data. This process was repeated many times to ensure congruence between the data and the emerging themes (Burns, 1995). In this way, the bounded system of individual parts became a whole (Stake, 1995).

It is important to note, however, that neither the drawing of comparisons between and among children, nor the achievement of generalisability, is the focus of this inquiry. Instead, the themes identified within the cases are used to develop understandings about the reading demands of online texts for young children and the ways they may be supported to develop skills and strategies to proficiently read online. Table 3.6 provides an example of the inductive analysis across the four case studies for the strategic knowledge (SK) previously shown in Table 3.5 and shows the collective patterns that emerged from analysis of the texts selected by the case study children for teaching their groups of peers.
Table 3.6: Example of inductive analysis across the four case studies for the category multimodality

<table>
<thead>
<tr>
<th>Parameters of the inquiry</th>
<th>Internet Reciprocal Teaching model</th>
</tr>
</thead>
<tbody>
<tr>
<td>In this inquiry the children engaged in learning experiences using a specific model, Internet Reciprocal Teaching. Using a model created certain limitations around collecting information about their perspectives. The children required adult guidance at particular steps of the research to engage in the learning activities. In particular, in step 1 of the IRT intervention (explicit instruction by the researcher of online reading skills and strategies) the children required high levels of adult support to gain a deeper understanding of these to then teach their peers.</td>
<td></td>
</tr>
</tbody>
</table>

| Even though the researcher had spent time in the field to build relationship with the participants, being filmed while working in a small group setting during step 2 of the IRT intervention, had some impact on the child participants’ responses and the language they used. For example, initially, case study child participant Ella, appeared particularly reserved in step 1 of the IRT intervention, but grew more confident as the process unfolded. Data indicated she viewed herself as a confident and successful teacher of her group of peers (RTSR-12). |

<table>
<thead>
<tr>
<th>Multimodality (M)</th>
<th>Modes of selected text</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nathan (Go Jetters)</strong></td>
<td><strong>Yasmin (Hey Duggee)</strong></td>
</tr>
<tr>
<td>LINGUISTIC</td>
<td>LINGUISTIC</td>
</tr>
<tr>
<td>Written text (four locations of the missions)</td>
<td>Written text explaining purpose of the game; instructions to make the jam; congratulations badges</td>
</tr>
<tr>
<td>Oral narration of text</td>
<td>Images and text (use of green colour to camouflage Tom; yellow round balls as obstacles like the sun; mushroom people shaped as mushrooms)</td>
</tr>
<tr>
<td><strong>VISUAL</strong></td>
<td><strong>VISUAL</strong></td>
</tr>
<tr>
<td>Images and colours (four locations, spinning globe, sparkling gold coins, dark colours of invaders, obstacles)</td>
<td>Images and colours (for squirrel characters; colours and shapes of the fruit)</td>
</tr>
<tr>
<td><strong>AURAL</strong></td>
<td><strong>AURAL</strong></td>
</tr>
<tr>
<td>Sounds (player jumps over the obstacles; landmarks are saved; coins collected; invaders conquered)</td>
<td>Sounds (when the game is introduced; “yeh” of the squirrels when a fruit is eliminated; sound when flavour of jam is selected)</td>
</tr>
<tr>
<td><strong>SPATIAL &amp; GESTURAL</strong></td>
<td><strong>SPATIAL &amp; GESTURAL</strong></td>
</tr>
<tr>
<td>Movement (arrows; invaders; gold coins; game layout)</td>
<td>Movement (of the characters as they climb the tree; movement of fruit across the screen; jumping action of characters)</td>
</tr>
</tbody>
</table>
Online text

In this inquiry, a single website (ABCKids) incorporating multiple games was selected as the focus text for this inquiry. Within this single website their were multiple games for the participants to choose from. Each game had a different design and purpose, while integrating different modes for meaning making. It is acknowledged that digital games are only one example of the vast array of online texts that young children are familiar with and engage with to play, interact and learn (Comber, 2001). Understanding the demands on the readers in one context afforded opportunities for deeper reflective measures by the researcher to analyse data. In this inquiry, a section in Chapter 2 considers a broader notion of what constitutes ‘text’ in online environments.

Ethical considerations

Mertens (1998) identified a set of ethical principles for researchers that take account of the sensitive nature of educational research. Some of these ethical considerations were observed in relation with this inquiry. The inquiry intended to be ethical by ensuring:

- a valid research design, including appropriate sample selection
- that the researcher competent and informed consent was obtained
- confidentiality and respect of privacy.

Valid research design

This inquiry carefully considered the sensitive nature of working with young children. Adopting this perspective, the inquiry explored the experiences of the selected children by designing methodologies that used language and structures appropriate to the age of the child participants. The relationships between researcher and child participants were carefully considered, with the researcher firstly conducting fieldwork in the classroom setting before completing any data collection. In this way, the young children became familiar with the researcher in a safe and natural environment. Additionally, all research activities took place either in the classroom, the verandah or the COLA, which were all familiar learning spaces for the young children with vision and access at all times to their regular classrooms.

Competent researcher and informed consent

Prior to commencing the inquiry, the researcher obtained ethical approval from the University of Wollongong Ethics Committee (HE14/258) on 14 August 2014 (Appendix A). The researcher also gained ethical approval from the school system in which the
research was conducted (Appendix B). To proceed with the inquiry in the selected school site, approval from the principal was also obtained prior to data collection (Appendix C).

To ensure all participants were informed of the aims and expectations of the inquiry an information sheet was provided to the school principal, the teachers and the parents/carers of selected students. Informed consent to participate in the inquiry was obtained from the teacher participants (Appendix D) and the parents/carers of the young children (Appendix D). No data were collected from children other than those who consented to be part of the inquiry.

In addition to parents/carers consent, it was important to obtain each child’s agreement and willingness to participate at each step in the inquiry (Creswell, 2013). For example, the researcher would ask, ‘is it alright if I ask you some questions about what you are doing?’ The researcher was aware if a child participant appeared reluctant to engage with the researcher at any time during data collection, with the researcher respectfully exiting the situation.

Confidentiality
In case study research, the researcher must take steps to safeguard the privacy of the participants, especially the identity of field sites and particular individuals within them (Gall et al., 2007). The data collected were stored in locked filing cabinets in the home office of the researcher. The school site, the child participants and the teachers were all assigned pseudonyms before coding, analysis or reporting of the data to ensure confidentiality. The collected data were treated with sensitivity and confidentiality at all phases of the inquiry.

Trustworthiness of the inquiry
Creswell (2013, p. 250) views trustworthiness in qualitative research to be an attempt to assess the accuracy of the findings. The value and accuracy of qualitative research is increased if the researcher spends extensive time in the field, provides detailed thick description and establishes a close rapport with participants. A variety of techniques or strategies can be used by the researcher to document the accuracy of the research. It has been argued that this will increase the trustworthiness of a study (Creswell, 2003). In this inquiry the use of prolonged engagement, triangulation, peer review and the
documentation of an audit trail were techniques used to establish trustworthiness of the inquiry.

**Prolonged engagement**
Lincoln and Guba (1985, p. 300) recommend “prolonged engagement” between the researcher and the participants so understandings of the site and trust with the participants, can be established. This was significant to this inquiry, considering i) the ethnographic principles that guided the research and ii) the importance of thick descriptions of the context and the child participants.

**Triangulation**
Triangulation, or the use of multiple data sources, allows for different data sources to be compared and contrasted with each other so a coherent analysis can be built (Patton, 2002). Triangulating multiple sources of data increases the trustworthiness and credibility of the findings (Creswell, 2013). Triangulation also has the capacity to deepen one’s understanding of the phenomenon being studied (Patton, 2002). This was a significant consideration in the case study methodology used in this inquiry, as the perceptions and lived experiences of the young participants added to understanding the collective case.

**Peer review**
Peer review or debriefing provides the researcher with an external check on the credibility of the inquiry (Creswell, 2013). During data collection and analysis, the researcher shared and discussed interpretations with her supervisors and colleagues, who kept her honest (Lincoln & Guba, 1985) by asking challenging questions about methods, meanings, interpretations and evidence (Creswell, 2013).

**Audit trail**
Maintaining an audit trail provides a structure for documenting how the inquiry was conducted (Guba & Lincoln, 1989). It documents the chain of events, building clear and meaningful links between the research questions, the data and the findings (Gall et al., 2007). In this inquiry, the audit trail documents the codes used throughout the inquiry to cite the sources of data reported (see Appendix E).

**Chapter conclusion**
This inquiry adopted a collective case study approach which enabled an in-depth investigation of the research questions using multiple sources of data. The choice of methodology was justified as the most appropriate for addressing the research questions. This approach enabled the researcher to build detailed descriptions of the four cases within the boundaries of the educational context in which they were observed. Data collection methods captured the perspectives of the young children as they became facilitators of peer learning experiences in a specific pedagogical setting. The analysis of these learning experiences framed by New Literacies theory, provided insights into the reading demands of online texts and the ways that young children can be supported to develop the skills and strategies needed to read online. The next chapter provides an overview of the Year One teachers’ perspectives about literacy pedagogy, their beliefs and assumptions about teaching literacy, and how they integrate technology into their literacy program. A detailed description of the child participants’ learning environment is also provided.
Chapter 4: THE LEARNING ENVIRONMENT
CHAPTER 4

THE LEARNING ENVIRONMENT

Chapter introduction

This chapter begins with a description of the insights into the beliefs and assumptions of the classroom teachers with regard to literacy experiences and technology use followed by a description of the Year One children’s classroom environment. This information enabled the researcher to gain an understanding of the children’s prior knowledge, skills and experiences regarding literacy and technology as participants in the inquiry. This is followed by an overview of the assessment data collected in phase one of the research and the activities which framed the Internet Reciprocal Teaching intervention in phase two. The chapter concludes with interpretative comments regarding the data analysis and a summary describing the ways in which the research questions were addressed.

The educators

Meet the teachers

At the time of this inquiry, Mrs Evan and Mrs Nau were the class teachers of the two, Year One classes. Mrs Evan taught Year One E, and Mrs Nau, Year One N.

Mrs Evan

Mrs Evan had over 22 years of teaching experience, including experience in teaching Reading Recovery and a significant number of years teaching Early Stage children (aged between five and six) and Stage One children (aged between six and eight). Mrs Evan was selected as a participant in this inquiry because she had a keen interest, knowledge and expertise in the use of technology to enhance learning. She had been instrumental in leading the school’s one-on-one technology device program for Stage Three students (aged between 10 and 12 years), supporting teachers by building their capacity in digital literacy skills and exploring pedagogies that would better support the integration of technology into learning experiences. Mrs Evan’s beliefs and assumptions with regard to the delivery of effective literacy programs whilst integrating technology to enhance student learning are discussed in the section below.

Mrs Evan’s beliefs

Mrs Evan shared that her teaching had changed since she was a graduate teacher (EI-1).
She explained:

Now I am more flexible in my teaching approach and have the knowledge and experience to prioritise what strategies students need to know next, to become competent readers and writers. This is an extremely important teaching skill.

Mrs Evan spoke about the school’s use of student assessment data to design teaching programs commenting, “we use the literacy continuum to monitor students’ progress and this is a very valuable tool”. Mrs Evan explained:

I am aware of the need to be explicit when teaching children literacy skills and strategies, and using data effectively supports the planning of learning experiences targeted to their needs. Teaching is very explicit in my classroom with clear learning focuses in literacy routines (EI-1).

Mrs Evan also said that there had been a huge shift in the culture within her classroom (EI-1). She elaborated on the importance of the teacher’s role in the learning process: “The responsibility lies with the teacher to ensure students learn. The teacher needs to find a way to ensure each student has growth in their literacy learning”. Mrs Evan also commented on the importance of using technology to enhance learning: “Technology has opened up a world of information for the students of today; children can now be interactive with online sites and as an educator, I can present information to them in a more interesting way”.

Mrs Evan acknowledged the importance of students being competent users of technology (EI-1). She said that as an educator, she didn’t teach online reading skills as explicitly as print-based reading skills. She was more concerned with teaching students how to use the technology, without really focusing on teaching children the skills needed to be effective screen-based readers. At the end of this interview Mrs Evan commented to the researcher: “You have given me something to think about”.

Mrs Nau
Mrs Nau had over 30 years of teaching experience, including experience in teaching Reading Recovery and over 20 years of teaching at this school site. Like Mrs Evan, Mrs Nau’s teaching experience was in Early Stage (aged between five and six) and Stage One children (aged between six to eight). She had extensive knowledge in teaching print-based reading and writing, and a reputation throughout the school community as an effective early years teacher. Mrs Nau was keen to participate in this inquiry (EI-2) and was selected as a participant so as to further develop her capacity to
integrate technology into her classroom practice. Her beliefs and assumptions with regard to her literacy program and how she integrates technology to enhance student learning is discussed in the section below.

Mrs Nau’s beliefs

Mrs Nau appeared a confident practitioner and could clearly articulate what she believed to be good pedagogy in her classroom (EI-2). She spoke about balanced teaching opportunities and how important it was to instruct her students at whole class, in groups and individually. Mrs Nau also explained that technology was important, as it was the “future of education”. She discussed how both she and Mrs Evan used data to explicitly design learning and teaching experiences. She said that data “guides their teaching” and that they used data to “meet individual children’s literacy needs”. Mrs Nau explained how the monitoring tool, the Continuum (NSW DEC, 2011) supported the teaching of vocabulary, in particular to develop technical language to name the parts of the computer. She stressed that it was important for children to learn word processing skills. Mrs Nau also reported, “I use the smart board each day, and the children mark their names off on the roll by tapping on the smart board”. Mrs Nau explained that her students use iPads in the literacy sessions like Mrs Evan’s students. However, it was interesting to note that Mrs Nau commented that iPads were much easier for her children to use as they were far more familiar with them than with computers. At the end of the interview, Mrs Nau reflected:

I don’t really teach online reading, what I do is use technology daily, but I have to admit, it is just print-based reading in a digital form (EI-2).

Mrs Evan’s and Mrs Nau’s English program

Mrs Evan and Mrs Nau collaboratively planned their English programs, meeting weekly to plan literacy instruction, discuss resources, make adjustments to the program and discuss students’ literacy progress. The joint English program (ETP) involved students reading and writing daily. Mrs Evan and Mrs Nau plan and document a weekly English session including differentiated learning tasks, clear learning focuses for literacy routines and opportunities for students to make choices in their learning. They also include varied modes of instruction in their classrooms, with students engaging in literacy experiences with the whole class, in guided groups and in independent learning opportunities. Mrs Evan and Mrs Nau literacy program had an extensive focus on texts. Mrs Evan explained, “most of what we do significantly involves students accessing
texts: they respond to texts and they compose texts” (EI-1). Mrs Evan also discussed the range of different reading materials, which the students accessed in the literacy session (EI-1; CO-1). She explained, “there is a large range of picture books in both classrooms (bulk loan from the library) as well as instructional readers” and “we use the smart board to engage students in viewing digital texts”. Mrs Nau acknowledged that the children mostly engaged with print-based texts. Even though eBooks, audiobooks, music and video titles (including licensing for multiple digital texts) were available in the school library for borrowing, Mrs Nau commented, “we only use print-based text in guided reading groups” (EI-2). These reading groups were conducted in the engine room, an assigned space within each classroom for group instruction.

Mrs Evan’s and Mrs Nau’s English sessions

Both Mrs Evan and Mrs Nau delivered a planned English session daily, using data to inform the learning intentions for whole class instruction, instruction with individual children and small group guided sessions in reading and writing (EI_1-2; ETP; CO_1-2). Their literacy sessions were nearly identical. Mrs Evan explained, “English episodes occur every day of the week with concepts in reading, writing, speaking and listening components taught throughout the episodes”. Mrs Evan explained, “our responsibility is to meet the individual literacy needs of all students through regular assessment and tracking using the literacy continuum”. Mrs Evan also spoke about assessment and how it is part of the teaching cycle for both classrooms: “rich, quality assessment is important in our classes; it is our responsibility to know what students can do in their learning and what we need to teach them next”.

Mrs Evan’s and Mrs Nau’s use of technology in English sessions

Mrs Nau explained how technology was used in the classrooms (EI-2; CO-2). She said, “technology is used as a tool to support learning”. She continued, “it helps to present and share information in a more interesting way for the children”. Mrs Evan commented, “the use of the smart board provides students with the opportunity to interact with their learning. For example, I can teach anything from phonics, share a text or go to the weather report, and the students can visually see what I am discussing”. Mrs Nau also commented, “I am learning to do more with technology in the classroom”.

Mrs Evan also explained how children use iPads in Literacy Groups (EI-1; CO-1): “they access apps to develop spelling and phonic knowledge and to support literacy
learning”. Mrs Evan revealed, “students need some different skills to access online texts and really, I do not teach online skills as explicitly as I teach print-based reading skills”.

There were several displays in both classrooms, (i.e. teaching walls) regarding literacy and numeracy strategies. However, the only visual information in the classrooms regarding digital literacy skills/technology was a display of the rules for students to follow, regarding the care and safe use of the classroom technology resources. Both classrooms displayed this poster. Figure 4.1 shows the technology poster displaying the class rules.

![Technology poster](image)

Figure 4.1: Technology poster

**Interpretive summary**

Mrs Evan’s perspective was important to this inquiry because of her contributions to literacy and literacy instruction at a system and school level. She had recently completed postgraduate studies in the area of literacy, and through her responses to interview questions (EI-1) demonstrated a deep understanding of current theory in literacy and literacy instruction. Her classroom practice was planned using current student assessment data and included explicit learning intentions and instructions when teaching reading and writing processes (CO-1). The researcher was also interested in Mrs Evan’s perspective because of her keen interest in and use of technology to support
children’s learning. However, data (EI-1) indicated that Mrs Evan had become reflective on her teaching in regards to the use of technology in her practice. Even though she was very familiar with the use of technology for personal and professional practices, the interview questions had challenged her beliefs about how she was using and authentically integrating technology into her classroom practice. Kervin et al. (2017) claim educator’s ability to articulate their understandings about the demands of online texts will support their pedagogies when using online texts with their students. However, data indicated this was not evident in Mrs Evan’s classroom. Educators need to use the Internet and incorporate a range of multimedia texts to support students to move away from the linear ‘print only’ expectations of reading (Hill, 2005).

Mrs Nau was a very experienced teacher and had extensive knowledge about teaching young children reading and writing. Her perspective was also important to this inquiry, as even though she had extensive experience and knowledge about how young children learn literacy, her knowledge and experience with integrating technology into learning experiences was limited (EI-2). Kervin et al. (2017) suggest that a deep understanding of personal online use will support educators to consider suitable approaches to teach students to be effective online users. Data indicated that Mrs Nau was open to collaborating with Mrs Evan and stated she “welcomed the opportunity to be a participant in this inquiry to build her own capacity to learn more about online reading” (EI-2). Husbands and Pearce (2012) identify the importance of the teacher’s role in literacy instruction: the teacher’s behaviour, their knowledge and understanding, and their beliefs.

From analysed data (EI_1-2; ETP; CO_1-2) it can be assumed that Mrs Evan and Mrs Nau believed:

- *Educators require a deep knowledge base regarding reading and writing processes, and a broad repertoire of teaching strategies to be effective teachers.* Understandings from the literature (Chall, 1967; Scriber & Cole, 1981; Street, 1984) suggest a planned and systematic way to teach reading and writing is required to develop children’s literacy skills. Data in this inquiry indicated that Mrs Evan and Mrs Nau had a planned and systematic approach to their literacy instruction. Brown (2014) argues that children can develop a strong foundation for literacy and reading development if they are given opportunities to engage in purposeful and meaningful learning experiences. Data indicated that Mrs Evan and Mrs Nau provided their students with opportunities for purposeful and meaningful reading and writing experiences during the literacy sessions. However, these were mainly opportunities
to engage with print-based literacy activities.

- **It is the teacher’s responsibility to provide students with explicit teaching experiences that engage them in learning.** Understandings from the literature (Archer & Hughes, 2011; Edwards-Groves, 2012) highlight that if teachers are systematic, direct, engaging and success orientated, they can effectively support student learning. Data indicated that both Mrs Evan and Mrs Nau met weekly to reflect on the teaching program and documented in their program explicit learning intentions for the episodes in their literacy sessions. Data indicated that Mrs Evan and Mrs Nau acknowledged that they needed to reflect on their role as facilitators of learning in the classroom, if they were to explicitly teach online reading skills and strategies and integrate technology more authentically in their literacy program. This aligns to research by Leu et al. (2013) who claim when considering the instruction of online reading, the role of the teacher becomes more important than ever.

- **Teachers should use current data to plan programs to support learning at whole class, group and one-on-one levels: all students could learn to read and write if teachers knew their students and what each student needed to learn next.** Data indicated that Mrs Evan and Mrs Nau collected and used print-based assessment data to plan learning experiences in their balanced literacy sessions. This points to literature (Archer & Hughes, 2011; Coiro, 2011; Hattie, 2012) that suggest teachers need to know their students’ learning needs to design explicit teaching lessons. For the teachers and children in this inquiry, assessment data had only ever been collected to inform reading teaching with print-based texts. Leu et al. (2015b) argue it is essential for the teaching of online reading to have valid and reliable assessments, if we are to prepare students for their literacy futures.

- **Technology could enhance teaching programs.** Data (ETP; CO_1-2) indicated the explicit teaching of online reading skills was not evident in teacher programs or classroom practice. However, teachers were very explicit in the teaching of reading strategies for print-based texts. Observation data indicated that Mrs Evan and Mrs Nau provided children with opportunities for technology use in their literacy sessions, however data indicated there was limited explicit instruction regarding skills and strategies to effectively use technology. Research by Danby et al. (2013) and Doyle (2011) indicate that there has been substantial support for teachers to implement effective pedagogical strategies to integrate technology into learning experiences for young children, and learning should have a focus on both print and
digital texts from the earliest years of schooling.

Analysed data (EI_1-2; ETP; CO_1-2) revealed an important consideration relating to the focus of this inquiry: children in both Mrs Evan’s and Mrs Nau’s classes were exposed to explicit teaching in reading strategies for print-based texts but not for digital and online texts.

**Intervention**

In this section the pedagogical strategy of ‘children as experts’ is explored, with a focus on using reciprocal teaching to empower children as co-learners. This focus on children as co-learners made it possible to investigate the use of Internet Reciprocal Teaching model to encourage the social interactions of the children and to promote their learning when interacting with online texts.

**Internet Reciprocal Teaching model**

In phase two of the research, Internet Reciprocal Teaching model was used as an intervention and it framed the interactions between the children, and between the children and the researcher, as they i) built understanding about online reading demands, ii) planned and taught a lesson to their peers and then iii) reflected on their role as ‘expert’ during their teaching experience. The researcher’s design of the intervention was informed by i) assessment data collected in phase one (CAP and ORA) and ii) knowledge of the children’s access and use of technology and their learning context (SI_1-13; CO_1-2). The four explicit lessons taught by the researcher to the four case study children in step 1 of the IRT intervention are documented in Appendix W. These lesson designs were informed by analysed data collected in phase one (refer to Table 3.2: Overview of phase one data collection) and aligned to the reading and viewing outcomes from the teachers’ program (ETP) (NSW Board of Studies English Syllabus for the Australian Curriculum [BOSTES], 2015). Appendix P shows an example of a child participant’s profile including data from phase one data collection. The intervention, including the children’s lesson plans, their teaching of a digital game to a group of peers and reflection activities are discussed further in the next chapter.

Table 4.1 provides an overview of the IRT intervention for the four case study children, explaining the responsibilities of the researcher and the children in the activities within the three IRT-based steps of the intervention.
Table 4.1 Overview of Internet Reciprocal Teaching intervention

<table>
<thead>
<tr>
<th>Researcher responsibility</th>
<th>Children’s responsibility</th>
<th>Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>IRT Step 1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Explicit Teaching of online reading skills and strategies</strong></td>
<td>Purpose: to build understanding of online reading demands</td>
<td></td>
</tr>
<tr>
<td>Set questions for focus group interview</td>
<td>During 4 explicit lessons children responded to the explicit teaching by:</td>
<td>Four explicit lessons taught to children in a small group setting</td>
</tr>
<tr>
<td>Using phase one assessment data design explicit lessons and select an appropriate website as an online text to support instruction and student learning needs</td>
<td>• Observing modelled demonstrations (orally and visually) by the researcher and between peers including strategies predicting, questioning, clarifying, summarising</td>
<td>Each lesson lasted approximately twenty minutes</td>
</tr>
<tr>
<td>Explicit demonstration of RT strategies, think aloud strategy, technical skills and language by researcher:</td>
<td>• Discussing and using the think aloud strategy to explore the modes and functions of the game (print, image, sound, movement)</td>
<td>Lessons were conducted in the verandah space attached to the classroom where group teaching occurred</td>
</tr>
<tr>
<td>• Access, load and locate information</td>
<td>• Trialling and experimenting with the online reading skills and strategies (navigate textual, aural, linguistic, spatial and visual resources to understand the game)</td>
<td></td>
</tr>
<tr>
<td>• Scroll, swipe, tap skills</td>
<td>• Developing metalanguage</td>
<td></td>
</tr>
<tr>
<td>• Functions e.g. back and forward arrows</td>
<td>• Articulating understandings (both disciplinary &amp; technology) through think aloud strategy</td>
<td></td>
</tr>
<tr>
<td>• Modes of the text</td>
<td>• Demonstrating knowledge through responses to games and creation of texts</td>
<td></td>
</tr>
<tr>
<td>Language:</td>
<td></td>
<td>Children plan their group learning experience</td>
</tr>
<tr>
<td>• Access, load, locate, website</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Scroll, swipe, tap</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Back/forward arrows</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Home page</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Print, image, sound, movement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Children guided through planning a lesson using a scaffolding guide with strategy headings:</td>
<td>During group planning experience the 4 children:</td>
<td></td>
</tr>
<tr>
<td>• Predict</td>
<td>• Selected a game to teach to their peers</td>
<td></td>
</tr>
<tr>
<td>• Question</td>
<td>• Planned and documented a lesson using IRT strategies and lesson planning guide</td>
<td></td>
</tr>
<tr>
<td>• Clarify and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Summarise</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Children guided through documenting a lesson sequence.</td>
<td></td>
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</tr>
</tbody>
</table>

During group planning experience the 4 children:
- Selected a game to teach to their peers
- Planned and documented a lesson using IRT strategies and lesson planning guide
IRT Step 2
Group work and reciprocal exchange by children with their peers

Purpose: to plan and teach a lesson to their peers

<table>
<thead>
<tr>
<th>Observed children:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Teach a lesson</td>
</tr>
<tr>
<td>• Demonstrate knowledge, skills and strategies to peers to successfully engage with the game</td>
</tr>
<tr>
<td>• Respond to and clarify peers’ questions</td>
</tr>
<tr>
<td>• Interact during group work</td>
</tr>
<tr>
<td>• Teach their lesson to peers</td>
</tr>
<tr>
<td>• Demonstrate knowledge, skills and language to engage with online game</td>
</tr>
<tr>
<td>• Respond to peers questions</td>
</tr>
<tr>
<td>• Support their learners through collaboration</td>
</tr>
<tr>
<td>• Clarify information regarding peers’ learning</td>
</tr>
<tr>
<td>• Complete the lesson</td>
</tr>
</tbody>
</table>

• Four lessons were delivered with each lesson being taught by one case study child to three or four learners
• Each lesson lasted approximately 20 minutes
• Three lessons were delivered in the engine room and 1 lesson in the COLA

IRT Step 3
Sharing and reflecting on teaching

Purpose: to reflect on their role as ‘experts’

| • Set reflection questions for semi-structured interviews |
| • Conduct semi-structured interviews with 4 case study children |
| • Conduct individual semi-structured interviews with 9 peer participants |
| Four case study children reflect on their teaching in terms of their capacity to teach their peers and support their peers’ learning |
| Peers reflect on the lesson to: |
| • report their perceptions of the learning experience to develop their capacity to play the game |
| • report their perceptions of their peers’ teaching capacity |

Semi-structured interviews by researcher at completion of each lesson with:
• each of the 4 case study children (approximately five minutes each interview)
• each of the 9 child participants (approximately five minutes each participant)

Interpretive summary
From the analysed data across the three steps of the IRT intervention ((FGI_1-4; RTLP_1-4; RTO_1-4; RTSR_1-4) it could be concluded that:

• Learning contexts that support children to take risks and make choices in their learning can provide them with opportunities to share thinking, ask questions and to problem solve. This finding aligns with Walsh (2011) who claims that classrooms are social settings, where young children need to learn how to participate in talking and the learning activities, and know the interactions of the classroom context.
• Current assessment data is essential for planning programs to explicitly meet children’s learning needs. This finding aligns with research (Bearne, 2009; Clay, 1979; Coiro, 2011; Leu et al., 2015a) that recognises it is only through understanding what a child already knows that a teacher can identify what should be learned next.

• Teachers require deep knowledge and understanding of the reading demands of online texts and they need to select and have access to appropriate resources. To acquire this deep knowledge and understanding Kervin et al. (2017) argue, a deep understanding of personal online usage and an ability to articulate understandings about the demands of online reading, including the way different modes interact, will support teachers to design pedagogies for online reading proficiency.

• With explicit teaching, children can develop the skills and the strategies needed to read online. Studies (Archer & Hughes, 2011; Leu & Reinking, 2005-2008; Palinscar & Brown, 1984) found the explicit teaching of reading and writing skills and strategies for offline and online practices enables learners to become literate.

• With support, children can successfully take control of their own learning and contribute to the learning of their peers. Supporting this view, Rosenshine and Meister (1994) found a gradual release of responsibility model is an effective technique that empowers students to become independent learners.

• With support, children can develop a metalanguage to talk about their learning. Supporting this view, Kervin et al. (2017) and van Leeuwen (2004) claim that talking about texts and technology is important to the growth of the skills and strategies for engaging with online texts.

• With support and opportunities to do so, children can reflect on their own learning and the learning of their peers. Westera and Moore (1995) found these opportunities allow metacognitive thinking and empowers students to take ownership of their learning in systematic and purposeful ways.
Chapter conclusion

In this chapter, data from interviews, observations and document analysis were presented and discussed. A thick description of the classroom environment and the teachers’ beliefs about literacy, technology and programming were presented. Following this, a detailed description of the intervention was presented, including the responsibilities of the researcher and the case study children throughout the IRT-based steps of the intervention. To conclude the chapter, a table summarising the information from the activities in the intervention was presented. A detailed description of the individual case studies of the four children are presented in the next chapter. Findings from each case are then used to identify patterns and themes in the collective case to support the discussion in the final chapter.
Chapter 5: THE FOUR CASE STUDIES
CHAPTER 5

The four case studies

Chapter introduction

This chapter presents the analysis of the data from the qualitative inquiry involving four Year One children as they participated in a reciprocal teaching experience. The analysed data is referenced using the codes from the audit trail (Appendix E). The process of data analysis was undertaken using the theoretical frame of New Literacies theory (Leu et al., 2013). The analysis examined the literacy practices of the participants as they engaged with an online text (digital game) during a reciprocal teaching experience. The participants were encouraged to use the ‘think aloud’ strategy to articulate their understandings of the text they engaged with and the demands of the technology itself.

Outline of the individual case studies

This section provides a description of the four individual case studies. Each case study introduces the child expert, and provides an overview of the skills and strategies they demonstrated in the CAP (Clay, 1970) and ORA (Kervin & Mantei, 2015) assessments. It then describes the Internet Reciprocal Teaching intervention. As explained in the previous chapter, data collection focused on the case study children working with the researcher in multiple settings: the classroom, the verandah space and the Collaborative Outdoor Learning Area (COLA). The four case study children worked alongside the researcher, participating in the intervention, in which the strategies and skills required for accessing and engaging with a website and digital game were explicitly taught. Instruction occurred through guided demonstrations and modelling of the strategies required for using an online resource, the ABCKids website (Australian Broadcasting Corporation [ABC], 2015). These lessons also involved the researcher scaffolding the children’s efforts as they explored and became familiar with the resource. As the children acquired the modelled behaviours, opportunities were provided through utilising the ‘think aloud’ strategy for them to share their insights with the researcher and each other as they practised applying the strategies online.

When the researcher observed that the case study children had progressed in their ability to apply the strategies independently and had sufficient knowledge of the reading demands of the online resource, she began a process in which the children planned and
taught a lesson to a group of their peers. During these group planning experiences, the children engaged in activities to:

- explore a website and select a digital game
- plan and document a lesson
- teach the lesson to a group of peers
- reflect on their teaching as ‘experts’.

The participants were encouraged to articulate their understandings using the ‘think aloud’ strategy. Self-reflections from the case study children and reflections from each child participant in the case study lessons, are then presented. Each case study concludes with an interpretive summary of the individual case presented.

**Case study 1**

**Meet Nathan**

At the time of the inquiry, Nathan was 6 years and 3 months old and in Year One E. He lived with his parents and his twin sister, who was also in Year One E. Nathan did not have access to a wide range of technologies at home (SI-3). His mum and dad both had computers but he reported, “I’m not allowed to use these”. Nathan sometimes used his nanna’s iPad, and he enjoyed opportunities to use an iPad at school. He liked playing games on iPads. His favourite game on the school iPads was the ‘Frog’ game. He also liked playing maths games.

During classroom observations Nathan presented as a very confident student (CO1-3). He appeared keen and willing to take risks in his learning, volunteering answers in whole class discussions and in writing tasks, attempting to independently spell words on his practice page. Nathan appeared to socialise well in literacy groups, collaborating with peers when involved in activities. Nathan’s interactions with the CAP assessment indicated he had a basic knowledge of the processes needed to read print-based text. In particular, he understood that the printed word conveys a message. He understood concepts such as where to begin reading, the directionality of the text and reading the left-hand page before the right-hand page but could not identify capital letters and some items of punctuation (CAP_1-3).

Nathan confidently engaged in the ORA assessment (Kervin & Mantei, 2015). Even though he had limited access to a computer or iPad in the home environment, he
appeared comfortable with using the mouse to navigate the cursor across the screen and possessed some technical skills such as the use of the back arrow and the sound icon functions. However, Nathan did have difficulty using the highlighting function. It also appeared that Nathan brought his print-based reading skills to the online environment, answering the initial question around what he noticed on the webpage with a response, while reading out loud the linear text on the screen, “At the Zoo” (ORA1-3). When asked to look at the things that were moving on the page, Nathan’s attention was drawn to the text and he stated, “only the words at the top are moving” (ORA1-3). After Nathan became familiar with the webpage, the images that moved (the animation and the advertisements) and not the linear text were the things he nominated as his favourite parts of the site.

In the CAP assessment, Nathan was unable to identify capital letters or show an understanding of punctuation, and these were also items that he failed to identify on the ORA assessment. In both assessments, Nathan could distinguish between one letter and two letters, and he showed an understanding of the function of a full stop. However, questions relating to identifying capital letters, comma, question mark and speech marks were difficult for him in both assessments.

Nathan was keen to contribute as a writer to the blog, choosing the title At School from the menu bar. He composed the story, “At School wen I go to school I play with MY frened Luka wen I play tip Luka all was tips me” (ORA1-3).

The analysed data revealed two important aspects of Nathan’s prior knowledge and experience regarding online reading demands of the webpage. Even though Nathan had limited experience with technical devices in the home environment, he demonstrated some knowledge and skills when navigating an online text. He demonstrated the understanding that both print and online texts convey messages and he could transfer some of his knowledge, skills and strategies about print-based texts to the online reading environment.

The next section of this case study provides an overview of the processes Nathan engaged in, including a description of the text he selected to teach to his peers and his documented lesson plan. This is followed by a description of the lesson he taught to the children in his Reciprocal Teaching group. Following this is a summary of Nathan’s reflection on his role as ‘expert’ as well as his peers’ perceptions of the learning

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experience. The case study concludes with an interpretive summary of the case.

**Group planning experience**

_Nathan selects a text_

During the group planning experience, in which the case study children selected a game to teach to their peers at a later date, Nathan had minimal verbal interaction with the other children as he engaged with the website ABCKids (Australian Broadcasting Corporation [ABC], 2015) (FGI-3). For example, he remained seated on the floor, engrossed with the site while Kurt, Yasmin and Ella interacted and collaborated with each other as they explored the site.

Nathan made minimal eye contact with Kurt, Yasmin and Ella, even when he was responding verbally to questions they were asking him (FGI-3). For example, Kurt requested some help from Nathan asking, “Nathan … Nathan”, and then asking again “excuse me Nathan”. Nathan remained focused on his screen, acknowledging Kurt by saying, “yeh”. Kurt asked, “how do you make the Go Jetter move”? Nathan continued playing his game and did not respond or look at Kurt. Kurt pursued the question, “how do you make the Go Jetter move”? Nathan remained focused on the game and responded, “push the arrow”. It appeared that Nathan enjoyed exploring independently in the online environment and could engage with the site with minimal interaction with his peers. As part of this process Nathan selected a game within the site to teach to his peer group (FGI-3). After choosing his game and exploring it further, he exclaimed excitedly, “I’m in Egypt, I’m playing in Egypt”. It appeared that Nathan enjoyed the opportunity provided within the game to make choices regarding the location, where he could conduct a mission. Nathan stated he had chosen the game Go Jetters because, “I have seen this on TV and I like that it is about a mission”.

_Synopsis of the game Go Jetters_

The game _Go Jetters_ is about following four heroes - Xuli, Kyan, Lars and Foz and their
adventures as they travel the world. The purpose of the game is to save four well-known global landmarks, the Pyramids (Egypt), the Opera House (Australia), the Lambert Glacier (Antarctica) and the Great Wall (China) from invaders. The reader chooses which famous place (mission) they would like to save. The game gives the reader information about the selected landmark, both in written text (that appears on the screen) and a voice recording. The reader is required to jump over obstacles that appear moving across the screen and arrive at the destination in time to save the landmark from the invaders. The reader is also required to collect gold coins while jumping over the obstacles. As you collect and accumulate the gold coins, you gain more support from the four heroes who help the reader eliminate the invaders and save the landmark. The term selfie is used at the end of the game with the player having the option of taking a selfie at the famous landmark to demonstrate they have accomplished the mission. The reader also has the option of completing a quiz about the landmark they saved.

**Reading Demands of Go Jetters**

For Nathan to be able to teach his learners the game, he required an understanding of the multiple modes within *Go Jetters*, and how they interacted with the functions to support the player to make meaning. With researcher support, Nathan identified and discussed the following modes in *Go Jetters*:

- the linguistic mode; the written information about the four locations of the missions and the oral narration of the text to support the player
- the visual mode; the images and colours used at the four locations (these reflected the climate of each location), the spinning globe, obstacles, sparkling gold coins and the dark colours of the invaders
- the aural mode; the sounds that are heard when the player jumps over the obstacles, when the landmarks are saved, when the coins are collected and when the invaders are conquered
- the spatial and gestural modes; the layout of the game, the movement of the arrows, the invaders and the gold coins (FGI-3).

Nathan also had to teach his learners the following technical skills and language in order to engage with the game:

- access; access the site, open the browser and type the URL
- URL; where to enter the URL and how to accurately typing it
- icons; how to identify the visual icons indicating the game has fully loaded
- locate; how to locate the particular game within the website
• tap; how to tap to open webpages, select games and eliminate the invaders
• scroll and swipe; scroll and swipe to move between pages within the site
• arrows; how to control the back and forward arrow functions to make choices in the game, start the game and return to the home page
• volume; how to control the sound function (FGI-3).

Figure 5.1 is an example of Nathan’s screen as he played his game. This shows examples of the knowledge and skills the player required to interact with the game; the forward and back arrows, the sound icon and the icon to select the location in which to play within the game.

![Figure 5.1: Features within Go Jetters](image)

**Nathan plans his lesson**

When Nathan began to plan his lesson, it appeared he was having difficulty articulating the information about the technical skills required to navigate the game *Go Jetters* (RTLP-3). The researcher encouraged Nathan to use the ‘think aloud’ strategy that had been explicitly demonstrated in the intervention lessons. It seemed Nathan understood the purpose and intention of the game and the games design, but was having difficulty explaining these understandings to the researcher. Nathan used body gestures to try and express his understandings more clearly. For example, when questioned by the researcher, “so tell me Nathan, what would you need to know to play your selected game?”

Nathan responded:

In the *Go Jetter* game, I didn’t know something, which to jump you had to hit an arrow that pointed up (pointed with his left hand upward); well, I had to try two times and at first I went like this (swiped his index finger on his left hand upwards) and I thought it
wasn’t working, and I tried again (swiped his index finger on his left hand upwards again) and this time I hit the top button and it went ‘ching’ (made a chopping motion with his hand) and it went bong (he laughed at remembering the sound on the site) (RTLP-3).

It appeared Nathan was having difficulty in particular with using the correct language to explain the movement and sound features of the game. Nathan’s hand gestures are shown in Figure 5.2.

<table>
<thead>
<tr>
<th>Nathan’s hand movement as he explained the arrow pointing up.</th>
<th>Nathan’s hand movement as he explained the “ching” noise.</th>
</tr>
</thead>
</table>

![Figure 5.2 Nathan’s hand gestures](image)

The researcher provided Nathan with a scaffolding guide to help him identify the knowledge and skills required to access, navigate and engage with his game in readiness for teaching his group of learners. The scaffolding guide included the reciprocal teaching headings, questioning, predicting, clarifying and summarising (Palinscar & Brown, 1984). As discussed in the previous chapter, these strategies had been explicitly taught to the case study children by the researcher as part of the intervention (four explicit lessons) and were also used by Mrs Evan and Mrs Nau in classroom reading experiences (CO1-2; ETP). The researcher was interested to observe, whether Nathan could gain a deeper understanding of the knowledge and skills required to navigate the game when guided by the strategies of reciprocal teaching (Palinscar & Brown, 1984).

Nathan documented:

- information his learners might need to engage with the game, for example the rules
- information about purpose, modes and functions of the text that might need to be discussed and/or clarified
• questions that might need to be posed in relation to knowledge and understandings about the key ideas or navigational pathways in the game
• important points, key ideas, or information that might need to be summarised to support his learners to successfully play the game.

Using his scaffolding guide, Nathan discussed with the researcher his documented understandings of the rules, knowledge and skills his learners would need in order to navigate and engage with Go Jetters. Table 5.1 shows Nathan’s documentation relating to Go Jetters, using the reciprocal teaching strategies provided in the scaffolding guide (Palinscar & Brown, 1984).

Table 5.1 Nathan’s documented scaffolding guide

<table>
<thead>
<tr>
<th>Nathan’s reflections</th>
<th>Scribed reflections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Predicting</strong></td>
<td>Go Jetters</td>
</tr>
<tr>
<td></td>
<td>Predicting:</td>
</tr>
<tr>
<td></td>
<td>Choose a mission</td>
</tr>
<tr>
<td></td>
<td>How to jump</td>
</tr>
<tr>
<td><strong>Questioning</strong></td>
<td>Questioning:</td>
</tr>
<tr>
<td></td>
<td>How to jump</td>
</tr>
<tr>
<td><strong>Clarifying</strong></td>
<td>Clarifying:</td>
</tr>
<tr>
<td></td>
<td>Press the arrow pointing up</td>
</tr>
<tr>
<td><strong>Summarising</strong></td>
<td>Summarising:</td>
</tr>
<tr>
<td></td>
<td>Choose a mission and press the arrow to jump</td>
</tr>
</tbody>
</table>
Nathan’s work sample indicates that he could identify some rules and functions of the game (RTLP-3). For example, Nathan drew arrows (pointing vertically up) under the headings ‘clarifying’ and ‘summarising’ on the scaffold. It was interesting to note that he was perhaps anticipating that his learners, like himself, would ask questions and would need clarification about the arrows, their purpose and how to use them. Previously when Nathan was exploring this game, the function of the arrows was unknown to him, and he had difficulty articulating to the researcher how to manipulate them (RTLP-3). Nathan also verbally identified and documented information about the arrows that might need to be summarised at the end of the lesson. Nathan explained:

You have to use the arrows to collect the golden coins as well as to jump over the obstacles to save the landmark.

_Nathan documents his lesson_

In the next step of this process, the researcher provided Nathan with the lesson planning guide and asked him to identify and document the lesson steps for teaching his game to his learners. Drawing on his prior knowledge of the game acquired during the explicit lessons and group planning activities, Nathan documented the sequence of his lesson steps. Table 5.2 shows Nathan’s documented sequence.

Table 5.2 Nathan’s lesson plan
Nathan documented the URL and the title of the game on his work sample (RTLP-3). He used numbers to sequentially list each step of his lesson, and then he drew icons/symbols next to the appropriate lesson steps. These icons/symbols were the identified multimodal features in his chosen game. Nathan represented them as they had appeared in the layout of the game shown in Figure 5.3.

![Figure 5.3: Icons in Go Jetters](image)

On completion of his lesson planning guide Nathan used both his written document and his iPad screen to explain and demonstrate each step of his lesson to the researcher (RTLP-3). Nathan reported:

First you have to wait for it to load and then you hit the play button; then you choose a mission, and I just drew a pyramid; and then you jump and that’s the arrow inside the circle; and then you have to collect the coins which is the fifth one and I drew a coin and then you have to complete the mission; and when you complete the mission you get to do another mission.

Nathan referred to the screen as he explained the information and skills he was going to teach the children in his group lesson. It was interesting to note that Nathan was beginning to confidently talk about the online environment and was aware of the multiple modes within the game. It appeared Nathan was ready to teach his lesson to his peers. Figure 5.4 shows Nathan’s demonstration as he explained his game to the researcher using both his written work and the iPad screen.
Figure 5.4: Nathan’s demonstrations

Group work and reciprocal exchange by children with their peers

Nathan’s lesson context
Nathan was the first case study child to teach his lesson. He delivered his lesson in the engine room to the other three case study children, Ella, Yasmin and Kurt (RTO-3). As discussed in the previous chapter, the engine room space was the designated area in the classroom where group instruction occurred. Nathan positioned himself where the teacher (expert) would usually sit to deliver the lesson, whilst his learners sat opposite him. The researcher had provided charged iPads in the engine room, reflecting the teachers’ practice of having print-based texts ‘ready to go’ for a guided reading group lesson (CO1-2).

Children’s social interactions during the lesson
Even though Nathan had appeared confident throughout the planning sessions, as he introduced his lesson he tapped his fingers on the desk and twisted them constantly as he spoke to the children (RTO-3). It seemed Nathan had placed an expectation on himself as the ‘expert’ in this situation. As the teacher, he was required to demonstrate the purpose and functions of Go Jetters to his learners, observe them as they navigated the game and then respond to their questions throughout the lesson.

It also appeared that the behavioural norms of the engine room setting had an impact on the children’s social interactions. Once Nathan began the lesson, the children’s interactions became more formal and their collaboration lessened (RTO-3). There was minimal verbal interaction between the learners throughout Nathan’s lesson, however they did appear to be enjoying the experience and followed Nathan’s instructions and engaged with the game for the duration (RTO-3).
Nathan’s teaching demonstrations during his lesson

Nathan instructed his learners in a direct and concise way. For example, he introduced the lesson by telling the children, “alright, now get into Safari please and type in ABCKids.net.au”. The URL had been documented at the top of his lesson plan (RTLP-3). Nathan then demonstrated how to access the website and asked the children to wait for the site to load, requesting, “wait for it to load please”, which was step 1 on his lesson plan (RTLP-3). Nathan worked through the documented sequence of his plan, and as the lesson progressed appeared to gain more confidence in his role as teacher (RTLP-3; RTO-3).

Nathan demonstrated throughout the lesson several features of Go Jetters and technical skills and strategies for his learners to engage with the game (RTO-3). For example, once the children accessed the website, they were required to locate the game Go Jetters and tap the large play arrow to enter the game. Nathan demonstrated this skill by pointing to the large arrow on the screen while he instructed his learners, “now play”. It appeared that Yasmin brought her prior technical knowledge (from the four lessons and planning activities) to this experience (RTO-3). She appeared confident and competent with the game’s functions and continued to explore the site independently once she had successfully accessed it. However, Kurt and Ella appeared to have difficulty with the functions in the game. It appeared that they had some difficulty transferring their knowledge of the online environment to a new game. Nathan observed the differences in his learners’ abilities and responded accordingly (RTO-3). Examples of Nathan’s ability to respond to his learner’s questions and to clarify information are discussed later in this chapter.

Nathan also demonstrated to his learners how to make choices in Go Jetters (RTO-3). He commented, “you can play whatever game you want”, referring to the options you can choose around the missions to save the different landmarks. He then continued, “if you don’t want to do that you can just hit these arrows” (pointing to the yellow arrows to the left and right of the play arrow, on the screen). It appeared, though, that Nathan had difficulty articulating his understandings of some of these functions to his learners (RTO-3). For example, he commented, “and at the moment we have to go into the Opera House thingy-ba-bob” (Nathan’s attempt at remembering the word for icon) and “whoops, I forgot to tell you about them, ahh…..” (he was referring to the obstacles in the game). Nathan also used different words to refer to the same skill throughout his lesson (RTO-3). For example, he interchanged the word “hit” for the word “tap” and
used the word “cross” for both the pause icon and the exit icon. It appeared that the interchanging of these terms confused both Kurt and Ella, who required additional explanation and clarification of these features of the game at different stages in the lesson.

Nathan’s teacher observations during his lesson
Nathan observed the children while they engaged with Go Jetters (RTO-3). At different stages in the lesson it appeared that Nathan noticed the difficulties his learners were experiencing with the game and attempted to respond to their needs accordingly. For example, at the beginning of the lesson, Nathan noticed Kurt was having difficulty typing the URL into the search tab at the top of the iPad, so he leant across the table and instructed him again, “tap on Safari please and type in ABCkids.net.au”. Nathan then pointed to the URL on his screen to demonstrate this.

At another stage in the lesson, Nathan noticed that Ella appeared to be unsure about what to do to collect the coins and to use the arrow function (RTO-3). Nathan leant over and tapped the pause icon on Ella’s screen. Nathan then made a decision to stop the lesson. He requested, “everyone, hit pause please”. Nathan scanned his learner’s screens to ensure they knew how to tap the pause icon, and when he was confident they had all paused their games, he explained, “you have to keep collecting the coins as you get more goes, and if you find a thing, just jump on it with the arrow”. This was the arrow pointing vertically upwards (gestural mode) that he had drawn in his lesson plan and had identified in his scaffolding guide as an important function in the game (RTLP-3; RTO-3). It appeared though, that Nathan again was having difficulty using consistent language to explain his game. He used the terms “thing” (for obstacles) and “jump” (for the tapping skill).

Nathan’s teacher questions and responses during his lesson
Nathan also responded to questions and requests made by his learners during the lesson (RTO-3). For example, Nathan instructed Kurt to “hit pause”. Kurt asked “the cross?” and Nathan responded, “no, this” (Nathan pointed to the pause icon at the top right of the screen). Nathan demonstrated this for Kurt on his own iPad and watched as Kurt confirmed which icon to tap on his own screen. Kurt asked “this one?” (Kurt pointed to the large cross in the left hand corner of the screen, which was incorrect). Nathan clarified, “no, this one”, (and again Nathan indicated the pause icon at the right of the screen on Kurt’s iPad). Kurt followed these instructions as he turned his screen to face
Nathan and tapped the icon to pause his game. He then tapped the large cross to exit the game. Kurt became frustrated as he had exited the game and posed the question to Nathan, “you hit there?” to enter the game again (pointing to the large arrow to begin playing the game) and Nathan replied “yes”.

At different stages throughout the lesson, Nathan checked in with Kurt to confirm he knew how to play the game (RTO-3). For example, he leant over and asked, “does it play now Kurt”? Kurt replied, “yes”. It appeared that Nathan was attentive to the needs of his learners, responding to their questions and clarifying information about the game.

Lesson conclusion
The lesson duration was approximately 25 minutes (RTO-3). Even though Nathan was in the role of teacher, he became engrossed in his game and it seemed he had moved from being the ‘expert’ to being a participant in the learning group (RTO-3). He was verbally interacting with his iPad (thinking aloud and encouraging his heroes to complete the mission) as he engaged in the game. It appeared the other learners were also engaged in their game and continued playing (with minimal interaction) until a ‘WELL DONE’ text appeared on Nathan’s screen. When this occurred, Nathan said to the children, “now we have completed our mission, and then you have to wait for it to load again to play another game” (RTO-3). Nathan did not make eye contact with the members of his group, and kept his eyes focused on his own screen as he spoke to them. Figure 5.5 shows the conclusion of Nathan’s lesson with the “WELL DONE” on the children’s iPad screens.

Figure 5.5 Nathan’s lesson conclusion

After the WELL DONE message appeared on the children’s screens, this appeared to be the end of the lesson. Once Nathan had completed the lesson, the children began to
interact more informally and chatted about the game and the choices they had made while playing it. For example, they compared the locations of their selected missions. This conversation was an informal opportunity for the learners to summarise their games and describe how they navigated the site, what mission they selected and how they mastered the skills and strategies to play the game.

The next section of this case study gives an overview of Nathan’s reflections about his own teaching and includes comments from Nathan’s learners about his role as teacher, and their perceptions about the group learning experience.

Sharing and reflecting with peers

Nathan reflects on his teaching
On completion of his lesson Nathan participated in a semi-structured interview (Appendix N) with the researcher in the engine room (RTSR-3).

Nathan’s initial reflections focused on his teaching skills. He commented, “I showed them how to play the game properly” and “it wasn’t hard teaching them” (RTSR-3). It appeared that Nathan understood his role as teacher giving explanations and demonstrations to his learners about the knowledge and skills required to play the game. For example, Nathan commented about the technical functions of the game:

Well first I had to show them how to hit play like tap [he demonstrated this on his iPad] and then you have to wait for it to load, and then you get to choose your mission or something, yeh and you have to tap the little play button, just about there [demonstrated this on the screen] and then you hit that and show them you have to wait for a little, I don’t know [shrugged his shoulders], thingy me bob…and then, and then you, when it tells you to tap the screen to jump them, that’s like the jump going off so don’t listen to that [he referred to the ‘ching’ noise], and you even have to tap the jump like that [demonstrated again on the screen] and then we are right. And you show them how to tap that, to jump over stuff [demonstrated this again on the screen] (RTSR-3).

It also appeared Nathan enjoyed the opportunity to learn alongside his friends saying:

I liked playing different games with my friends because when I got stuck, finding out a way to get back into the game and stuff, because when I got stuck and I couldn’t work it out they just helped me (RTSR-3).
Nathan’s written self-reflection included three dot points that described what he did well as the teacher: “saying please, not being bossy and not being dumb” (RTSR-3). It appeared that Nathan’s reflections indicated that he was aware of being collaborative with his learners. It was interesting to note that it appeared the Reciprocal Teaching experience allowed Nathan to view himself as the expert in his role by “not being dumb” while allowing him to collaborate and explore the online text alongside his peers in a supportive learning environment. Figure 5.6 shows Nathan’s written self-reflection.

![Nathan’s documented self-reflection](image)

**Figure 5.6 Nathan’s documented self-reflection**

At the end of his written reflection, Nathan drew himself jumping over one of the robots with the caption, “me jumping over the robot”. It appeared that Nathan had placed himself in the game to save the Opera House. This written reflection aligned with other data regarding the importance of using the arrows to play the game successfully (RTLP-3; RTO-3; RTSR-3). Nathan’s work sample of his drawing is represented in Figure 5.7.

![Nathan’s drawing](image)

**Figure 5.7: Nathan’s drawing**

*Nathan’s learners reflect on the experience*

Nathan’s group of learners participated in a semi-structured interview (Appendix K) with the researcher after the lesson (RTPI-3). The children’s initial comments referred
to Nathan’s positive manner and politeness as the teacher (RTPI-3). Yasmin said, “he was really kind when he did it” and Kurt commented, “he said please for every time we had to do something”. It appeared that the experience of collaborating was positive for all the learners. The children’s reflections also seemed to view Nathan as the expert. Kurt reported, “first Nathan said to click on Safari and wait for a few minutes, because it turned out a bit hard for some people” and Ella added, “Nathan taught me how to play it”.

From their reflections it appeared the children viewed Nathan as being able to clearly articulate the knowledge and skills required to play the game (RTPI-3). Kurt reported, “he said you have to press the play button and then it started playing and then he told us you have to jump over the bricks and the little robots” and Ella contributed, “he said you had to press the arrow up, and you had to press it to get more coins to help you get the Go Jetters” while Yasmin added, “I had to know how to jump … I pressed the button with the arrow going up so I can jump”.

It appeared that the children enjoyed the experience of learning together and using the technology (RTPI-3). Kurt said, “I like going on the iPad and learning new games” and Ella added, “I like knowing how to do more things on the iPad”. Yasmin added to these comments saying, “I liked this because it’s fun to tap and see the WELL DONE come from nowhere on the screen”. In all, the children’s reflections about Nathan’s lesson indicated he had a friendly and positive manner and supported them to learn to successfully engage with the game. It could be concluded that Nathan delivered a successful lesson to his peers.

Interpretive summary

Throughout this process Nathan appeared confident and capable, engaging with and becoming absorbed with his selected game Go Jetters (FGI-3; RTLP-3; RTO-3). He was observed in the group planning experience taking risks, experimenting and trialling the functions of several games on the ABCKids website, and could also support his co-learners to navigate the site successfully.

When planning and teaching his lesson, it appeared Nathan understood his role as teacher (FGI-3; RTLP-3; RTO-3). He appeared to utilise his planning time effectively, experimenting and trialling the functions within his game, and becoming competent in
order to teach his group. Nathan’s scaffolding guide indicated that he could use the reciprocal teaching strategies to guide his planning for his selected game. Nathan’s written lesson plan included drawings of the multimodal functions within his game. For example, he drew several of the icons viewed in *Go Jetters* that represented some of the modes within the game while sequentially documenting the steps to play the game (RTLP-3).

Nathan had difficulty articulating his understandings of the game’s functions (RTLP-3; RTO-3). Even though he had drawn icons representing the modes used in his lesson plan, he struggled with knowing the technical language to communicate the functions of the modes within the game, substituting words such as “thingymebob” and “ching” (while using gestures with his hands to demonstrate a sound effect).

It is worth noting that Nathan and his co-learners seemed to enjoy the collaborative setting that this experience provided, and it seemed that all the children had an equal opportunity to learn alongside each other in a socially supportive environment.

**Case study 2**

**Meet Yasmin**

Yasmin was 6 years and 7 months old at the time of the inquiry. She was the youngest child in her family having two older siblings, a brother and a sister (SI-11). Yasmin explained, “they’re really grown-ups, much older than me, they don’t live in my house”. Yasmin had limited access to technology in her home, with her mum having a work computer that Yasmin was not allowed to use. She enjoyed using the iPad at school, with her favourite game being Doodle Buddy, which she played in literacy groups (CO1).

Yasmin appeared extremely confident in the classroom setting, helping other peers to solve both social and learning problems in literacy groups (CO1). In whole class sessions, Yasmin was compliant and was observed following teacher’s directions and completing required tasks.

Yasmin’s interactions with the CAP assessment indicated she could identify basic features of the text such as the front cover and title. She understood the concept that
words carry meaning, but did not demonstrate her understanding of letters, words and simple punctuation. Yasmin could identify a capital letter “I” and the small letters “m and l” (CAP1-11).

Yasmin excitedly engaged with the ORA assessment, saying “I love computers” (ORA1-11). Yasmin was able to competently manipulate the cursor across the computer screen using the mouse. This was interesting as she did not have access to a computer at home. When asked the initial question “what do you notice on the screen?” Yasmin identified the photo, the only participant in this inquiry to do so. It appeared Yasmin’s attention was drawn to the ice cream advertisement, as she nominated this as both her favourite part of the page and what she noticed moving. Yasmin chose the title ‘On Holidays’ from the horizontal menu bar and was able to contribute a very simple sentence, “I luv my famly” to the ORA blog.

The analysed data revealed two important aspects of Yasmin’s prior knowledge and experience of online reading skills. Even though Yasmin had indicated she had minimal access to technology in the home environment, she could demonstrate some knowledge and skills when navigating an online text. Data indicated that Yasmin had limited knowledge about letters, words and punctuation when accessing print-based texts but was successful at demonstrating an understanding of some of these concepts in the online environment.

The next section of this case study provides an overview of the text Yasmin selected to teach to her peers, her documented lesson plan and a description of the literacy experience she taught to the children in her Reciprocal Teaching group. This is followed by Yasmin’s reflections on her role as teacher and her peers’ perceptions of the lesson taught by Yasmin.

**Group planning experience**

*Yasmin selects her text*

As discussed previously, the four case study children, with the researcher, engaged in a group planning experience to select a game to teach to their peers (FG1). The researcher encouraged Yasmin to use the ‘think aloud’ strategy that had been explicitly demonstrated in the intervention lessons. In this activity, Yasmin appeared competent in the skills needed to navigate the site, and appeared supportive of the other children...
Yasmin then decided on the game Hey Duggee as the text to teach at a later date to her peers. It appeared she chose Hey Duggee because she enjoyed cooking (FGI-11). She commented, “I like cooking and you have to get the fruit to make the jam; you can get lemons, strawberries, raspberries, pears but not bananas”. It also appeared that Yasmin liked the function within the game where the player is rewarded with a badge for successfully making the jam. When asked by the researcher why she had chosen the game she commented, “I got to make jam and I got heaps of badges and I got to make different fruit flavours” (FGI-11).

**Synopsis of the game Hey Duggee**

Duggee is a big, lovable dog who is the leader of an after-school club called the Squirrels. Each episode starts with Duggee welcoming the Squirrels, a bunch of curious little characters who are dropped off at the club by their parents. There are four different choices of games within Hey Duggee and two levels of competency, labelled easy and hard. There is a timing feature, represented by a digital clock that appears on the screen.
after each game. The player is required to collect the fruit and make the jam while improving their time.

The purpose of the game is to tap on all the fruit falling from the tree so the squirrels can safely climb to the top. At the conclusion, the player collects the fruit which goes into a large pot to make jam. Functions within the game allow the reader to make several pathway choices, selecting their level of competency and the type of fruit to make the jam. Another significant function of the game becomes apparent when written text appears on the screen simultaneously with an oral recording congratulating the reader on making the jam. The player then receives a badge for completing the game. Each player has the opportunity to receive four badges in each level of the game.

Reading demands of Hey Duggee for the children

If Yasmin was to be effective in her role as teacher, she needed an understanding of the multiple modes within *Hey Duggee* and how these modes interacted with the functions of the game to make meaning. Teaching this knowledge would enhance her learners’ engagement with the game. Scaffolded by the researcher, Yasmin identified the modes in *Hey Duggee*:

- the linguistic mode; the written information at the beginning of the game about its purpose, the instructions that appear during the game to make the jam and obtain the congratulations badge
- the visual mode; the images and colours used for the squirrel characters, the colours (flavours) of the fruit and the different shapes of the fruit
- the aural mode; the sounds when the game is introduced (music), the “yeh” of the squirrels when a fruit is eliminated and the sound when the fruit is selected for the jam
- the spatial and gestural modes; the layout of the game and the movement of the characters up the tree, movement of the fruit across the screen, jumping action of the characters when the player is successful (FGI-11).

Yasmin’s understanding of these modes and functions in relation to the purpose of *Hey Duggee* enabled her to successfully teach her group of learners how to engage with the game and contribute to their overall learning within the online environment.

Yasmin also needed to teach her learners the technical skills and language required to play *Hey Duggee* (FGI-11).

- access; how to access the site, open the browser and type the URL
• URL; where to enter the URL and accurately type it
• locate; how to locate the particular game within the website
• load; how to identify the visual icons indicating the game has fully loaded
• tap; how to tap to open webpages, select games and levels and collect the fruit in the game
• scroll and swipe; how to locate games and move between pages within the site
• back and forward arrows; how to control the back and forward arrow functions to make choices in the game, start the game and return to the home page
• volume; how to control the sound function (FGI-11).

Knowledge and control over the technical skills and functions of the game allowed the children in Yasmin’s group to engage more successfully with *Hey Duggee*. Figure 5.8 is an example of the linguistic mode (print and recorded voice) to demonstrate to the player the tapping skill. The player was required to tap on the large circle with the arrow to hear the recorded message.

![Figure 5.8: Linguistic mode example](image)

**Yasmin plans her lesson**

As Yasmin began to plan her lesson, it appeared she was able to transfer the knowledge she had gained in the previous activities to the task of identifying what types of information would be required for her learners to engage with *Hey Duggee*. (RTLP-11). She commented:

> You have to go in and you have to tap that button and it has to load, and we have to wait for it to load, and we can go easy or hard and we have to tap the fruit to make the jam.

Even though Yasmin knew some of the appropriate terms for talking about the functions in her game as load and tap (FGI-11), it is worth noting that she still had difficulty articulating her understandings (RTLP-11). For example, when asked why you needed
to wait for the game to load she answered, “keep pressing the fruit till you can make jam”. It was interesting to note that Yasmin, like Nathan, used physical gestures to support her explanations. As she spoke about “pressing the fruit till you can make jam” (the tapping skill required in the game), she used a finger of her right hand to continually tap the palm of her left hand to demonstrate this skill. Figure 5.9 shows Yasmin demonstrating the tapping skill as she explained its purpose.

Figure 5.9: Yasmin’s demonstrations

Yasmin was provided with the scaffolding guide with the four reciprocal teaching strategies as headings, to support her planning of Hey Duggee. The researcher was interested to observe whether Yasmin could document her understandings of the knowledge and skills needed to navigate the game Hey Duggee. Yasmin, guided by the researcher, documented:

- information his learners might need to engage with the game, for example the rules
- information about purpose, modes and functions of the text that might need to be discussed and/or clarified
- questions that might need to be posed in relation to knowledge and understandings about the key ideas or navigational pathways in the game
- important points, key ideas, or information that might need to be summarised to support his learners to successfully play the game.

Yasmin’s documented scaffold guide is shown in Table 5.3.
Yasmin’s work sample indicated she could identify and document the purpose and some functions of the game using the Reciprocal Teaching strategies (FGI-11). It was interesting to note that in her work sample, Yasmin interchanged the words ‘click’ and ‘press’ to explain the tapping skill. For example, she used the phases, ‘click on the fruit’, ‘click on buttons’ and ‘pressing buttons’ in her documentation and then orally explained, “sometimes we miss the fruit and that’s okay and we don’t get enough to make the jam” and “oh, I had to tap it, I had to tap the fruit; I hit the X on top and I had to hit the home button” (FGI-11). The knowledge and skill required to tap the fruit was important for the player to have in order to engage with this game. It appeared that Yasmin had some control over the language required to talk about her game, but required further experience to build a metalanguage to articulate these understandings to others.
**Yasmin documents her lesson**

Yasmin planned her lesson using the lesson planning guide. Unlike Nathan who used numbers to sequentially list the teaching steps in his lesson, as well as symbols and icons to represent the multimodal features of his game, Yasmin described her game in a brief recount. Yasmin started by writing the URL and the title of the text and a number 1, recounted some of the steps in the game, and then ended with a number 2. Table 5.4 shows Yasmin’s documented plan.

**Table 5.4: Yasmin’s lesson plan**

<table>
<thead>
<tr>
<th>Yasmin’s documented lesson steps</th>
<th>Scribed lesson steps for Yasmin’s lesson</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABC.Net.au</td>
<td>Hey Duggee</td>
</tr>
<tr>
<td>Jam Badge</td>
<td></td>
</tr>
<tr>
<td>1. tap and click on all the fruits and when I get to the bottom of the tree we get the instructions and make the jam. 2</td>
<td></td>
</tr>
</tbody>
</table>

It was interesting to note that Yasmin initially recorded both of the words ‘tap’ and ‘click’ in her lesson plan, then self-corrected by replacing the word ‘and’ with ‘or’ (RTLP-11). This suggests that Yasmin was still confused about what language to use for the tapping skill, as she had also previously documented the word ‘click’ in the box titled ‘clarifying’ on her scaffolding guide. The word ‘click’ had not been explicitly used in the intervention, however it appeared Yasmin could have learnt this word from the game.

Yasmin then discussed her lesson plan with the researcher and used her written
document whilst she referred to her iPad screen to explain and demonstrate the one step recorded on her plan. In exploring the site, Yasmin had discovered a page on the website which contained the instructions for the game (the researcher was not familiar with this page in the site). Yasmin copied the written instructions from this page as her lesson steps (RTLP-11). It appeared Yasmin was confident and capable of independently exploring the pages within the website.

Yasmin continued explaining the game, reading her lesson plan word for word while pointing to the icons and functions on the iPad screen with her pencil (RTLP-11). This discussion provided insights into Yasmin’s deeper understanding of the online text. For example, even though it appeared she had difficulty using consistent language to explain some skills and functions within her game, she proceeded to clearly articulate the steps a player needed to take in order to engage with the game. She explained:

Press play [pointed to the play button with the pencil]; and you just have to wait [pointed to the loading icon]; and turn the sound down [the volume was loud so Yasmin quickly used the sound button on the side of the iPad and turned the volume down]; we have to click the buttons [pointed to the large play arrow with her pencil]; now that will get you to work; keep pressing the fruits until you can make jam (RTLP-11).

Yasmin explained further:

You can make orange, pear and apple and you touch the fruit you want to make the jam flavour; then you’re done.

It was interesting to note that Yasmin used yet another word, ‘touch’, to explain the skill of tapping. She could also articulate more information about the functions of the game while simultaneously viewing the game on the iPad screen.

**Group work and reciprocal exchange by children with their peers**

**Yasmin’s lesson context**

Yasmin delivered her lesson in the engine room to her group of four learners, Nicole, Rebecca and Tayla (who were secondary participants in this inquiry) and Nathan (a case study participant). Nathan had asked to be a part of a learning group as the other three case study children had been his learners in his lesson. Yasmin positioned herself where the teacher would usually sit to deliver guided instruction. As in Nathan’s lesson, the researcher supported the children by having the iPads charged and available for use in
the engine room.

*Children’s social interactions during Yasmin’s lesson*

Yasmin appeared very confident when delivering her lesson (RTO-11). She spoke clearly and competently to the children, giving them clear and precise instructions about how to access the website and the game *Hey Duggee*. It is worth noting that while Yasmin previously had difficulty using consistent language to explain some of the skills needed to engage with the game, she used some appropriate vocabulary to explain information about the functions of the game to her learners. For example Yasmin instructed:

- Check, it’s going to load [instructed her learners to load their game]
- Press play [demonstrated the large arrow on the screen]
- We’re going to go to easy [demonstrated on the screen how to access the level of difficulty within the game]
- You have to hit all the fruit [demonstrated the tapping skill]
- Turn it down everyone [referred to the volume button on the side of the iPad].

It appeared Yasmin understood as teacher she had a responsibility to ensure all her learners successfully engaged with the game (RTO-11). For example, she stated:

- Everyone, wait for Tayla
- Now, we are just going to wait for Nathan
- Wait everyone
- Keep your heads up [observed her learners with their heads over the iPad screens].

In contrast to Nathan’s lesson, there was constant verbal interaction and collaboration between Yasmin and her learners and between the learners (RTO-11). It was worth considering that even though Yasmin was the designated ‘expert’, the children appeared to be comfortable asking each other questions, clarifying instructions and supporting each other’s learning. For example, at the beginning of the lesson, Yasmin leant over towards Nicole to ensure she could access the site and identify the loading icon. Yasmin instructed, “tap it” and tapped the loading icon for Nicole. Then as the loading bar began to load Yasmin informed Nicole, “not much to go...see” as she observed Nicole’s screen and pointed to the loading bar. Another example was when Tayla required support to access Safari and then type the URL. After Yasmin demonstrated this to Tayla (and she was successful), Tayla was then able share her knowledge to guide Nicole to access Safari and locate the game within the site. These actions are shown in
A further example of the learners supporting each other was when Nathan was having difficulty with his iPad screen and with tapping the fruit; he became frustrated. Yasmin verbally clarified her instructions about having to tap the fruit and when this was not successful, she then physically demonstrated this skill to Nathan while explaining, “tap the fruit Nathan” as she tapped her finger on the table in front of his iPad to demonstrate the skill. Nathan was still frustrated, so Yasmin instructed the other children, “now, we are just going to wait for Nathan”. The other children stopped to ensure Nathan could master the tapping skill. It appeared that this learning environment allowed the learners to collaborate, act as models for each other, and support each other’s learning while exploring the game (RTO-11).

_Yasmin’s teaching demonstrations during the lesson_

Even though Yasmin had copied from the site the only step in her lesson plan and had some difficulty using consistent language to talk about her game, it appeared that when
she moved through the steps to teach *Hey Duggee*, she could explain and demonstrate several functions of the game and technical skills to her learners (RTO-11). For example, Yasmin began her lesson by telling her group she was going to teach them to play the game *Hey Duggee*. She instructed her learners, “go into Safari”. Yasmin pointed to the Safari icon in the application dock at the bottom of the screen. Tayla asked her, “how does it come up”? Yasmin replied, “you go to Safari” (she leant over and tapped Safari on Tayla’s computer) and then she said, “and it comes up”. Yasmin then directed her learners to locate the game *Hey Duggee*. She instructed:

*Now, go to *Hey Duggee* everyone, check cause it has to load and press it, press play and we’re going to go to easy.*

Yasmin also demonstrated some functions of the iPad that were not explicitly identified in the documentation of her lesson (RTO-11). For example, the volume of the four iPads loading the game at the same time was extremely loud, so Yasmin instructed her learners to “turn it down everyone” and pointed to the sound button on the side of the iPad. Nathan commented, “I can’t even turn mine down” and Nicole asked, “how do you turn it down”? Yasmin responded by identifying the sound button on the side of the iPad explaining, “go up to the top, high, and turn it down” as she demonstrated the volume button on the side of the iPad, adding “use the button on the side”. This experience provided insights into Yasmin’s prior online knowledge concerning ‘what to do’ and ‘how to do it’ to support her learners’ technology needs. She appeared to could use her knowledge and skills of the online environment to support her learners when help was requested.

*Yasmin’s observations during the lesson*

While Nathan sat down for the duration of his lesson, Yasmin stood for most of the time during her lesson (RTO-11). This seemed to bring her physically closer to her learners and it appeared that in this position she could observe them more effectively and respond to their needs as required. Yasmin’s standing position to teach her learners in the engine room is shown in Figure 5.12.
Data indicated that Yasmin constantly observed the children while they interacted with each other and explored the game (RTO-11). At different stages throughout the lesson it appeared that Yasmin noticed the issues her learners were experiencing and could respond to their needs accordingly. For example, Yasmin was standing and scanning the iPad screens to see if everyone had accessed Safari. Rebecca, who was next to Nathan, asked him to check whether she had entered Safari correctly. She asked, “is that it”? Nathan replied “yes” and Yasmin confirmed, “good” (RTO-11).

Yasmin also responded swiftly to her observations of the learners’ attempts to engage with the game (RTO-11). For example, Nathan was having difficulty with the tapping skill and he kept tapping the screen to load his game. This resulted in his game reloading several times. He became frustrated and banged his hands on the desk on either side of his iPad, stating, “you all have to wait for mine to load again, hey.” Immediately, Yasmin instructed the group, “now wait for Nathan”. She took his iPad and loaded the game for him before returning it with the game ready to go. She then instructed the group, “you can go again” (RTO-11). The children did not seem to mind waiting for each other while they dealt with the technical issues that were hindering them all from engaging with the game simultaneously.

**Yasmin’s teacher questions and responses during the lesson**

Yasmin also responded to questions and requests made by her learners during the lesson (RTO-11). For example, Tayla initially had trouble finding the ABCKids website. Tayla posed a question to Yasmin, “how do you get in there”? Yasmin immediately responded, “you go Safari (as she identified the Safari icon) and then it will come up”.

Figure 5.12: Yasmin’s standing position
Tayla then asked, “then what do we press”? Yasmin responded again and commented, “wait for it to load and then press play”.

It was interesting to note that questions were asked, not just of Yasmin, (the expert) but also of the other learners in the group (RTO-11). While Yasmin was demonstrating how to use the sound function to the group, Nicole was supporting Tayla, and Rebecca (with Yasmin’s support) was helping Nathan. There appeared to be ongoing collaboration throughout the lesson between the members of the group. Figure 5.13 shows Tayla demonstrating to Nicole the volume button on the side of the iPad.

![Figure 5.13: Tayla’s demonstrations](image)

**Lesson conclusion**

Even though Yasmin was engaged in the game, she still continued to scan her learners’ screens to ensure they did not require support (RTO-11). Rebecca, Tayla, Nicole and Nathan were also engaged in their games, but they all seemed to complete the game simultaneously. Yasmin instructed them to “click on the fruits to make your jam”. Each learner selected a particular flavoured jam to make. This part of the game required the children to continue to use the tapping skill to place their fruit in the jam jar. They were all successful, and on completion of their game they were rewarded with a jam badge for making the jam and completing the level. Yasmin then said to the group, “now you have made your jam” and the lesson was concluded.

The children continued to interact informally with each other to summarise and describe their pathway choices in the game. They commented about their efforts to support the squirrels to get to the top of the tree, the different fruits in the game, what flavoured jam they had selected and then shared their congratulations badge. Yasmin’s lesson was approximately twenty minutes in duration.
Sharing and reflecting with peers

Yasmin’s reflects on her teaching
On completion of Yasmin’s lesson the researcher facilitated a semi-structured interview with her in the engine room (RTSR-11). The researcher was interested in Yasmin’s views about her teaching and her perceptions about her group’s learning.

Yasmin’s initial reflections focused on her teaching role. She said, “it wasn’t that easy for me because I had to wait a lot because some people didn’t get in yet” then added, “it would be soooo hard”, then added again, “I enjoyed teaching my friends”.

Further self-reflective comments revealed that Yasmin positioned herself as having a good aptitude for teaching her learners (RTSR-11). She stated, “I had to show them how to tap, and I had to show them which one to click” and added, “I said please and thank you”. It was interesting to note that Yasmin was still mixing her vocabulary for the tapping skill, using the words ‘tap’ and ‘click’.

Yasmin then completed a written reflection. She wrote, “I had to say please to Nicole, Rebecca, Tayla and I won’t forget Miss Hutton”. She then had written the word “good!” and had underlined it. It appeared she viewed herself as a successful teacher who enjoyed the experience of supporting her co-learners. Yasmin’s work sample also revealed that she enjoyed this experience (RTSR-11). She wrote “playing games!” at the bottom of her page with a very large exclamation mark and a box around the writing. When asked by the researcher to explain why she had written this, Yasmin said, “I really loved that… teaching them how to play games”. Yasmin’s self-reflection work sample is shown in Figure 5.14.
At the end of her written reflection, Yasmin had drawn her hand clicking the fruits on the iPad screen with a caption underneath “clic the froots” (click the fruits). It was interesting to note that Nathan’s drawing revealed he had placed himself in the game, whereas Yasmin drew her hand navigating the game and using the iPad screen. This is shown in Figure 5.15.

Yasmin’s learners reflect on the experience

Yasmin’s learners, Nicole, Rebecca, Tayla and Nathan participated in a semi-structured interview with the researcher after the lesson (RTSR-11). The children’s reflections indicated that Yasmin had taught them some new skills to play digital games. Nicole reported, “Yasmin showed us how to try and get the fruit” and Tayla commented, “she told us to put all the fruits in the jar”. It appeared Yasmin’s learners felt supported by their peers in the lesson and felt the opportunity to interact and learn with each other was of benefit to their learning (RTSR-11). Tayla said, “I felt comfortable, because they’re friends” and Nathan added, “when
you get stuck and you’re finding away to get back into the game, they just helped me”. Nicole also commented, “when I got stuck and I couldn’t work it out my friends just helped me” and Rebecca added, “it was fun”. These comments provided insights into the children’s perceptions of the group experience. It appeared they enjoyed the experience and felt supported in their learning.

**Interpretive summary**

Throughout this experience, Yasmin appeared to have confidence in her own capability to teach her group (FGI, RTLP-11, RTO-11). She seemed to have an intuitive understanding of a teacher’s role, and it seemed she could transfer this understanding to her role as the teacher in the group experience. Yasmin appeared to view herself as the expert, explicitly teaching the content of her lesson while creating a supportive learning environment for her learners (RTO-11).

Yasmin used several pedagogical strategies to teach her learners and to support their learning needs (RTO-11). She closely observed each learner and how they navigated the site. Yasmin was very explicit in her instructions and with her demonstrations when teaching. She responded to her learner’s questions, both collectively and individually while demonstrating the functions and the skills required to engage with the game. It appeared she could make decisions about what knowledge and skills to teach her learners ‘on the run’, even though many of these skills were not documented in her lesson plan.

Yasmin appeared comfortable with the children collaborating with each other to solve their problems to engage with the game, and she only interacted with her learners when required (RTO-11). Even though Yasmin viewed herself as the teacher, she also became involved in navigating and playing the game as a participant during the lesson, experimenting with the functions and features of the game as a learner alongside her peers. However, like Nathan, Yasmin had some difficulties with the consistent use of language to convey her understandings to her learners regarding the online reading demands of her game. It appeared that this experience was both productive and collaborative, giving Yasmin and her learners the opportunity to learn together in a supportive social environment.
Case study 3

Meet Kurt

At the time of the inquiry Kurt was 5 years and 10 months old and was the youngest student in his class. Kurt was the oldest child in his family. He had a younger sister at preschool. Kurt had a computer and an iPad at home, but rarely had parental permission to use them. He enjoyed using the iPad at school in literacy and numeracy groups and nominated the Frog Game as his favourite, commenting, “this is when you drag the numbers and make frogs do things when you get the number right” (SI-10).

Kurt appeared a very confident student. He was observed giving verbal responses to the teacher’s questioning in whole class situations and he seemed to interact positively with his peers. When he was challenged in his learning, Kurt did not hesitate to direct questions to his teacher and his peers and to himself, using a think aloud strategy (CO2; FGI-10).

Kurt engaged willingly in both the CAP and the ORA assessments. When participating in the CAP assessment, Kurt demonstrated his knowledge of concepts about print identifying the title of the book, where to begin reading, the first word on the page and left-to-write directionality. Kurt could also demonstrate his knowledge of words and letters, identifying one and two letters and one and two words. He could also identify a small letter and a full stop but had difficulty identifying, naming and understanding the function of some punctuation. For example, Kurt had difficulty with question marks, exclamation marks, quotation marks and commas (CAP1-10).

Kurt appeared excited to use the computer and to participate in the ORA assessment. He described many things he noticed in the blog as “interesting” (ORA1-10). The things he noticed on the webpage were the advertisements, the animation and the photo, which he named “the aquarium” (ORA1-10). He noticed that the photo of the aquarium was “upside down” and could give a reason regarding the purpose of the advertisements and the animation, rather than just naming them. Kurt also successfully identified the sound icon function and nominated the photo (aquarium) as his favourite thing on the webpage because “it was interesting even though it was upside down” (ORA1-10).

Kurt also contributed to the blog by choosing the story ‘In the Pool’ and writing, “I wun
a swimming ras i wun it becuse MY Buther poot his head up and i wun” (ORA1-10). This was of interest, as Kurt did not have a brother, only a younger sister.

The next section of the case study provides an overview of the text Kurt selected to teach to his peers, his documented lesson plan and a description of the literacy experience he taught as the ‘expert’ to the children in his Reciprocal Teaching group. This is followed by a summary of Kurt’s reflections on his teaching and his peers’ perceptions of the learning experience.

**Group planning experience**

*Kurt selects a text*

With the other case study children, Kurt participated in a group planning experience to select his text and plan his lesson. Kurt, like Nathan and Yasmin was encouraged to use the ‘think aloud’ strategy that had been explicitly demonstrated in the intervention lessons. During this group planning experience, Kurt was initially observed needing support to access the website ABCKids (FGI-10). Ella repeated the URL slowly for him, however once he had accessed the site he continued to have difficulties with navigating site. For example, when Nathan made comment about the location in his game saying, “I’m playing in Egypt”, Kurt responded, “I’m in nowhere”. He then placed his iPad on his lap and raised his hands, demonstrating some frustration. It appeared Kurt had difficulty transferring the knowledge and skills he was taught during the explicit intervention lessons to this experience. He sought support from the other children.

Kurt: Nathan…Nathan… excuse me Nathan [Nathan did not respond]
Kurt: Nathan, how do you make the Go Jetter move? [Nathan did not respond]
Kurt: How do you make the Go Jetter move? [using a frustrated tone]
Nathan: Push the arrow (FGI-10).

Kurt continued to have difficulty with the skills required to engage with *Go Jetters* so he decided to try another game and he sought support from Yasmin. He moved to sit next to her, observing what she was doing and then asked the question:

Kurt: How do you get in the *Hey Duggee* game Yasmin?

Yasmin began to explain this to Kurt while demonstrating this on her own iPad screen. However, Kurt’s iPad had begun to load again and he requested further support from
Yasmin.

Kurt: Hang on, can you do it on my iPad?

Yasmin took Kurt’s iPad and accessed the website and the game on Kurt’s iPad.

Kurt: Thanks Yasmin.

Kurt took his iPad and returned to where he was originally seated and began to experiment in the game Hey Duggee (FGI-10). Kurt continued exploring the site but appeared unsure of exactly how to play the game. He continued to just sit for a short while and observe what the other children were doing (FGI-10). Finally he accessed a game called Tree Fu Tom ZAP and when it loaded successfully he exclaimed, “yeh, Tree Fu Tom”! It appeared Kurt was either familiar with this game through exploring it before when working with the case study children in the intervention or watching it on television. Kurt became engrossed in exploring and navigating this game.

When Ella asked for some support with finding Tree Fu Tom ZAP, Kurt was able to demonstrate how to access the site and play the game. It seemed that once Kurt could access and become familiar with a game, he could then share his skills with his peers.

Even though Kurt was observed exploring several games, he selected the game Tree Fu Tom ZAP to teach to his learners, explaining:

I selected Tree Fruit…um… Fu Tom…ZAP because you have to press the yellow balls; I picked the game because it is a fun game and a bit interesting and it is fun to make the mushroom go down; it’s very fun to do, that’s why I like the game (FGI-10).

It appeared that Kurt had gained more confidence and competence to access and navigate this game, and had gained an understanding of some of the functions of Tree Fu Tom ZAP. This co-learning experience with his peers seemed to have supported his learning and the earlier misunderstandings and subsequent frustrations he experienced appeared to have diminished.
Synopsis of the game Tree Fu Tom ZAP

Tree Fu Tom ZAP is about an animated character Tom, who has the power to save other animated characters called the mushroom people.

The purpose of the game is for the reader to help Tom save the animated characters (mushrooms) by tapping (eliminate) on obstacles (yellow balls), so they can safely parachute to the ground. If successful, the player moves up levels within the game. These levels get progressively harder as the obstacles (balls) increase in speed and frequency. In the top-right hand corner of the screen there is a sound icon and a support icon, which the player can tap to return to a page within the site that allows them to practise the tapping skill. When the reader completes each level, they are congratulated with a WELL DONE, which appears across the screen.

Reading demands of Tree Fu Tom ZAP for the children
Scaffolded by the researcher, Kurt discussed and identified the following modes in his game Tree Fu Tom. Developing an understanding of the modes helped Kurt’s learners to understand the purpose of Tree Fu Tom. Knowing how the modes interacted in the game to make meaning was important for his learners to understand and engage successfully with the game. These modes were:

- the linguistic mode: there is limited written information; the text in the game is the title of the game and four single words ready, go and well done (these appear on the screen as the player completes the levels within the game); no oral narration
- the visual mode: images and colours used for Tom are green (so he can be disguised in the garden); the obstacles are depicted as yellow balls (like the sun) and the mushroom people have bright red and white parachutes
- the aural mode: sounds are heard as the player taps on the screen to eliminate the obstacles; there is a ‘zapping’ noise as Tom eliminates the balls; music plays on completion of the game
• the spatial and gestural modes: the layout of the game depicting the garden and sky; movement of the mushroom men floating on the screen; movement of the obstacles from the bottom and side of the screen (FGI-10).

Kurt was required to have a basic understanding of the technical skills of Tree Fu Tom, so he could guide his learners’ engagement with the game. Kurt, with researcher support, identified the following technical skills and language required to play Tree Fu Tom ZAP:

• access; how to access the site, open the browser and enter the URL
• URL; where to enter the URL and how to accurately type it
• locate; how to locate the particular game within the website
• load; how to identify the visual icons indicating the game has fully loaded
• tap; how to tap to open webpages, select games and eliminate the dangerous obstacles (balls) in the game
• scroll and swipe; how to locate games and move between pages within the site
• arrows; how to control the back and forward arrow functions to make choices in the game, to start the game and to return to the home page
• volume; how to control the sound function (FGI-10).

Figure 5.16 is an example of Kurt’s screen showing the way the space is used as the mushrooms and obstacles move across the screen. The player must save the mushrooms (moving on the screen) by eliminating (tapping) the moving obstacles.

Figure 5.16: Spatial and gestural modes example

Kurt plans his lesson
Kurt used the same scaffolding guide provided to Nathan and Yasmin to begin to plan
his lesson (RTLP-10). The researcher was interested to observe, whether Kurt could gain a deeper understanding of the functions and skills required to navigate *Tree Fu Tom ZAP* by documenting his thoughts using the reciprocal teaching strategies. Kurt’s documentation is shown in Table 5.5.

Table 5.5: Kurt’s documented scaffolding guide

<table>
<thead>
<tr>
<th>Kurt’s documentation</th>
<th>Scribed documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ABC Kids Website lessons</strong></td>
<td>Tree Fu Tom</td>
</tr>
<tr>
<td><strong>Predicting</strong></td>
<td>How to get up on tier levels.</td>
</tr>
<tr>
<td><strong>Questioning</strong></td>
<td>What do you do?</td>
</tr>
<tr>
<td></td>
<td>Tap all the honey balls to add some points.</td>
</tr>
<tr>
<td><strong>Clarifying</strong></td>
<td>Tap all</td>
</tr>
<tr>
<td><strong>Summarising</strong></td>
<td>Tree Fu Tom has to tap all the honey balls before Mr Mushroom comes up so keep tapping all the balls.</td>
</tr>
</tbody>
</table>

Kurt’s work sample in Table 5.5 revealed that he could identify the purpose of *Tree Fu Tom ZAP*, documenting “how to get up on the levels” as well as what the player was required to do to move up the levels in the game: “tap all the honey balls to get points”. He had also identified the tapping skill as an important skill to control in order to
successfully play the game. He had also identified it as something that might need clarification for his learners. It appeared Kurt had a clear understanding of the purpose of his chosen game and its rules.

In response to the researcher’s question, “is there anything else you would need to know to play this game”? Kurt replied:

You need to press the ‘x’ if you want to get out of the game, if your mum or dad say, no more iPad time, then you press the button here [pointing to the on/off button on the side of the iPad].

It appeared that Kurt, like Nathan and Yasmin, used his prior knowledge to identify some technical information he needed to operate his device; however, like Nathan and Yasmin, he also had difficulty at times using appropriate language to explain his understandings to others (RTLP-10).

**Kurt documents his lesson**

Kurt planned and documented his lesson using the lesson planning guide. This is shown in Table 5.6.

Table 5.6: Kurt’s lesson plan

<table>
<thead>
<tr>
<th>Kurt’s documented lesson plan</th>
<th>Kurt’s scribed lesson steps</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Documented Lesson Plan" /></td>
<td><img src="image2" alt="Scribed Lesson Steps" /></td>
</tr>
</tbody>
</table>

- **Tree Fu Tom Zap!**
  You press the yellow balls to make the mushroom go down and I am on level 9.

- **It is fun to tap the balls and make the mushroom go down.**
  Go to the App store. Check with your mum if it’s ok and press the x to get out.
It was interesting to note that Kurt’s written text had only two or three words to each line (perhaps this was how he viewed printed text in websites) and it appeared he had focused on documenting the safety aspects of acquiring parental permission when using a device. Kurt could, however, orally expand on his written explanations (RTLP-10). For example, when explaining his plan, Kurt read the plan word for word, but when questioned by the researcher about “what the player would need to know to play the game” Kurt, unlike Nathan and Yasmin who used both lesson plan and screen, elaborated only using his lesson plan as an imaginary iPad screen to support his explanations. He picked up his pencil and tapped it on the planning sheet to indicate where the mushrooms would be on the screen and then he tapped the imaginary balls with his pencil on his document, as if they were moving across the screen. He explained in detail what the player would be required to do, using hand gestures and his pencil to demonstrate. This is shown in Figure 5.17.

![Figure 5.17: Kurt’s demonstration](image.png)

Kurt explained:

The mushroom would be here [taps his pencil on the lesson plan], and that’s Tree Fu Tom, that’s Tom there [pointing his pencil], and then when the ball comes up [moves his pencil in an upward motion] you press it [taps the pencil again] and all the balls come up.

After being asked by the researcher how he would teach this information to his learners, Kurt then picked up his iPad and summarised his explanation:

Tap the ball if you want more money; you would have to tell them not to tap Tree Fu Tom or the mushroom, you just tap the balls; and when you finish the game it says WELL DONE, when you finish your level … it says completed WELL DONE, and
when you finish the real game it has all the balloons go up and it has three WELL DONEs; and the levels get faster as you play them; levels one and two, well they’re very easy.

Figure 5.18 shows Kurt using his iPad to demonstrate the skills required in his game to the researcher. It appeared that Kurt was prepared and ready to teach his game to his peers.

Figure 5.18: Kurt’s lesson preparation

**Group work and reciprocal exchange by children with their peers**

*Kurt’s lesson context*

Kurt taught his lesson in the engine room to his group of three learners, Katie, Ben and Tim who were secondary participants in this inquiry (RTO-10). Kurt positioned himself where the classroom teacher would usually sit to deliver guided instruction. As in the other lessons, the researcher had provided charged iPads in the space ready for use.

*Children’s social interactions during Kurt’s lesson*

From the introduction of his lesson, Kurt provided multiple opportunities for social interactions between his learners while teaching them how to navigate the game *Tree Fu Tom ZAP* (RTO-10). For example, initially Ben was having difficulty accessing the website and accurately typing the URL. Kurt, Tim and Katie all contributed some support for Ben, either through oral instructions or through demonstrations on an iPad. Another example was when Ben was having difficulty with the skill of tapping the
yellow balls. All the children stopped playing their games to observe Kurt demonstrating this skill again to Ben. Kurt requested Ben to “tap gently” on the balls (RTO-10). Kurt leant over to demonstrate this skill on Ben’s screen, but Ben gently brushed Kurt’s hand away. Kurt seemed unfazed by Ben’s action and it seemed he understood that Ben wanted to experiment in the game independently. The other children also watched Ben adjusting his finger pressure to tap on the screen and did not return to engage in their game until Ben was successful at this skill. It appeared the children viewed themselves as co-learners in this setting, developing their skills and knowledge to successfully play the game together.

Another example of the positive social interactions during the lesson was when each child completed a level within the game and the written text WELL DONE appeared across their screens (RTO-10). This occurred at various times throughout the lesson, as each child worked through the levels of the game independently. For example, while Tim was on level seven, Ben was on level four. When someone completed a level they all raised their arms and cheered “YA” together. This became a pattern and part of the social interactions throughout the lesson.

At the conclusion of the lesson, all the children shared in conversation, informally summarising their learning about the features of the game and sharing their level of achievement (RTO-10). Ben reported, “I got to level 10” and Tim exclaimed, “I got up to level 12” and Kurt added, “I got up to level 12 as well”. It appeared the children’s social interactions were positive and collaborative, supporting each participant in the group learning experience.

*Kurt’s teaching demonstrations during his lesson*

Even though he was ready to demonstrate how to open the browser Safari on his iPad, Kurt introduced his lesson by giving his learners information about the rules for playing the game (RTO-10). This led to some confusion, as the children had not yet accessed the website. Kurt checked himself and realised he had not shown the learners how to access the website. It appeared he was aware of his role as the ‘expert’ in this setting, and that he needed to be flexible in his approach to support his learners.

Kurt instructed:

> You have to tap the yellow balls, and that is easy to do, you have to tap the yellow balls to get to another level, and you start with ... oh ... sorry ... [paused, appealed to the researcher] ... you have to press on Safari first and type in [www.ABCKids.au](http://www.ABCKids.au) and then
It appeared that Kurt could respond appropriately to his learners’ needs (RTO-10). For example, when Ben was having difficulty accessing the site and accurately typing the URL, Kurt immediately moved his iPad over in front of Ben, so he could copy the URL. Kurt also recited the URL slowly while Ben typed. Kurt waited for Ben to successfully complete this instruction and did not proceed further with the lesson until he had observed that all the children had successfully accessed the site. Another example of Kurt’s heightened awareness of his teaching role was when all three children were having difficulty scrolling the pages within the site to locate the game ZAP within *Tree Fu Tom*. Kurt demonstrated the skill of scrolling the screen to search for the game ZAP on each individual child’s iPad. It was observed that Kurt continued supporting children throughout the lesson with the game’s functions on a ‘needs’ basis for each child participant.

In another time in the lesson, it appeared that Ben was still having difficulty with the tapping skill (RTO-10). He appeared frustrated as he couldn’t tap the yellow balls as quickly as the other children, who had moved rapidly up the levels, and he remarked, “I can’t do it … I can’t do it Kurt”. It was interesting to note that all the children stopped playing the game to observe Kurt’s interaction with Ben. Katie leant toward Ben to observe what was happening on his screen, while Tim leant over and tapped a ball on Ben’s screen. Kurt leant towards Ben and provided verbal advice, “just tap gently … you need to tap the balls gently” (RTO-10). When it appeared Ben was ‘back on track’ with controlling the tapping skill, all the children returned to playing their own games. It appeared this setting allowed them to view themselves and each other as co-learners in the group experience.

Like Nathan, Kurt’s role changed during the lesson from teacher ‘expert’ to participant (RTO-10). As the lesson progressed, his interactions with the children became more informal and the language he used changed from instructions/requests to more general comments as a player of the game. For example, at the beginning of his lesson some of Kurt’s instructions were “wait for it to load”, “tap the balls” and “press the x”. Towards the end of his lesson, his language changed to more general participant’s comments like, “I made it”, “I’m up a level” (with a fist pump) and “Yay … next level”. This shift in Kurt’s role was an important consideration in this group experience.
Kurt’s teacher observations during his lesson

Kurt was very attentive to his learners’ needs and observed them closely, particularly at the beginning of the lesson when the children were experimenting and becoming familiar with technical skills and the game’s functions (RTO-10). He scanned the screens of his learners, ensuring they had accessed the site and could navigate the game. As the lesson progressed, it did appear that Kurt’s observations of his learners lessened, as he became engrossed in playing the game on his own iPad. For example, at the beginning of the lesson, Katie couldn’t locate the game ZAP but didn’t request help. She appeared puzzled. Kurt noticed this and immediately leant over, scrolled Katie’s screen until he located ZAP for her. Another example was when Tim was helping Ben access the website, explaining to him that it was “loading time” (RTO-10). Tim’s iPad had already loaded the site and Kurt had noticed this, however Tim was giving his attention to Ben. So Kurt learnt over and scrolled Tim’s screen and found the game ZAP and tapped on it to load the game, ready for him to begin the game when he had finished supporting Ben. Kurt then moved his attention back to Katie, checked if her game had loaded, and then tapped her screen to load the game for her.

Ben required high levels of support during the lesson (RTO-10). Kurt was attentive to Ben, and with the other children’s help, supported him to access the site, select, load and navigate the game. However, as discussed earlier, when the lesson progressed, Kurt became engaged in playing his own game, and his role appeared to change from teacher to participant. It was interesting to observe that when this happened, Tim began to give Ben the support he required, responding to his questions and confirming some of his comments. It appeared that the children viewed themselves as co-learners, trialling and experimenting with their online skills together to support each other to successfully play the game.

Kurt’s teacher questions and responses during the lesson

Kurt’s learners asked him questions, as well as directing questions to each other as co-learners in this experience (RTO-10). It appeared Kurt responded to his learners’ questions appropriately and in a timely manner during the lesson, as did the other children when asked a question. For example, when Ben was getting frustrated because he was having difficulty typing the URL, Kurt responded by slowly reciting the URL to Ben. Ben also had difficulty with tapping the obstacles and exclaimed, “I can’t do it Kurt”. Kurt immediately responded by telling him to “tap the balls gently”. There was a high level of verbal interaction and collaboration throughout this lesson, with all
participants questioning, responding and clarifying information to support each other’s learning.

**Lesson conclusion**

Ben, Katie, Tim and Kurt all continued to engage with the game, but none of the children completed all the levels to reach the end. The researcher indicated to Kurt that his lesson time was finished. Kurt concluded his lesson by telling the children, “when you have completed all the levels, the balloons all go up and you get three WELL DONEs on your screen” (RTO-10). The children accepted that this was the conclusion of the lesson and exchanged comments about the game and compared the levels they had achieved. Kurt asked, “what did you get up to”? Tim explained “I got up to level 12” and Ben responded, “I just got up to 10”. It appeared they all enjoyed the game and the experience whilst developing skills and knowledge as co-learners (RTO-10).

**Sharing and reflecting on teaching**

*Kurt reflects on his teaching*

On completion of Kurt’s lesson, the researcher facilitated a semi-structured interview with Kurt in the engine room (RTSR-10). Kurt’s initial reflection focused on his experience of teaching his friends *Tree Fu Tom ZAP*. Kurt reflected that “it was a fun thing to do” and that it was a “fun game”.

Kurt also focused on his responsibilities as teacher (RTSR-10). He acknowledged he could respond to questions his learners asked him during the lesson and said that he had explained “how to tap the balls, only once” and “when you finish the real game, all the balloons go up and tell you WELL DONE”. It appeared that Kurt was now more familiar with the knowledge and skills needed to play the game and could explain these skills to others.

Kurt also responded to his teaching in writing and/or drawing. Kurt’s self reflection work sample is shown in Figure 5.19.
Kurt’s work sample indicated that he understood his role as the expert in this experience. He wrote, “when I was being a teacher I was good at pressing the balls”. Kurt had also documented that he had enjoyed this experience writing, “I loved teaching my friends”. Kurt had highlighted this sentence by drawing a large box around it.

At the end of his written reflection Kurt had drawn himself tapping the balls to save the mushrooms. This is shown in Figure 5.20. It was interesting to note that like Yasmin, Kurt had positioned himself outside of the game. Kurt’s drawing showed enormous fingers extending to the iPad screen, tapping the mushroom people with a caption “I love this game”. It appeared Kurt understood the importance of mastering the tapping skill to engage successfully in the game.
Kurt’s learners reflect on the experience

Kurt’s peer group, Katie, Ben and Tim, participated in a semi-structured interview with the researcher in the engine room after the lesson (RTSR-10). The children’s initial reflections focused on the nature of their engagement with the game. Tim reported that when he “first started, it was hard”, and Ben agreed, stating “when I started it was very hard cause the balls kept going”. The children also identified barriers to their success in the game. For example, Ben explained that he was “pressing the screen too hard” and Katie warned against “touching those monster things”.

The children also reflected on Kurt’s aptitude for teaching, and it appeared he was able to help them overcome their challenges (RTO-10). Tim explained, “then Kurt told me and I learned a lot”. Ben described a similar experience, “Kurt told me I had to press softly”, and Katie indicated Kurt had taught her “how to touch the yellow balls”. In all, the children’s reflections about Kurt’s lesson indicated that he was able to respond to each child’s learning needs.

Interpretive summary

During this process, Kurt appeared determined to be successful in his ability to navigate
the digital game. During group planning activities Kurt was observed constantly asking his peers (and the researcher) questions about the functions and skills needed to navigate the website and explore the games (FGI-10; RTLP-10; RTSR-10). He was tenacious in his quest to gain information and knowledge to navigate the online context successfully.

During lesson planning activities, Kurt was seen to take risks in his learning (FGI-10; RTLP-10). It appeared at times that Kurt became frustrated when it was difficult for him to navigate the website as easily as the other case study children. However, he continued to persevere until he had grasped a particular skill or gained information about a function within a game.

It appeared Kurt’s learners viewed him as the teacher in the lesson and it seemed Kurt also viewed himself as the ‘expert’ in this experience. When teaching his lesson, Kurt’s confidence appeared to grow as he worked through the steps of his lesson, while being supported by his participants. In his reflections, Kurt referred to the teaching he had delivered several times and documented “he loved teaching his friends” (RTSR-10).

Data indicated that the reciprocal experience allowed Kurt to create a learning environment where all children felt comfortable to learn together (RTO-10; RTSR-10). At the beginning of his lesson Kurt acknowledged that he had neglected to give the children the initial information to access the game. This appeared to indicate to the children that this experience was about learning together, through productive collaboration to solve the demands of the text. Kurt was aware of and responded to his learners’ needs and seemed to encourage collaboration between his learners. It seemed that Kurt had learnt from his own prior knowledge about feeling frustrated when he initially began to navigate the website and was observed showing empathy and understanding towards his learners who were having difficulty. He appeared very patient with them, especially Ben who required high levels of support to be successful at engaging with the game. Kurt also appeared to value each learner’s successes and this was evident when the children were sharing their achieved levels at the end of the lesson.

Like Nathan and Yasmin, Kurt had difficulty articulating his understandings of the game and its functions. However, it appeared he was very aware of the importance of cyber safety and referred several times to gaining parental permission to use a device. It
appeared Kurt had delivered a successful lesson to his group of learners.

Case study 4

Meet Ella

Ella was 6 years and 6 months old at the time of the inquiry. She was the middle child in her family, with an older sister in Year 4 and a younger brother at preschool. All three children in Ella’s family had their own iPad and Ella’s mum owned a computer. Ella was the only case study child who owned her own device at home. She liked playing games on her iPad, but her favourite activity was, “writing poems on my iPad”. Ella was allowed to access her iPad before school and on the weekend (SI-12).

During classroom observation, Ella appeared very shy and timid. She was observed following teacher directions and completing tasks, but didn’t contribute to any class discussions or verbally respond to any teacher questions. In Literacy Groups she worked independently, reading books and playing word games (CO1).

Ella appeared tentative when engaged in both the CAP and ORA assessments and looked for guidance before she responded to most questions. When participating in the CAP assessment, Ella could identify that print conveyed a message and demonstrated her knowledge of concepts regarding directionality of print and one-to-one matching of words with her finger, while the researcher read them aloud. Ella could identify upper and lower case letters and commas, but could not identify changes in line, word and letter sequences and punctuation such as full stops, question marks, exclamation marks and speech marks (CAP1-12).

Ella’s responses in the ORA assessment indicated she transferred her knowledge of print-based text to the online setting, matching known print-based concepts to the concepts she was noticing on the webpage. For example, she could identify that print conveys a message, and responded to a question about the purpose of the animation by commenting, “they show you what is happening at the zoo” (‘At the Zoo’ is the title of the blog story being read by the researcher). She also responded to a question about the purpose of the horizontal menu bar saying “it helps to tell you what it is going to be about with words” (ORA1-12).
Ella chose the blog title ‘At School’ and contributed the sentence “Tara you ara a good sister you ara a loving sister” to the blog (ORA1-12). This appeared not to relate to the theme of the title, however Ella commented that her sister “walked to school with me” (ORA-12).

The next section of the case study provides an overview of the text Ella selected to teach to her peers, her documented lesson plan and a description of the literacy experience she taught to her group of learners as the ‘expert’ in her Reciprocal Teaching lesson. Below is a summary of her reflections on her teaching and her learners’ perceptions of the group learning experience.

**Group planning experience**

*Ella’s text selection*

Ella, like the other case study children was encouraged to use the ‘think aloud’ strategy that had been explicitly demonstrated in the intervention lessons. While exploring and discussing the website in the group planning activity, Ella was initially observed being quite tentative when manipulating and using the iPad (FGI-12). This was interesting as she owned her own personal device. She watched Yasmin, Kurt and Nathan for a short while before engaging Yasmin in conversation. Ella timidly asked, “is that how you play?” (pointing to the play arrow on the game *Hey Duggee*). Yasmin moved over to sit beside Ella and the two children began to share and discuss this game, using Ella’s iPad.

- Ella: What do you do now?
- Yasmin: We have to click it … the buttons [Yasmin tapped the fruit on the screen]
- Ella: Is that how you play? [Ella then had a turn of tapping the fruit on the screen]
- Yasmin: Yep, keep pressing the fruit until you can make jam [Yasmin kept observing Ella]
- Yasmin: Mm … that’s good [watched Ella tap the fruit]
- Ella: How do you make the jam?
- Yasmin: You tap the fruit until they get into slices.

Ella continued trialling the functions in *Hey Duggee* and it appeared she enjoyed this game and felt comfortable and confident engaging with it. Unlike the other children, she interacted with it for the entire activity (FGI-12). For example, when asked to consider what game they would like to select to teach to their peers, Ella immediately nominated *Hey Duggee*. Ella appeared to have gained more confidence and competency with
navigating the game and she explained, “it’s a fun game and I thought I could give lots of instructions … and it’s a fun game to play” (FGI-12). It appeared that Ella was already focused on her role as the ‘expert’ in her future lesson commenting she could give, “lots of instructions”. Like Yasmin, *Hey Duggee Jam Badge* was the game she selected to teach the other children in a later lesson.

**Synopsis of the game Hey Duggee Jam Badge**

*Duggee*

Duggee is a big, lovable dog and he's the leader of an after-school club called the Squirrels. Each episode starts with Duggee welcoming the Squirrels, a bunch of curious little characters who are dropped off at the club by their parents. There are four different choices of games within *Hey Duggee* and two levels of competency, labelled in the game as easy and hard. There is a timing feature represented by a digital clock that appears on the screen after each completed game. The player is required to collect the fruit and make the jam while improving their time as they engage in the levels of the game.

The purpose of the game is to tap on all the fruit falling from the tree so the squirrels can safely climb to the top. At the conclusion, all the collected fruit goes into a large pot to make jam. The reader has opportunities to make choices in the game by selecting their level and their particular type of fruit to make the jam. Another significant function of the game becomes apparent when written text appears on the screen simultaneously with an oral recording congratulating the reader on making the jam. The player then receives a badge for completing the game. Each player can receive four badges in each level.

*Reading demands of Hey Duggee for the children*

If Ella was to successfully teach *Hey Duggee* to her learners she needed an understanding of the multiple modes of the game and how the modes used in the game interacted to support her learners to make meaning. Ella, with researcher support discussed and identified the following modes in *Hey Duggee*:
• the linguistic mode; the written information about the purpose, the instructions to make the jam and the congratulations badge
• the visual mode; the images and colours used for the squirrel characters, the colours (flavours of the fruit) and shapes of the fruit
• the aural mode; the sounds made when the game is introduced (music), the “yeh” of the squirrels when a fruit is eliminated and the sounds when the fruit is selected for the jam
• the spatial and gestural modes; the layout of the game in a garden, the movement of the characters up the tree, the movement of the fruit across the screen, the jumping action of the characters when the player is successful (FGI-12).

Ella, like Yasmin, needed to be familiar with the technical skills and language so she could teach it to her group of peers. Scaffolded by the researcher, Ella identified the following:
• access; how to access the site, open the browser and enter the URL
• URL; where to enter the URL and how to accurate type it
• locate; how to locate the particular game within the website
• load; how to identify the visual icons indicating the game has fully loaded
• tap; how to tap to open webpages, select games and collect the fruit
• scroll and swipe; how to locate games and move between pages within the site
• arrows; how to control the back and forward arrow functions to make choices in the game, to start the game and to return to the home page
• volume; how to control the sound (FGI-12).

Knowledge and control over these skills helped Ella’s leaners to successfully engage with the game. Figure 5.21 shows Ella’s screen with an example of the visual mode in her game, including the images, colours and font.

Figure 5.21: Visual mode example
Ella plans her lesson

Ella used the same scaffolding guide and headings that supported the other case study children’s lesson planning, and documented her thoughts about the game *Hey Duggee*. Ella’s scaffolding guide is shown in Table 5.7.

Table 5.7: Ella’s documented scaffolding guide

<table>
<thead>
<tr>
<th>Ella’s reflections</th>
<th>Scribed reflections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hey Duggee Jam Badge</strong></td>
<td></td>
</tr>
<tr>
<td>Making</td>
<td></td>
</tr>
<tr>
<td>They have to predict how to make the jam and know how to go up the tree.</td>
<td></td>
</tr>
<tr>
<td>How do you tap the iPad to jump? How fast do you go?</td>
<td></td>
</tr>
<tr>
<td>You go as fast as you can go. You need to hold down and jump where you want to go.</td>
<td></td>
</tr>
<tr>
<td>The squirrels go up the tree to collect the fruit and then they tap on the fruit and then you make the jam.</td>
<td></td>
</tr>
</tbody>
</table>

Ella’s work sample shown in Table 5.7 revealed that initially, she could identify the purpose of *Hey Duggee*, as she documented, “collect the fruit” and “make the jam”. It also appeared that Ella had some explicit understandings of the features of the game, as she wrote “go up the tree”, “collect the fruit”, “you go as fast as you can”, “make the jam” and could identify some of the skills required by the children to play the game such as “tap on the fruit” and “hold down and jump”. This was interesting to note, as Ella initially seemed timid about trialling the game and required significant support from Yasmin when experimenting with the game.
**Ella documents her lesson**

Ella documented her lesson sequence using the lesson planning guide (RTLP-12). Ella explained, “you would have to know how to find *Hey Duggee* and how to tap the things and swipe”. Ella’s documented lesson sequence using the lesson planning guide is shown in Table 5.8.

Table 5.8: Ella’s lesson plan

<table>
<thead>
<tr>
<th>Ella’s documented lesson plan</th>
<th>Ella’s scribed lesson plan</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td><strong>ABC.net.au</strong></td>
</tr>
<tr>
<td><img src="image2.png" alt="Image" /></td>
<td><strong>Hey Duggee Jam Badge Making</strong></td>
</tr>
</tbody>
</table>

1. Find ‘Hey Duggee Jam Badge Making’ and tap on the round button.
2. Tap the fruit as it goes along the tree and get as many as you can.
3. Then put all of the fruit into its jar and if you don’t have enough fruit that are on the recipe you have to try and get more so you can make the jam so then you can have your jam.

Ella discussed her lesson plan with the researcher and sequentially explained the steps required to play the game (RTLP-12). It was interesting to note that she accessed the game on her iPad screen and began to demonstrate to the researcher what was required to play it by explaining some of the features, “and if you’re only beginning you press easy level”, “as you go along it gets harder”, “turn the sound down”, “move up the tree”, “it tells you how fast you have done it” and “it tells you your best time”. Unlike the other case study children who had used their lesson planning guide to explain the
steps of their lesson, Ella discussed her lesson steps without reference to her documented lesson planning guide.

Ella then explained some of the skills required to play the game, “press on the round button to get into it”, “tap on easy or hard”, “then tap the fruit”, “you don’t have to tap it, you have to slide it down” and “slide the fruit”. It appeared she understood the purpose and rules of the game and was familiar with its layout and also had developed her language to talk about her game. It appeared her engagement in the planning activities had built her confidence and capacity and she seemed ready to teach her learners how to play Hey Duggee Jam Badge.

**Group work and reciprocal exchange by children with their peers**

*Ella’s lesson context*

Unlike Nathan, Yasmin and Kurt, Ella delivered her lesson outside in the Collaborative Outdoor Learning Area (COLA) to her learners, Matthew, Jamie and Ann who were secondary participants in this inquiry (RTO-12). The COLA was regularly used as a learning space for the year one children. The children were seated on the ground with Ella positioning herself at the front of a semicircle of learners. Ella’s lesson went for approximately twenty minutes. Figure 5.22 shows Ella in the COLA with her peer group.

![Figure 5.22 Ella and her peer group](image)

*Children’s social interactions during Ella’s lesson*

During Ella’s lesson, the children asked Ella questions as part of ongoing dialogue between them (RTO-12). For example, Matthew asked “do you go easy or hard”? Ella replied, “we’re going easy at first” and Jamie responded, “that’s good”. Ella seemed to
enjoy giving instructions and answering the questions her learners asked her (RTO-12). For example, Ella informed her learners, “if you need help, just ask”. Matthew asked, “how many squirrels do you get?” and Ella responded, “you need to tap the fruit not the squirrels”. Ann completed her first game and asked Ella, “what do you do now?” Ella stopped her group and explicitly demonstrated how to make the jam, instructing them, “now slide the fruit to make your jam”. Ella had turned her iPad screen towards the children so they all could view it. The children all seemed to quickly master the technical skills (tapping, swiping, scrolling) needed to interact with this game (RTO-12).

It was interesting for the researcher to observe the children in a more relaxed context than the classroom. The children moved freely throughout the lesson, changing their sitting positions (crossed-legged, laying down on their stomachs) as well as their seating arrangements (moving to sit alongside different children). Data indicates that the children stood up to observe each other’s screens and moved forward or sideways to ensure they could see Ella’s demonstrations (RTO-12). It was interesting to note that Ella began the lesson in front of the group, but gradually moved to join her learners in the semicircle. It appeared the physical space of the COLA supported the children’s interactions with each other allowing opportunities for high levels of industrious collaboration as they engaged with the game.

_Ella’s teaching demonstrations during her lesson_

It appeared Ella understood her teaching role and could demonstrate to her learners the features and rules of the game and how to navigate it (RTLP-12; RTO12). It appeared she understood the role of ‘expert’ and implemented some pedagogical strategies to support her learners. For example, she turned her iPad screen to face the children so they could see her explicit demonstrations as she moved sequentially through her lesson (RTO-12). Ella began, “we’re playing _Hey Duggee Jam Badge_ and you click here”, “if you need help, just ask”, “we’re going to do easy first”, “we’re now going to press the play button” and then “tap the fruit” (RTO-12).

Ella’s verbal instructions accompanying her demonstrations appeared to be clear and concise (RTO-12). It was noticed that when clarification was required, Ella could respond to her learners’ concerns. For example, Michael was confused about the rules of the game. He was tapping the squirrels instead of tapping the fruit. He became frustrated and asked Ella, “oh, what do you do?” Ella moved over to sit in front of
Michael, turned her screen around to face him and demonstrated the tapping of the fruit for him on her screen. She then leant forward and tapped the fruit on his screen, ensuring he understood the purpose of the text (RTO-12).

_Ella’s teaching observations during her lesson_

Ella did not engage in the game as a player, but kept her iPad screen turned towards her leaners as she demonstrated each step and observed the children as they engaged with the game (RTO-12). She moved closer to her leaners to observe their screens as she leant forward. It appeared Ella was focused on her leaners’ needs (RTO-12). For example, Ella made comment, “let’s just wait for Ann, her iPad is slower” and “you have to press the button, Jamie” (she leant over and tapped Jamie’s screen). Ella waited for her leaners to reach the jam-making feature of the game before asking the question, “are we nearly all ready to make the jam?” It appeared Ella wanted to demonstrate this feature to them all together. Matthew tapped the exit button by mistake and exclaimed, “oh man” while holding his head between his hands. He appealed to Ella, “yours is different to mine”. Ella observed his screen and explained to him that he had exited the game. She instructed, “tap the easy again to play” (RTO-12).

Once all the children were ready to make the jam, Ella turned her screen towards them again and demonstrated the skill for making the jam (RTO-12). All the children were successful at achieving this and received their first jam badge. Ann was first to make her jam and Ella congratulated her, “you made it” (RTO-12).

_Ella’s teacher questions and responses during her lesson_

Ella’s questions and responses during the lesson supported her leaners to engage with the game successfully (RTO-12). At the beginning of the lesson Ella informed them all, “if you need help just ask”. Ella was very much aware of her role of supporting her leaners to navigate the game and her verbal interactions with the children seemed positive and supportive. For example, Ella said, “try and find it, don’t worry if you can’t”, “do you need help Ann?”, “press it again Matthew” and “are you all ready?” (RTO-12).

_Lesson conclusion_

The children sequentially worked through the game and all of them received a jam badge. At this stage of Ella’s lesson, the children congratulated each other on receiving their jam badge (RTO-12). Ella also congratulated them and commented, “you have
completed the game” and “you all got a jam badge”. It appeared Ella was pleased with her learners’ efforts and her role as the teacher.

**Sharing and reflecting with peers**

*Ella reflects on her teaching*

On completion of Ella’s lesson, she participated in a semi-structured interview in the COLA area with the researcher (RTSR-12). Ella’s initial reflection focused on her skills as the teacher. It appeared Ella understood her role, claiming, “I had to show them, step by step what to do”. Ella also added, “even though I was teaching they helped me” and “they were doing what I was telling them to do” (RTO-12).

Ella also reflected on herself as a learner in this experience and it appeared she could transfer her prior knowledge of the website as well as her initial feelings about the experience, to her role as teacher (RTSR-12). She provided insights into her own initial learning experience commenting, “when I was first on the iPad I really didn’t know what buttons to press and it wasn’t that easy for me”. It appeared that Ella had some understanding of her learners’ initial attempts to navigate *Hey Duggee* and to know “what buttons to press” to engage with the game.

It also appeared Ella was aware of her responsibility to help her learners to deal with their challenges (RTO-12). She explained:

> It took a little while cause some of the iPads were reloading and we had to wait for each other ‘cause they were getting mixed up with pushing the wrong buttons, and I really needed to show them which buttons to push.

Ella added:

> I had to think about things I had to teach them next, so they would know what to do and they wouldn’t get muddled up.

Ella’s comments gave insights into her thoughts about the opportunity this experience provided her learners to collaborate and learn together (RTO-12). She seemed to view this as a success of her teaching. She claimed, “cause they were listening to me they got to complete their game” and “they got their jam badge”. It appeared Ella enjoyed working with her peers, claiming, “friends can help you” and “they can help you” (RTO-12). Ella also had the opportunity to reflect on her teaching by completing a
written reflection and a drawing. Ella’s self-reflection is shown in Figure 5.23.

<table>
<thead>
<tr>
<th>Ella’s written reflection</th>
<th>Ella’s scribed reflection</th>
</tr>
</thead>
</table>
| ![Image of Ella’s handwritten reflection](image1.png) | 1. Telling them what to do  
2. Saying please to the people  
3. Not being silly  
4. Not being rude  
5. Not being bossy GOOD  

  Them being nice to me, and them respecting me.  |

Figure 5.23: Ella’s documented self-reflection

Ella’s documented self-reflection provided some insights about how she viewed her teaching role (RTSR-12). Her list of comments indicated she understood the role of the expert’s contributions in this experience. For example, she wrote, “telling them what to do” but “not being bossy”. It could also be considered that Ella valued her learners’ respectful attitudes (RTSR-12). She had written the word GOOD in bubble writing next to the dot points and then at the bottom of her page wrote, “them being nice to me and them respecting me”.

At the end of her reflection Ella had drawn herself in the game *Hey Duggee*. This is shown in Figure 5.24. Like Nathan, Ella had positioned herself in her game, drawing herself moving up the tree, attempting to avoid the fruit to arrive at the top, just like the squirrels. This was interesting to note as Ella, unlike the other case study children remained focused on her role as teacher throughout her lesson, and did not engage with the game as a participant.
Ella’s learners reflect on the experience

After the teaching experience, Matthew, Jamie and Ann participated in a semi-structured interview in the COLA with the researcher (RTSR-12). The children’s initial reflections focused on Ella and her capability in the role as teacher (RTSR-12). Ann reported that Ella showed her, “how the squirrels go up the tree” and Jamie added, “she taught me how to play the game”. Matthew commented that he thought, “she did really well, actually”.

The children also commented on Ella’s demonstration of the skills needed to support them to navigate the game (RTSR-12). Ann commented, “she showed us how to press the buttons” and Jamie said, “she showed us how to tap the fruit to make the jam”.

The children also reflected on the collaborative nature and enjoyment of engaging in the experience together (RTSR-12). Ann commented that, “she helped others” and Jamie added, “it was fun to help each other”. Matthew explained, “if you don’t know what to do you can ask your friends” and then he added “it was really fun”.

The children’s reflections provided insights into their thoughts about this experience. In all, it appeared they viewed Ella as the ‘expert’ and enjoyed the collaborative opportunities this experience offered.

**Interpretive summary**

At the outset of this inquiry, Ella seemed to lack the confidence to engage with the
online context. This was interesting as Ella was the only case study participant who owned a device and who was allowed daily access. However, she did reveal that her favourite activity on the iPad was writing poems, which required her to create a text, using keyboard skills rather than navigating an online text (SI-12). Her lack of confidence and competency to initially navigate a website was also evident in the group planning experience, where she was encouraged to independently explore the ABCKids website. Ella had to seek guidance from Yasmin and Kurt at different stages in this activity, and it was interesting to note she selected the same game as Yasmin to teach to her group of learners. It appeared this choice made her feel more secure.

However, as the process of this inquiry unfolded, it seemed to empower Ella and she gained confidence and competence in her knowledge, her skills to play the game and her ability to teach her group. A significant experience for Ella in this process was when she was required to reflect on the functions and the rules of her selected game in order to teach them to her group. Surprisingly, Ella could articulate her understandings of the skills the children would need to play the game, and used appropriate language to do so.

Additionally, when Ella taught her lesson, her explanations to the children were clear, sequential and timely to their needs, supporting them to make meaning from the game. Her own reflections indicated that she was pleased that the children respected her in her role. Perhaps this had been a positive social experience for Ella, an experience where she knew she had the skills needed to fulfil the responsibilities involved.

**Summary of cases**

A collective summary of the main findings from each child participant’s case is presented in Table 5.9. The purpose of the table is to assist the analysis of each individual case and cross-case analysis. The table supports the identification of the emerging patterns and themes to be examined, and how they relate across all four cases. These findings then contribute to the discussion and response to the inquiry’s research questions in the final chapter.
Table 5.9 Summary of case study findings

<table>
<thead>
<tr>
<th>Case study children</th>
<th>Nathan</th>
<th>Yasmin</th>
<th>Kurt</th>
<th>Ella</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (years and months)</strong></td>
<td>6.3</td>
<td>6.7</td>
<td>5.10</td>
<td>6.6</td>
</tr>
<tr>
<td><strong>Researcher’s initial interpretations of children using observation, interview and formal assessment data</strong></td>
<td>Limited use of technology at home; familiar with digital games</td>
<td>Limited use of technology at home; familiar with digital games</td>
<td>Limited use of technology at home; familiar with digital games</td>
<td>Owned own device and used technology at home daily; familiar with digital games</td>
</tr>
<tr>
<td></td>
<td>Confident literacy and technology learner; enjoyed using technology to play games using mainly apps</td>
<td>Confident literacy and technology learner; enjoyed using technology to play games using mainly apps</td>
<td>Confident literacy and technology learner; enjoyed using technology to play games using mainly apps</td>
<td>Timid literacy and technology learner; enjoyed using technology to write poems; played digital games (apps) mainly at school</td>
</tr>
<tr>
<td></td>
<td>Limited offline and online reading knowledge and skills</td>
<td>Limited offline and online reading knowledge and skills</td>
<td>Limited offline and online reading knowledge and skills</td>
<td>Limited offline and online reading knowledge and skills</td>
</tr>
<tr>
<td><strong>Researcher’s interpretation of children as they participated in group planning activities to select a game and plan a lesson</strong></td>
<td>Confident to experiment and trial in the online environment</td>
<td>Confident to experiment and trial in the online environment</td>
<td>Persistent at experimenting and trialling in the online environment</td>
<td>Tentative about experimenting and trialling in the online environment</td>
</tr>
<tr>
<td></td>
<td>Documentation demonstrates understanding of the purpose, rules and skills of his chosen game</td>
<td>Documentation demonstrates limited understanding of knowledge and skills needed to engage with chosen game</td>
<td>Documentation demonstrates an understanding of the purpose and rules of his chosen game</td>
<td>Documentation demonstrates concise understanding of the knowledge and skills required to play her chosen game</td>
</tr>
<tr>
<td>Researcher’s interpretation of children as ‘experts’ in Reciprocal Teaching lesson</td>
<td>Competent in his demonstrations and responses to his learners’ needs</td>
<td>Confident and competent in her demonstrations, explanations and responses to her learners’ needs and monitored learners closely</td>
<td>Created a supportive learning environment conducive for co-learning and could support learners’ requests</td>
<td>Confident and competent in all her demonstrations, explanations and responses to her learners’ needs and monitored learners closely</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>Used some technical language appropriately to support his learners</td>
<td>Appropriate use of some technical language to support her learners</td>
<td>Appropriate use of some technical language to support his learners</td>
<td>Appropriate use of technical language and used metalanguage to support her learners</td>
</tr>
<tr>
<td></td>
<td>Moved from teacher to participant in the lesson</td>
<td>Moved from teacher to participant in the lesson</td>
<td>Moved from teacher to participant in the lesson</td>
<td>Remained in role of ‘expert’ throughout the lesson</td>
</tr>
<tr>
<td>Case study children’s self-reflection and peer participants’ reflections on the experience</td>
<td>Understood role of teacher and enjoyed experience</td>
<td>Understood teacher role and enjoyed the experience</td>
<td>Understood teacher role and enjoyed the experience</td>
<td>Positive experience where her peers respected her as the expert</td>
</tr>
<tr>
<td></td>
<td>Drew himself in the game</td>
<td>Drew herself playing the game</td>
<td>Drew himself playing the game</td>
<td>Drew herself as a character in the game</td>
</tr>
<tr>
<td></td>
<td>Peers enjoyed experience and reported they had learnt new skills</td>
<td>Peers enjoyed the experience and reported they learnt new skills</td>
<td>Peers perceived Kurt as the teacher who had ‘taught’ them new skills</td>
<td>Peers enjoyed the experience and reported they learnt something new</td>
</tr>
<tr>
<td>Researcher's final perceptions after children teach their lesson</td>
<td>Could demonstrate the knowledge and skills his learners needed to engage with an digital game</td>
<td>Could demonstrate the knowledge and skills her learners needed to engage with an digital game</td>
<td>Could demonstrate the knowledge and skills her learners needed to engage with an digital game</td>
<td>Could effectively demonstrate the knowledge and skills her learners needed to successfully engage with an digital game</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Documented purpose, rules and some modes of an online game independently</td>
<td>Limited independent documentation of purpose and rules of an online game</td>
<td>Documented purpose, rules and some modes of an online game independently</td>
<td>Identified and documented purpose, rules and modes of an online game independently</td>
<td></td>
</tr>
<tr>
<td>Could articulate some features of the digital game while beginning to build metalanguage</td>
<td>Could articulate many features of the digital game while beginning to build metalanguage</td>
<td>Could articulate some features of the digital game while beginning to build metalanguage</td>
<td>Could articulate many features of the digital game and could appropriately use some metalanguage</td>
<td></td>
</tr>
<tr>
<td>Confident and capable teacher and able to support peers’ learning in a collaborative learning environment</td>
<td>Very confident and capable teacher and able to monitor her learners and respond to their needs in a collaborative learning environment</td>
<td>Confident and capable teacher and able to support peers’ learning in a collaborative learning environment</td>
<td>Very confident and capable teacher and able to monitor and support peers’ learning in a collaborative learning environment</td>
<td></td>
</tr>
</tbody>
</table>

**Chapter conclusion**

In this chapter data from interviews, observations and work samples were presented, discussed and interpreted. A detailed description of each case study child’s engagement in the planning activities (digital game selection and lesson planning) and their teaching experience (lesson delivery) were discussed to develop a rich portrayal of each case. At the conclusion of each case study, an interpretive summary of the data was presented including what was observed during the lessons. To conclude the chapter a table was presented, summarising the main findings from each case study and to highlight the patterns and themes of the collective case to support the discussion in Chapter 6.
Chapter 6: DISCUSSION AND CONCLUSION
CHAPTER 6

DISCUSSION AND CONCLUSION

Chapter introduction

This inquiry is a qualitative case study that investigated the reading demands of online texts for young children who are emergent readers, and their development of the skills and strategies to read online using a specific instructional model, Internet Reciprocal Teaching (IRT) (Leu & Reinking, 2005-2008). The chapter begins by responding to the research questions. Presented in the first question are findings regarding what teachers need to know about the reading demands for young children about online texts. The second question discusses IRT as an appropriate instructional model to support the development of young children’s online reading. In responding to question two, recommendations are made for the ways teachers can use IRT. Question three proposes a pedagogical framework for using IRT for instructional practice for online reading teaching. The chapter concludes by reflecting on the implications for developing young children’s online reading, and then presents recommendations for practice, policy and research.

In this inquiry, print-based and online data assessment provided insights into the children’s abilities to access and engage with print-based and online texts. These data generated information used in the design of the IRT intervention to develop the children’s online reading proficiencies. The reading demands of a specific online text (digital game) were investigated through analysis of data methods: document analysis, observations, work samples and interviews. In addressing the first research question, key findings are identified for discussion. The methodology of this inquiry is pioneering in that it began with an online assessment, the results of which informed the design of classroom based IRT reading experiences that afforded an examination of the development of young children’s online reading practices.

Research question 1: What do teachers need to know about the online reading demands for young children who are emergent readers?

This inquiry sought to understand how readers could be supported by teachers to access, engage with and to develop skills and strategies for online reading. Each of these are now discussed.
Teachers need formative assessment data to inform their teaching of online reading

In this inquiry, ORA assessments provided insights into the online reading skills and strategies each child controlled and those they were yet to acquire. Analysed ORA data indicated that all 13 child participants were quite limited in their knowledge, skills and strategies for navigating a website (ORA_1-13). These insights were instrumental in the design and facilitation of the subsequent teaching and learning experiences used to teach the children about reading online. Understanding what the children knew and were able to demonstrate allowed the teaching to build from existing knowledge, ensuring meaningful and successful learning for each child. The findings in this inquiry align with Coiro’s (2011) and Bearne’s (2009) claims that teachers must capture insights into their students’ skills and knowledge so they know where they are at and where they need to go next and to inform online reading teaching.

Certainly the use of formative assessments to inform teaching and learning is not a new concept for reading pedagogy, but for these children and their teachers, it had only ever been used for the teaching of reading with print-based texts. ACARA (2015) curriculum documents largely ignore the assessment and informed teaching of fundamental skills for online reading. For schools to adopt new pedagogical frameworks for online reading proficiency, they must be supported by curriculum that prioritises assessment of online reading, both to inform and to evaluate teaching practice. As such, the finding in this inquiry that formative assessment of online reading supports online reading teaching extends on current understandings about contemporary reading pedagogy. This finding is supported by research (Bearne, 2009; Kervin & Mantei, 2016; Leu et al., 2015b) that claims if teachers are to take responsibility for developing a reader’s ability to successfully navigate, comprehend and contribute to online texts, they need to know exactly what to teach young children about fundamental online reading skills and strategies and how to interact with digital multimodal texts.

Teachers need deep knowledge and understanding of the multiple forms, multimodality and literacy demands of online texts to support children’s online reading

The findings of this inquiry revealed that while the teachers provided opportunities for children to interact with technology to access games and apps in literacy sessions, they did not use digital or online texts for explicit instruction about the multiple forms or the multimodality of these texts (EI_1-2; CO_1-2; ETP). Indeed, it appeared from analysis of interview data, that the teachers were uncertain about how they could use online texts to explicitly teach for online reading proficiency, and a further concern was what they
would teach (EI_1-2). That is, there was a reported lack of knowledge about digital and online text structure, and the pedagogies for teaching it.

Given the lack of curriculum support documents available, it is unsurprising that teachers might lack understandings about the structure of online texts and feel anxious about the inclusion of pedagogies of explicit teaching and assessment of online reading skills and strategies. Kervin and colleagues (2017) observe there is often an assumption that teachers know the structures and design of screen-based texts, but it is not straightforward. For example, in this inquiry, a single online text (digital game) was selected. However, each game the children chose had a different design and structure and methods for conveying meaning that required explicit instruction to prepare the children for their teaching experience. Building on what we know about the important role teachers play in reading teaching (for example, Harste, 2003; Husbands & Pearce, 2012; Levy, 2009), this inquiry found that the success of children’s online reading proficiency will depend on the teacher’s familiarity with and knowledge and understandings about the range of structures and literacy demands of online texts.

This inquiry found that teachers need to look beyond only teaching about print and image, to develop deeper understandings of the modes within multimodal texts, their features (hyperlinks, distractors, non-linear and interactive) and how these combine to make meaning for the reader. Teachers have always required knowledge and understandings of the texts used in literacy instruction. However, findings emerging from this inquiry highlight that teachers also need clear understandings about the multimodality and literacy demands of online texts, so as to explicitly teach both print and digital reading skills and strategies right from the earliest years of schooling. This finding aligns with studies (Danby et al., 2013; Kress, 2010; Walsh, 2011) that claim it is fundamental for young children’s literacy development to be able to achieve meaning and express ideas through a range of media.

*Teachers need knowledge of the technical skills required to read online to support young children’s online reading*

In this inquiry, the 13 child participants required competency in fundamental technical skills to successfully use the computer to engage with the ORA webpages, and to navigate the ABCKids website. The ORA served the purpose of helping identify the knowledge children had and the opportunities for new learning. These skills included using the tapping, swiping and scrolling skills, understanding the visual icons such as
the sound icon, typing the URL, using the highlighting function and navigational tools (using the mouse or trackpad). Analysis of the data indicated the child participants had different competency levels in these fundamental skills (ORA_1-13). For example, in the ORA all 13 children were initially unsuccessful in using either the mouse or the trackpad to control the highlighting tool, two children were unable to use the mouse, eight children were unable to identify the sound icon within the website and two children confused the sound icon on the webpage with the volume control on the computer. Data also indicated they were more successful at demonstrating some skills when using the iPad. For example, in the ORA assessment, Yasmin confused the sound icon on the webpage with the volume button on the computer. Following her engagement with IRT and in her subsequent role as teacher, she had developed new understandings and could independently locate the sound button on the side of the iPad and demonstrate its function to her learners. The findings in this inquiry point to the need for teachers to teach children from an early age computer literacies (technical skills) to facilitate reading online alongside foundational skills for print-based reading. These findings align to those reported by Marsh (2014) who found that emergent readers need technical skills to successfully engage with online environments.

In this inquiry, the child participants’ ability to transfer technical skills across devices was important for their ability to engage with the literacy tasks. The 13 children used a computer to engage with the ORA website and then interacted with a website and digital games using iPads during the intervention. Observation data indicated different skills were required to control and manipulate the text on each device (ORA_1-13; RTO_1-4). For example, when using a computer for the ORA the children were required to manipulate a mouse or trackpad to navigate, and when they transferred to the smaller iPad screens to engage with a game, they were required to navigate using their fingers to tap, scroll or swipe. Findings from this inquiry suggest that children’s reading proficiency is supported when teachers provide young children with opportunities to gain knowledge about the technology itself, and opportunities to develop proficiency in using different technical skills on multiple devices to navigate online contexts. These findings align with Lawless and Schrader (2008) who report that teachers need to consider the different technical skills required for different types of devices to enable children to successfully navigate online environments.

*Teachers need knowledge of the array of online texts so they can select suitable texts to support online reading teaching*
A further compounding factor impacting teacher pedagogies for online reading teaching is text selection. The selection of suitable texts has always been important to the success of reading development, in particular for emergent readers (Clay, 1979; Frey et al., 2005; Rosenshine & Stevens, 1986; Turbill, 2002).

Selecting online texts for reading teaching includes an understanding of reading pathways. Each child participant in this inquiry adopted different reading pathways when engaging with their game (FGI_1-4; RTO_1-4). The online text (digital game) selected by each case study child allowed them to i) choose their own, non-linear pathways to make meaning, and ii) enabled them to explore the complexities of multimodal texts through their pathway choices. Across the four cases the children explored a range of multimodal digital games within the ABCKids website, while being encouraged to make independent decisions about pathways for making meaning. Kress (2010) claims that readers in online environments follow different informational pathways rather than the common linear pathway more characteristic of print-based texts. Emerging from the findings of this inquiry is the understanding that teachers must consider texts to support the new kinds of reading proficiency required to read online. Teachers need to be able to critique online texts for reading demands and incorporate learning about these demands in their pedagogies. This finding aligns with Burnett’s (2017) and Coiro’s (2011) studies that found there is a need for teachers to have deep knowledge and understanding of the range of different online texts, and how these complex and multifaceted media forms represent meaning. This will allow for careful scaffolding of reading pathways within online environments for readers, to support the development of their online reading proficiency.

Teachers need a good technical language and a metalanguage so they can teach it to their learners

In this inquiry, the child participants were afforded learning opportunities for collaboration and co-learning. Even though analysed data (RTO_1-4) indicated the children verbally interacted to share knowledge and problem solve together, they had limited language to talk to their peers about the problems they encountered. Analysis of observation and field note data revealed that when the children were confronted with limited technical skills or knowledge about the rules of the game to continue to engage, they usually used a physical gesture (hands in the air, a sigh, hands on head) and/or a short verbal exclamation. For example, Nathan banged his hands on the desk when his game kept loading (RTO-11) and Ben exclaimed in a frustrated voice “I can’t do it, I
can’t do it”, but couldn’t explain what he couldn’t do (RTO-10). In this inquiry, it appeared all case study children supported their learners to problem solve, however this was through either demonstrating the skill and/or the rule rather than giving an explanation. For example, in Ella’s lesson, Michael was confused about the rules of the game and was tapping the squirrels instead of the fruit and exclaimed “oh, what do you do”. Ella’s response to Michael’s request for help was to demonstrate this on her screen, and then on Michael’s screen (RTO-12). As such, findings from this inquiry highlight the need for teachers to encourage children to work alongside each other and provide explicit demonstrations and opportunities to use the strategies demonstrated in the context of real texts. Teachers are key to supporting children with limited topic knowledge and metalanguage (Leu et al., 2013; Levy, 2009). It is through explicit teaching of the vocabulary required for meaning making and for sharing understandings with others that a reader becomes more proficient across texts. Supporting this finding Kiili (2012) claims for deeper understandings about their learning, students require opportunities to develop talking and listening skills so they can have more continuous communication when collaborating and networking.

In this inquiry, analysed data indicated most child participants had limited vocabulary for explaining the reading demands of the online text (ORA_1-13; RTSR_1-4; RTPI_1-9). For example, when asked about what they noticed moving on the ORA webpage, and the purposes of the advertisements and the animations, the children predominately identified images but demonstrated limited vocabulary to explain how the text worked, or to talk about the reading demands of the webpage. ORA data indicated 12 children initially were attracted to movement on the ORA webpage, but were unable to identify and explain what the purpose of the movement might be. This inquiry found that these emergent readers needed a metalanguage for talking about online texts and technology, just as they do for talking about print-based texts and other literate activities such as writing. These findings are supported by Kervin et al. (2017) who suggest that teachers need to provide children with opportunities to build metalanguage so they can talk about technology use and their knowledge and understandings of the texts they read and those they create.

*Teachers need to know that young children require opportunities to create as well as consume using technology to develop online reading proficiency*

In this inquiry, analysed data (CO_1-2; EI_1-2; ETP) indicated that in literacy sessions the children mostly interacted with technology as consumers (playing games, apps,
word processing). However, during the intervention in this inquiry, the children had multiple opportunities to interact with technology as consumers and creators of text. For example, the 13 child participants responded as contributors to the ORA blog, had opportunities to engage with quizzes within their digital game, were provided with opportunities to take ‘selfies’ and created procedures for teaching their lesson, to name a few. The value in giving children opportunities to create print-based texts is highlighted in the literature (for example, Fountas & Pinnell, 2001; Frey et al., 2005; Peebles, 2007; Spiegel, 1998). Extending these findings into the digital environment, this inquiry provides insights into the value of having young children participate in the online environment through the creation of screen-based texts. Just as teachers look to engage children as creators of paper-based texts, comparable opportunities need to be provided to explore ways of producing and consuming text across the modes afforded by digital technologies. This will support emergent readers’ understandings of the structures and design of the increasingly sophisticated online texts from which they are expected to make meaning. Findings from this inquiry point to the need for teachers to provide children with equal opportunities to explore ways of producing and consuming text while using technology. This finding builds on claims by Abrams and Merchant (2013) and Kress (2010) who report that digital technology use needs to develop higher order thinking skills rather than children learning how to use applications. Levy et al. (2013) argue that new considerations for the ways in which digital technology can be included in classrooms to support children’s multimodal learning must emerge with a particular emphasis on children as creators as well as consumers of texts.

**Question 2: What is the role of Internet Reciprocal Teaching in developing young children’s online reading skills and strategies?**

This inquiry positioned the Internet Reciprocal Teaching model (IRT) (Leu & Reinking, 2005) as an effective pedagogical strategy for teaching online reading. In considering IRT as an appropriate instructional model for the teaching of young children, the following discussion points are addressed to respond to the second research question.

*IRT provided opportunities for early preparation of young children for online reading*

Literacy teaching and learning must involve a focus on both print and digital texts from the earliest years of schooling (Doyle, 2011). Even though the IRT model has been previously used with older more proficient readers (Coiro & Hobbs, 2016; Leu et al., 2015b) this inquiry found that IRT was an appropriate instructional model because it was supportive of these emergent readers’ attempts to engage with an online text. For
example, observation data (EL_1-4; RTO_1-4) indicated the steps within the IRT intervention allowed for explicit teaching of skills and strategies for reading as a multimodal practice. Explicit teaching skilled the case study children, scaffolded their learning and then afforded opportunities for them to then share their knowledge with a group of peers. Leu et al. (2013) argue, like print-based reading, teaching reading for online texts also requires explicit instruction, guided demonstrations and scaffolding of learner’s attempts, in order to support early development of online reading practices. In this inquiry, IRT was used as a teaching procedure to begin to build the children’s foundational skills for online reading. The findings of this inquiry build on foundational understandings about preparing learners for print-based reading (Brown, 2014; NAEYC, 1998; NICHD, 2000) by contributing insights into the need for early preparation of young children for online reading as well. Supporting these findings both Abrams and Merchant (2013) and Ewing (2016) claim that for children, learning to be literate is crucial for generating future life successes and mastering twenty-first century skills will lead to a more socially active and fulfilled life.

**IRT provided young children with opportunities to engage with technology in authentic and meaningful learning experiences**

Authentic online learning experiences involve children interacting, exploring and navigating texts while collaborating, discussing and sharing meaning (Coiro & Hobbs, 2016). In this inquiry, data (FGI_1-4; EL_1-4; RTO_1-4) indicated IRT provided the children with authentic and meaningful opportunities to access, navigate and explore an online text, and collectively and independently problem solve, while interacting with a digital game. For example, data (RTSR_1-4; RTPI_1-9) indicated that across the cases, all 13 children were willing participants and expressed positive attitudes about the experience to engage with the technology. There are multiple examples from the data of children using phrases such as “I like” and “I love” when describing their engagement with each other and the technology, and written comments in self-reflections about working alongside peers as “good!” (RTSR-11) and “them being nice to me and respecting me” (RTSR-12). Positive dispositions, or attitudes and beliefs, are important aspects of successful learning (Pressley, 2006), particularly for children growing up in a digital age. Building on understandings from research about integrating technology in pedagogy (for example, Hill, 2005; Lankshear & Knobel, 2003; Mishra & Koehler, 2006) findings emerging from this inquiry suggest that the IRT model provided a rich and meaningful learning experience for the children using technology. However, this inquiry found it was not just the use of technology that created meaningful and authentic
learning for the children. It was using assessment data to inform instruction, and using the IRT model to balance explicit instruction with facilitation and shared responsibilities between researcher and the children. This offered more meaningful and authentic support for the children to respond to the reading demands of the online game. Supporting this finding, Castek et al. (2015) argue that when teaching pedagogy allows for a gradual release of responsibility and opportunities for co-construction of meaning and problem solving, learners will be empowered to take ownership of their learning in purposeful ways. 

**IRT provided balanced instructional opportunities informed by assessment for online reading**

Teachers need immediate and useful information about their students to plan instruction and to provide feedback connected to evidence of performance. In this inquiry, data gathered from interviews, observations and the CAP and ORA assessments provided evidence of each individual child’s strengths and areas for growth, which then informed the design of the lessons in the intervention (CAP_1-13; ORA_1-13; SI_1-13; CO_1-2). Using these data the researcher followed the IRT procedures to i) skill the case study children through explicit instruction informed by data, ii) provide support as needed by scaffolding students attempts to engage successfully with a digital game and iii) created a learning context for children to share their insights with their peers. The ORA provided an entry point into working with the children as their understandings, knowledge and interests were taken into account. This inquiry points to the effectiveness of explicit instruction when it is informed by formative assessment data and when children’s immediate learning needs are met. Using the IRT model allowed for a balanced approach to explicit instruction where the researcher skilled the children to then instruct their peers. This finding is supported by Leu et al. (2015a) and Bearne (2009) who claim that it is through assessment that instruction is informed. When the IRT approach is followed, Coiro and Hobbs (2016, p. 9) claim “everyone has the potential to teach everyone”.

**IRT provided young children with opportunities to be empowered, building confidence and self-esteem**

To develop online reading proficiency, a reader must be willing to take risks and explore and sample within online environments (Coiro & Hobbs, 2016). In this inquiry, the IRT experience provided the children with learning opportunities that promoted them as experts (Castek et al., 2015). Through independently and collaboratively taking
risks, exploring, sampling and experimenting with a digital game, the children could then share their new skills with their peers. Across the cases, opportunities for the case study children to explore the ABCKids website and to sample its different pathways enabled the children to assume responsibility for their own learning, building confidence and self-esteem. For example, it appeared Nathan viewed himself as an expert capable of supporting his peers, reporting he liked “not being dumb” in his self reflection (RTSR-3). And Yasmin confidently and competently navigated the digital game, finding content within the site unknown to her peers and the researcher (RTLP-11). And Kurt continually requested help from Nathan, and not the researcher when he was having difficulty exploring the ABCKids website (FGI-10) and Ella referred her request for support to Yasmin when she was unsure of navigating a game (FGI-12). It can be argued that other instructional models that integrate technology into literacy learning experiences also empower students (Archer & Hughes, 2011; Danby et al., 2013; Doyle, 2011). However, evident in the feedback and responses during this inquiry the IRT experience increased the children’s self-esteem and confidence and empowered them, by enabling them to take risks, make choices and take ownership of their own learning within a collaborative learning environment. This finding aligns with research by Castek et al. (2015, p. 330) who claim IRT “increases engagement, encourages active reading and promotes children as experts” to build online reading proficiency.

IRT provided young children with opportunities to help ‘the last become the first’

Leu et al. (2015b) report that the IRT model provides special opportunities to place students who struggle with literacy at the centre of literacy learning classrooms. In this inquiry, the initial assessments aimed to identify the lowest text readers across the Year One cohort of children, and to invite these children as participants. Performance on the CAP and ORA assessment tools then informed selection of the four case study children, who were identified as having the lowest performing scores on these assessments (CAP_1-13; ORA_1-13). In this inquiry, the researcher purposefully selected children with the lowest reading abilities and technology experience to form the case study groups. Multiple data sources in this inquiry suggest that the IRT experience empowered the four case study children by skilling them to use technology for a particular purpose, engagement with a digital game (RTO_1-4; RTSR_1-4; RTPI_1-9). For example, Yasmin, after building her knowledge and understanding about her game, could demonstrate to Tayla how to access Safari and locate a particular game within the site (RTO-11). While Yasmin’s attention was focused on helping another peer, Tayla was then able to confidently and competently share her knowledge with Nicole (RTO-
It is well established that there are other successful approaches to teach reading (for example, Brown, 2014; Fountas & Pinnell, 1996; Rosenshire & Meister, 1994), however this inquiry found that the IRT model is an effective instructional model for the teaching of online reading to young children. In particular, IRT provided the social context for the children to take on the role of facilitator and to share knowledge and skills with peers, who may not yet know these skills. These findings align to findings by Leu et al. (2015a, p. 425) who claim IRT is a pedagogical strategy providing “special opportunities to help the last become the first”.

**IRT provided young children ‘peer tutoring’ opportunities by working in pairs or groups**

Having students work collaboratively in pairs or small groups is pedagogically sound (Frey et al., 2005; Luke & Freebody, 1999; Pressley, 2006). Group size was an important consideration in this inquiry, with the selection of three to four children for each case study group for easier organisation and management. Group size also afforded opportunities for peer tutoring and co-learning to intuitively occur. For example, opportunities to engage with peer tutoring provided both Nathan and Yasmin with forums to demonstrate and share their expertise (RTO-3; RTO-11). Across the cases, there were multiple times when all participants were engaged in discussion to support one another’s learning through peer demonstrations of the skills and strategies needed to engage with the game. For example, Ella supported Michael to tap the squirrels (RTO-12), Nicole supported Tayla to use the sound function (RTO-11), Yasmin supported Tayla to access Safari (RTO-11) and when Ben was having difficulty typing the URL, all group members gave support (RTO-10). Good pedagogical practices for teaching literacy involves group and individual teaching (Husbands & Pearce, 2012). Findings emerging from this inquiry suggest that working in pairs or in a small group enhanced the child participants’ confidence and ability to experiment in the online environment. Findings from this inquiry are supported by Leu et al. (2015b) who found that students working collaboratively in pairs or small groups resulted in more helpful co-construction of meaning when reading in online environments.

**IRT provided young children with opportunities to co-learn by sharing and engaging in collaborative interactions with both peers and the teacher**

It is reported in the literature that working collaboratively online can lead to significant gains in student learning (Castek et al., 2012; Kiili, 2012). In this inquiry, IRT provided opportunities for the children to collaborate, interact and engage within an online space
to problem solve and construct meaning with a digital game. For example, Ella initially found navigating the online context difficult until supported by her peers, and Yasmin reported she guided her learners through group demonstrations to access the website. All the children took full advantage of the collaborative situation, engaging cooperatively in the experience to improve their skills to engage with the game. There are many known pedagogies that promote collaborative and co-learning practices (for example, reading aloud; shared reading; reader’s theatre; reading workshop). However, findings emerging from this inquiry highlight that the IRT experience allowed the children to engage in co-learning practices across all three steps of the IRT procedure, even when the children were engaged in the explicit instruction of online reading skills in step one. IRT afforded multiple opportunities for the children to gain understandings about the digital game. Findings in this inquiry align with studies by Coiro and Hobbs (2016) and Leu et al. (2015b) who argue reciprocal experiences offer opportunities for co-learning to occur, increasing the learner’s awareness of their own thinking processes and enabling ownership of learning in purposeful ways.

IRT provided young children with opportunities to develop a metalanguage and technical language to talk about their understandings of online reading

Developing children’s metalanguage to talk about their knowledge and understandings of texts is not a new concept in reading pedagogy (Leu et al., 2013; van Leeuwen, 2004). In this inquiry, the IRT experience afforded opportunities for the children to engage in dialogue to exchange understandings about the reading demands of the game. For example, Ella explained, “I had to teach them so they would know what to do” (RTO-12), and Yasmin reported, “I had to teach them how to tap, and I had to show them which one to click” (RTO-11). This inquiry found that even though there were examples when the children’s language was limited to talk about their understandings, IRT afforded multiple opportunities throughout all steps within the model for children to verbally interact with their peers and the researcher, and to use language to talk about their understandings of the game. It also provided opportunities throughout the steps for the researcher to model appropriate language use to the children. These findings align with claims by Westera and Moore (1995) who argue when learners participate in reciprocal conversations to co-construct understandings of the texts they read and create, they learn thinking strategies for deeper understandings. These findings also align with Danby et al. (2013) who found that young children, when using digital devices are competent at managing both talk to interact with others and talk when engaged in the activities.
Children also need to develop technical language when talking about reading online so that they can articulate their knowledge of these skills. In the intervention phase of the research, the researcher modelled the use of appropriate technical language while instructing the learners through guided demonstrations and ‘think alouds’. In her lesson, Yasmin could then explain the purpose of her game to the group while using some technical terms such as ‘load’ and ‘tap’ to instruct her learners to access the website. Ella could use technical terms, including ‘scroll’ and ‘swipe’ to explain some of the skills her learners would require. Kurt in his lesson, successfully explained to his learners the importance of the tapping skill stating, “you have to tap the yellow balls to get to another level” (RTO-10). While there were times in this inquiry when the children’s language limited their ability to talk about their understandings, the IRT model afforded multiple opportunities throughout all steps within the model for children to develop technical language to talk about their discipline knowledge and technology use. The IRT model also provided opportunities throughout the steps of the model for the researcher to demonstrate appropriate language use. This finding extends on Leu and Reinking’s (2005-2008) observations, that the IRT model provides social practices for making meaning and sharing responsibilities for learning between and among the participants.

**Question 3: How can teachers support young children to develop online reading skills and strategies?**

*A pedagogical framework to teach online reading skills and strategies to emergent readers*

In addressing this third question, and building upon the understandings of IRT and other pedagogical models used for literacy and technology integration discussed in Chapter 2, a pedagogical framework has been presented to support emergent readers’ online reading proficiency.

The pedagogical framework presented in Figure 6.1 offers teachers a guide to support emergent reader’s online reading development. While this inquiry started with Internet Reciprocal Teaching (IRT) (Leu & Reinking, 2005-2008) as an instructional model, the findings indicate, that extending the IRT model to include clear expectations regarding teacher and reader responsibilities, provides a powerful framework for developing skills and strategies to support not only emergent readers, but potentially older more proficient readers when reading online.
### Pedagogical framework for developing skills and strategies for online reading using Internet Reciprocal Teaching

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<tr>
<th>Teacher responsibilities</th>
<th>IRT Model Phases of instruction</th>
<th>Reader responsibilities</th>
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<tr>
<td>• Assess and analyse</td>
<td><strong>Phase 1</strong> Teacher-led</td>
<td>• Explore and sample</td>
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<tr>
<td>• Plan and teach</td>
<td><strong>Phase 2</strong> Collaborative problem solving</td>
<td>• Discuss and practice</td>
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<tr>
<td>• Assess</td>
<td><strong>Phase 3</strong> Independent application</td>
<td>• Demonstrate and adapt</td>
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<td>• Evaluate and Reflect</td>
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**Figure 6.1:** Pedagogical framework for developing skills and strategies for online reading using Internet Reciprocal Teaching

Figure 6.1 shows three key components of the framework, the IRT model phases of instruction, teacher responsibilities, reader responsibilities and the interrelationships between all three components. These are now discussed.

*Internet Reciprocal Teaching model, phases of instruction*

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<th>IRT Model Phases of instruction</th>
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<td><strong>Phase 1</strong> Teacher-led</td>
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<td><strong>Phase 2</strong> Collaborative problem solving</td>
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<tr>
<td><strong>Phase 3</strong> Independent application</td>
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**Figure 6.2:** Internet Reciprocal Teaching, phases of instruction

The three phases of instruction identified in the IRT model are central to the
pedagogical framework and are represented in Figure 6.2. The pedagogical framework shown in Figure 6.1 uses the IRT model, as this inquiry found it was supportive in providing young children with opportunities to successfully interact with a digital game.

- **Phase 1 is led by the teacher.** The teacher assesses her readers’ knowledge, skills and strategies, selects appropriate texts to support the explicit instruction and demonstration of strategies (predicting, locating, questioning, clarifying, summarising and communicating) together with the knowledge, skills and strategies needed for online reading.

- **Phase 2 is supported by the teacher.** It involves readers collaboratively problem solving to construct meaning and it provides opportunities for co-learning, peer tutoring and reciprocal dialogue to occur.

- **Phase 3 is observed by the teacher.** It involves the independent application of knowledge, skills and strategies through the reader’s understandings, responses and creation of new texts.

Through the implementation of the three phases of the IRT model, the teacher orchestrates a gradual transfer of responsibility (Rosenshine & Meister, 1994) to the reader. While this is not a new idea in reading pedagogy, it is central to the success of the framework as the children become skilled enough to then share their learning with their peers. Using this strategy, the teacher can provide appropriate instruction at different times within the phases to meet the reader’s needs, and to move the reader towards independence. This gradual transfer of responsibility from teacher to reader is represented by the diagonal lines in Figure 6.1, teacher and reader responsibilities. While assessment data (ORA_1-13) guided the phases in this inquiry and the selection of an appropriate online text to support teaching and learning, this inquiry argues that without clear and careful articulation of teacher and reader responsibilities, the IRT phases alone are insufficient to support the implementation of the Pedagogical framework for developing skills and strategies for online reading using Internet Reciprocal Teaching (Figure 6.1).

**Teacher responsibilities**
Teachers have always had responsibilities to support reading development. However, this framework proposes these responsibilities cannot be assumed, and so clearly identifies these for the teacher. These teacher responsibilities are shown in Figure 6.3 and are described below:

- Assess and analyse the readers’ reading process about what they know and can do, and what needs to be learnt next. Analysis of these assessment data inform the design of appropriate learning experiences.
- Plan teaching and learning sequences to meet the readers’ learning needs and select suitable digital multimodal texts that can support the development of the skills at focus.
- Teach explicitly and demonstrate to readers the online skills and practices needed to engage with the text in a manner consistent with the teaching focus.
- Observe and assess readers throughout the three phases of the IRT and give feedback to the readers.
- Evaluate and reflect on the success of the teaching throughout the three phases of IRT and adjust lesson planning if needed.
- Provide modelling to demonstrate the use of metalanguage through strategies such as ‘think aloud’.

Underpinning teacher responsibilities and the success of this framework, is the need for teachers to create a learning environment where young children can take risks, share their thinking, ask questions and participate in conversations, while having opportunities for productive collaboration (Kiili, 2012). This inquiry found providing a supportive learning environment is essential for developing in young children that language to enable them to talk about their understandings of online text. Like other pedagogical approaches discussed in this inquiry, for example the TPACK (Mishra & Koeler, 2006) and the SAMR (Puentedura, 2016) approaches, this framework aims to guide teachers to effectively integrate technology into meaningful learning experiences informed by formative assessments. The pedagogical framework presented in Figure 6.1 does not
assume that assessment has informed instruction. Assessment before, during and after learning has been clearly identified as being critical to the success of the framework. Assessment that informs instruction is not a new concept for teachers, however this is clearly highlighted as a teacher responsibility in the framework because it is key to its function.

Building on Fountas and Pinnell’s (1996) reading model for print-based reading, this inquiry presents a clear model shown in Figure 6.4 showing the identified teacher moves while meeting their teacher responsibilities during the phases of IRT.

![Figure 6.4: Model of teacher responsibilities](image)

**Reader responsibilities**

The IRT model provided the child participants with opportunities to engage as active learners, promoting self-direction and responsibility. For example, IRT provided opportunities for taking the responsibility for choosing texts and for following preferred reading pathways when engaging with the game. The model also promoted a learning environment where there was an expectation that they would all become competent players of the game, and where talking was modelled and used by the teacher and the readers to problem solve and explain understandings. Also evident in this inquiry was that the model enabled collaborative interactions and peer tutoring opportunities. Conversations and demonstrations of skills and strategies between the researcher and the children, and the children and their peers enabled all participants to naturally respond to each other’s learning and it encouraged listening, questioning and comments. And so it is that the teacher-created environment allows the reader to take certain responsibilities (see Figure 6.5). As in Figure 6.3 that demonstrated the gradual release
of teacher responsibilities, shown in Figure 6.5 is the gradual taking on of responsibilities by the child for their learning by:

- exploring and sampling the online texts to problem solve
- practising the skills and strategies needed to read online
- demonstrating the knowledge, skills and strategies needed to read online
- adapting and using the knowledge, skills and strategies independently to respond to and create new texts.

These responsibilities are shown in Figure 6.5.

![Reader responsibilities]

Figure 6.5: Reader responsibilities

Figure 6.5 summarises the ways children will be equipped to engage with texts in increasingly independent and self directed ways. They will work to solve problems by exploring and sampling the online texts. Through the development of technical language and metalanguage, they will be able to discuss and reflect on their online reading skills and strategies, and practicing those skills will lead to new understandings. And through the prior careful teaching, a reader can take what they learn, adapting and using the knowledge, skills and strategies independently to respond to and create new texts.

Building on what we already know about a reader’s responsibilities when reading print-based text (Fountas & Pinnell, 1996), this inquiry presents a clear model identifying the reader responsibilities when reading online. This model is shown in Figure 6.6.
Gradual release of responsibility

In the proposed pedagogical framework, matching effective instruction with independent learning (Pressley, 2006) needs to follow a progression where teachers gradually do a different kind of work and students gradually assume increasing levels of responsibility for their learning. This inquiry found that the IRT model allowed for a shift from teacher as facilitator of explicit instruction in phase one, to joint responsibility between the teacher and reader in phase two, and then to the independent application of skills and strategies by the reader in phase three. The IRT offers a comprehensive approach that affords children explicit instruction and demonstrations about their responsibilities for successful engagement with online texts. In this inquiry, the gradual shift in responsibility from teacher to student provided the case study children with the opportunities to be skilled, to then teach a group of peers, a step Pressley (2006) claims is often omitted when using the gradual release of responsibility process.

Summary of responses to the research questions

This inquiry has contributed to knowledge about reading pedagogies by examining the demands on teachers and on learners for teaching and reading in online spaces. Emerging from the inquiry is an understanding that IRT is an appropriate starting point for rich and effective pedagogies for developing online reading proficiencies of emergent readers. Informed by formative assessment and then ongoing reflection along with the principles of the gradual release of responsibility, the IRT model proved to support the least capable to become experts and teachers of a part of the reading process. Empowerment of the learners was achieved because assessment data were used
to drive the design of the learning experiences, which used a combination of teacher-led instruction and small group collaboration and discussion. It was also achieved as the learners were given opportunities to explore, sample and problem solve, supported by the principles for the gradual release of responsibility (Rosenshine & Meister, 1994). Embedding IRT within the gradual release of responsibility model also provided opportunities for independent practise of the skills and strategies that had been explicitly taught, and to reflect on and respond to their learning both orally and in writing. Combining assessment with IRT and gradual release of responsibility as seen in Figure 6.1 yielded in this inquiry promising ways forward for the teaching of online reading.

Emerging from this inquiry is the understanding that of most importance to the success of the IRT model was the empowerment and engagement of the children, and the opportunities they had to achieve equitable learning outcomes. This finding aligns with and builds on the work of Castek et al. (2015) who claim that IRT increases academic engagement, encourages active reading and promotes students as experts in their learning. Through the Pedagogical framework for developing skills and strategies for online reading using Internet Reciprocal Teaching (Figure 6.1), learners are empowered and engaged, and teachers have opportunities to achieve equality for the learners in their class.

- **Empowerment:** by promoting children as ‘experts’ in online reading. This inquiry found that the four young case study children appeared confident and capable of taking on the role of facilitating instruction to a group of peers, despite being identified as the lowest text level readers in the Year One cohort.

- **Engagement:** the gradual release of responsibility process offered to the children appeared to increase their involvement and engagement in the experience. This inquiry found that this experience provided the child participants with multiple opportunities to discuss and independently practice the knowledge, skills and strategies needed to engage with the game. It also appeared that the 13 child participants valued the experience of engaging with technology. All of the child participants expressed positive attitudes about their engagement.

- **Equality:** this inquiry found that opportunities to collaborate, co-learn and participate in peer-tutoring encouraged the 13 participants not only to be active in their learning, but provided equal opportunities to contribute to their own learning and the learning of their peers.

The pedagogical framework presented in Figure 6.1 aims to be a “rich instructional model” (Leu et al., 2015b, p. 358) that supports teachers and readers in a reciprocal
learning environment that fosters confidence to share strategies, provides a context in which readers can discuss and demonstrate new strategies, and promotes students as experts, thus contributing to opportunities for our students to read and learn in powerful ways with online information.

**Implications for practice, policy and research**

The literature challenges researchers working in early literacy education to use their insights to help understand when and in what ways young children should begin to read, write, and communicate with technology (Leu et al., 2009). This inquiry focused on developing online reading proficiency for young emergent readers, and on the ways that primary school educators, in Australian settings, can support the development of the skills needed to read online. Building upon an instructional model, Internet Reciprocal Teaching, a pedagogical framework is presented that clearly articulates what is meant by teacher and reader responsibilities within the teaching and learning cycle. This inquiry provided opportunities for the researcher to observe the children in situ, which enabled her to gain a deeper understanding of the knowledge, skills, strategies and language required by the children to understand and take control of developing their online reading. The implications for practice, policy and research are identified and discussed below.

**Implications for practice**

The literature examined in this inquiry established that the process of reading and making meaning by young children in online environments is a complex process, just like offline reading. Therefore, teachers need to adapt their assessments and pedagogies as they reconceptualise their understandings of the reading demands of both offline and online texts and provide pedagogical intervention. This inquiry contributed to the understanding of teachers’ roles and responsibilities in the classroom and examined the appropriateness of a pedagogical framework for developing online reading proficiency in young children. Teachers have a responsibility to ensure that the assessment of both offline and online reading is incorporated into their classroom learning and teaching cycle. Implications for practice identified from this inquiry are now discussed.

*Teachers need to use the assessment of both offline and online reading to design appropriate learning experiences to meet young children’s reading needs*

In Australia and internationally, curriculum documents largely ignore the assessment of
fundamental online reading skills, especially with young children (Kervin et al., 2017). This inquiry found that the teacher participants administered formal assessments and tracked their students’ progress using the K-2 Literacy Continuum (NSWDEC, 2011). Student data informed the planning of explicit literacy experiences for whole classes, guided groups and individual instruction to meet students’ needs. It was also noted, however, that the teachers neglected to collect any reading assessment data for online reading, and no online texts were used as resources to support the teaching of either offline or online reading proficiency. More young children are accessing technology than ever before (Leu et al., 2013; Roswell, 2014). It therefore seems reasonable to begin to assess and teach online reading together with offline reading.

*Teachers need to provide authentic opportunities for young children to engage with technology to develop offline and online reading skills and strategies*

Luke and Freebody (1999) claim that effective reading teachers ensure that literacy experiences are embedded in authentic, real and meaningful contexts. Findings from this inquiry indicate that the Internet Reciprocal Teaching model was effective in the context of the small group case studies. This context allowed for collaboration and problem solving between and among the child participants while providing equal opportunities for them to be active contributors to their learning. Although the Internet Reciprocal Teaching model was originally designed and used for instruction with larger groups (often whole classes) and with older students, this inquiry recommends that the model be considered as an appropriate pedagogical strategy for strengthening reading instruction in a variety of classroom settings, particularly small group instruction for younger children.

*Teachers need to provide opportunities for young children to develop and use metalanguage*

This inquiry found that teachers should provide frequent opportunities for learners to engage in talk about their learning with both teachers and fellow students. This has implications for classroom practice, as teachers need to understand the importance of their young students developing a metalanguage and provide multiple opportunities for them to develop the vocabulary to do so. In this inquiry, the Internet Reciprocal Teaching model provided the child participants with multiple opportunities to develop the oral language skills they needed to talk about their learning. Kervin et al. (2017) suggest that opportunities for young children to talk about their learning are particularly important for the growth in reading proficiency because it empowers them as users and
creators of text.

*Teachers need to engage in professional learning about using technology and the appropriate pedagogies to support the development of both offline and online reading*

Reading pedagogy research (Husbands & Pearce, 2012; Rasinski & Padak, 2004) has found that there is no one best method for teaching all children to read, and that all practices can be effective if they fit with children’s needs. When teachers use assessment data to find out what children can and can’t do, they can make informed pedagogical decisions about how to cater for children’s learning needs. In considering which pedagogy to use to support children’s early development of online reading proficiency, teachers need to understand their students’ needs, and they need to have a deep understanding of the available pedagogies or models of instruction for offline and online reading. This inquiry recommends that teachers take full advantage of professional learning opportunities to explore new instructional strategies and resources. This includes teachers engaging with professional organisations and networking opportunities, reading professional publications on a regular basis and discussing them with colleagues to enhance their own knowledge and understanding of best practice for developing offline and online reading based on current research.

*Teachers need to support colleagues to develop their knowledge and understandings of both offline and online reading*

Teachers need to share their own knowledge and understandings of the teaching of reading, including both offline and online reading, through mentoring opportunities, in particular, for new teachers to the profession. This would involve ensuring that school induction programs prepare new teachers by providing support around the instructional use of resources to teach offline and online reading. Ongoing support for early career teachers could include collaborative programming, classroom observations, professional networks and the sharing of professional readings and journals to expand their knowledge base and develop online reading practices.

**Implications for policy**

Policy makers in many nations are recognising the growing need to have citizens who are capable in online reading, research and comprehension (Leu et al., 2013). The literature examined in this inquiry establishes that most research is being conducted with older, more proficient online readers, and this is contributing to our understandings
of adolescents’ use of online texts. However, there is very little research being conducted into online reading with younger children. Kervin et al. (2017, p. 34) argue that it is no longer appropriate for policy makers to “marginalise” online reading in curriculums and look to the past for models of what reading may involve. It is therefore appropriate for policy makers to begin to place online reading alongside offline reading in curriculums, and to mandate the instruction of online reading, beginning from children’s early years of formal education. This inquiry aims to contribute to policy and identifies and discusses the following points.

Policy makers need to review national curriculums to ensure that they define both offline and online reading outcomes and identify the resources needed to support the development of both

Globally, governments have developed policies that reflect the importance of incorporating the instructional use of technologies for learning in the curriculum (Leu et al., 2011). In Australia, the MCEETYA (2008) acknowledges the importance of teaching young people to share and use information technology. It also acknowledges the need to significantly increase the effectiveness of technology use. However, close examination of the Australian English Curriculum (ACARA, 2015) reveals some important insights into the dominant role of print-based text and the lack of adequate detail in relation to teaching young children the practices they need to use multimodal and online texts. Whilst print-based text holds a central place in the Australian Curriculum, the curriculum also highlights that students in foundational years (Early Stage and Stage One) need to be able to draw on an “increasing range of skills and strategies to fluently read, view and comprehend a range of texts on less familiar topics in different media and technologies” (ACARA, 2015). This has implications for reading instruction for young children, as there seems to be an assumption that offline and online reading skills and strategies are taught alongside each other, with the use of both resources, print-based and online texts. In this inquiry it was apparent that teachers’ knowledge of what to teach and how to teach using online texts was limited. The children had multiple opportunities to use technology in literacy sessions, but there appeared to be no explicit instruction in online reading skills and strategies. It was also noted that online texts were absent when explicit reading instruction occurred across the literacy sessions in both classrooms. This inquiry recommends that policy makers provide guidance through curriculum documents so that teachers can instruct young children, from foundational years, in the skills and strategies for both offline and online reading.
Policy makers need to ensure that the assessment of online reading is given the same attention as offline reading in literacy curriculums

The Australian Curriculum (ACARA, 2015) promotes an integrated approach to teaching, learning and assessment, stating that the purpose of assessment is to “gather valid, reliable and useful information about student learning”. Assessment needs to support teachers to monitor students’ achievements, and it needs to guide the planning of future learning experiences. It also needs to be used to provide feedback to students to improve their learning. As with offline reading assessment, teachers need to make time available for close observations and questioning so that they can provide feedback to their young students, rather than make assumptions about their ability to read online. Teachers who are supporting early reading practices need to be able to recognise how emergent readers understand they ways in which print-based and online texts work. Therefore, teachers need to assess their students’ knowledge of online reading to inform their decisions about later learning experiences with online texts. This finding has implications for policy makers, as we need to consider how to gather evidence about what emergent readers can and cannot do, when reading online texts, and we need to ensure that policy reflects the integration of technology within assessments. Therefore, this inquiry recommends that fundamental skills and strategies for emergent online reading be emphasised in further research.

Policy makers need to ensure teachers have access to suitable resources to support reading instruction for both offline and online reading

Further, in New South Wales a 375-page support document for the Australian Curriculum (ACARA, 2015) aims to identify suitable texts for developing young children’s reading. The texts listed were selected on the basis of their potential to engage young readers, and support their needs, interests and abilities. However, only four online texts are included in the list of recommended texts. The purpose of the document is to support teachers in implementing the curriculum, with the recommended texts being mapped against syllabus outcomes (ACARA, 2015). This is clearly disobligning of teachers when they are looking for guidance on how to meet their students’ current needs. This is of particular importance when we consider the frequent use of online texts by young children in the home setting (ABS, 2016). This has implications for policy makers, who need to recognise that teachers need access to appropriate resources to support the teaching of skills and strategies for online reading.

Policy makers need to support initiatives that provide funding for teacher professional
Leu et al. (2013) claim it is critical for educators to have an understanding of the many demands of online texts. There is robust evidence in the literature that effective reading teachers have deep knowledge and understanding about reading skills and how they are acquired (Husbands & Pearce, 2012). Teachers need to understand the skills and knowledge needed for early online reading (Coiro, 2011) so they can design and implement pedagogically appropriate learning strategies to support instruction for both offline and online reading. This has implications for the training of early career teachers and the skilling of more experienced teachers. Further, teachers need to be able to take the time required for effective professional development. Therefore, policy makers need to ensure that support is given to provide funding for teacher education in integrating technologies and the teaching of online reading in English curriculums.

Implications for research

Hamilton (2010) observes that our understanding of new literacies is continually evolving within the field of research. Leu et al. (2009) claim that it may never be possible to define new literacies because they are deictic and constantly changing. The literature argues that as new information and communication technologies are developed, still newer literacies emerge. The continuous and rapid nature of these changes generates new theories to help us understand them (Leu et al., 2013). This inquiry aims to contribute to future research by recommending the following points for consideration.

Exploring the fundamental skills and strategies young children need for online reading

If young children are to be fluent readers of both offline and online texts, equal attention must be given to print-based and online texts in curriculums and classroom practices. This view recognises the role of further research into the skills and strategies required for young children to read online. It also recognises the need to inform teachers (through assessment practices) and guide them (through appropriate instructional models) about what to teach young children and how to do so.

Findings from further research could contribute to such documents as the K-2 Literacy Continuum (NSWDEC, 2013) and the K-2 Student Learning Profiles (NESA, 2017) to support the monitoring of young children’s reading of both offline and online texts. Research that contributed to these documents could have the potential to support
teachers to give equal attention to offline and online reading instruction, and it could enable them to use pedagogies supportive of developing online reading practices concurrently with offline reading practices.

*Adopting research methodologies that give children’s perspectives on reading*

Whilst it is acknowledged that the researcher in this inquiry explicitly instructed the children in the skills and strategies needed to engage with an online text, it was they who selected their texts and designed and taught their lessons to groups of peers. They were given the opportunity to present their views and reflect on the experience, both orally and in writing. This inquiry found the Internet Reciprocal Teaching model to be a powerful pedagogy, as it provided the young children with experiences where their voices were valued, where the gradual transfer of responsibility enabled them to take control of their learning choices, and where authentic opportunities for collaboration and peer tutoring were provided. The opportunities for collaborative reading, reciprocal conversations, the creation of knowledge and problem solving that were afforded by this model, added to the rich layer of data collected across the cases. The use of Internet Reciprocal Teaching provided an environment in which valuable data could be obtained on the children’s perspectives. It also provided a framework in which their perspectives could be viewed with clarity. The same data may have been interpreted differently if it had been obtained using different data methods.

*Literacy as a social practice for young children who are emergent readers*

The pedagogy used in this inquiry allowed for the observation of literacy experiences within a social context, while the young participants practised the skills and strategies needed to make meaning from an online text. The analysis of the patterns of these events supported a deeper understanding of literacy as a social practice within the classroom context. The repeated patterns of observable events which occurred when using this approach allowed the researcher to draw conclusions about the beliefs, values and attitudes of the children regarding their experiences when engaging with the online texts. They experiences were provided by a pedagogy that afforded them multiple opportunities to further develop their literacy skills. By examining what occurred in this context through the lens of literacy as a social practice, the fundamental skills and strategies needed for early online reading could be identified. The child participants could demonstrate the ability to access, locate and navigate an online text independently, while developing technical skills and language to talk about the experience and the texts. Kii (2012) argues it is essential to view collaborative online
reading as a social practice, and that developing a deeper understanding of collaborative reading processes that aim at the co-construction of knowledge, provides opportunities to develop pedagogical practice.

**Conclusion**

Students need to become efficient information managers and reflective thinkers who can collaborate and communicate effectively in new and complex online contexts that are continuously changing (Castek et al., 2015). Developing literate students for today’s world is the core business of all literacy teachers. As young children move more towards an immersion in online environments, educational professionals need to work out ways to assess online reading and select suitable texts to inform appropriate pedagogies, so that young children can begin to develop the skills and strategies needed to proficiently read the vast array of texts that are now available online.

This inquiry argues that it is vital that policy makers give the same attention to both offline and online reading in curriculums from the early years, to prepare students to be skilled citizens in online reading. Giving offline and online reading the same attention in curriculums, will help guide teachers to effectively instruct young children in the foundational skills and strategies important for developing critical higher order thinking skills for proficient online reading.

This inquiry argues that it is important for teachers to be provided with ongoing professional learning opportunities to develop their own knowledge about reading online, and that they need to be familiar with the appropriate instructional approaches to support young children from the early years. This includes professional learning about accessing quality resources, in particular age appropriate online texts and technical support, and the tools to ensure all students have equal opportunities to learn to read online.

This inquiry argues for further research, that builds on what we already know about assessing online reading to develop valid and reliable online reading assessments for children in their foundational years. This is fundamental to informing the development of reading programs and appropriate pedagogies for emergent readers, allowing for full integration of online reading into classroom practice. *Castek et al. (2015)* argue that if today's learners are to become successful at literacy and life in a global information
economy, educators must transform classroom practice.

This inquiry presented a pedagogical framework that extended the Internet Reciprocal Teaching model to include teacher’s instructional practices for teaching emergent readers the skills and strategies needed for both offline and online reading. The framework aims to empower young children by skilling them as experts, and providing them with equal opportunities. The framework encourages active and collaborative engagement in learning experiences informed by assessment.

This inquiry has contributed to a deeper understanding of the reading demands of online texts for young children, and the pedagogies needed to support the development of skills and strategies for reading in the online environment. It emphasises the importance of understanding the increasing significance of online reading proficiency in the lives of our present and future young children. We know that early years are critical to literacy development and further research is clearly needed so that we can continue to understand the new literacies that will be required for young children to develop proficiency in online reading. Teachers must engage young children in equitable and meaningful learning opportunities to develop these new literacies, empowering them to reach their full potential as literate citizens.
REFERENCE LIST


Ewing, R. (2016). *Teaching literacy is more than just teaching simple reading skills: It can’t be done in five easy steps*. Sydney: Australian Literacy Educators’ Association (ALEA).


Leu, D. J. (2007). *What happened when we weren’t looking? How reading comprehension has changed and what we need to do about it*. Keynote research address presented at the Annual Meeting of the International Reading Association, Reading Research Conference, Toronto, CA.


APPENDICES

Appendix A: University ethics approval

APPROVAL LETTER
In reply please quote: HE14/258

19 August 2014

A/Professor Lisa Kervin
School of Education
Faculty of Social Science

Dear Associate Professor Kervin

Thank you for your response dated 9 August 2014 to the HREC review of the application
detailed below. I am pleased to advise that the application has been approved.

Ethics Number: HE14/258
Project Title: Examining and supporting reading comprehension of online texts for
young children
Researchers: A/Professor Lisa Kervin, Dr. Jessica Mantei, Mrs Jan Hutton
Approval Date: 14 August 2014
Expiry Date: 13 August 2015

The University of Wollongong/Illawarra Shoalhaven Local Health District Social Sciences HREC
is constituted and functions in accordance with the NHMRC National Statement on Ethical Conduct in Human Research. The HREC has reviewed the research proposal for compliance
with the National Statement and approval of this project is conditional upon your continuing
compliance with this document.

Approval by the HREC is for a twelve month period. Further extension will be considered on
receipt of a progress report prior to expiry date. Continuing approval requires:

• The submission of a progress report annually and on completion of your project. The
progress report template is available at http://www.uow.edu.au/research/ethics/human/index.html. This report must be
completed, signed by the researchers and the appropriate Head of Unit, and returned to
the Research Services Office prior to the expiry date.
• Approval by the HREC of any proposed changes to the protocol including changes to
investigators involved
• Immediate report of serious or unexpected adverse effects on participants
• Immediate report of unforeseen events that might affect continued ethical acceptability of
the project.

If you have any queries regarding the HREC review process, please contact the Ethics Unit on
phone 4221 3386 or email rso-ethics@uow.edu.au.

Yours sincerely

Professor Kathleen Clapham
Chair, Social Sciences
Human Research Ethics Committee

Ethics Unit, Research Services Office
University of Wollongong NSW 2522 Australia
Telephone (02) 4221 3386 Facsimile (02) 4221 4336
Email: rso-ethics@uow.edu.au Web: www.uow.edu.au
Appendix B: School system approval

Dear Jan,

Re: Application for the research project entitled: Examining and Supporting Reading Comprehension of Online Texts for Young Children

Acknowledgement is made of your application to conduct the above mentioned survey, in the

Approval has been granted for you to proceed at _____________________________. It will however be necessary to seek approval from the individual school principals, by requesting participation through the promotion of disseminating information to the schools.

Approval has been granted for you to contact the Principal/s of the following School/s:

- ____________________________

In accordance with the Agreement permitting you to conduct your Research within the

You provide a summary report of the project at your earliest convenience and within 6 months of the completion. Alternatively, inform me if the research project is discontinued, as this information will enable us to keep our records and files updated.

Please do not hesitate to contact me on ____________________ if you have any further enquiries. I wish you well with this undertaking and look forward to receiving your final report.

Yours sincerely,
Appendix C: School principal approval

To Whom It May Concern:

I write this letter in support of the research to be conducted by Jan Hutton through the resources of staff and students at [school name] School.

My understanding of the research is from Mrs Hutton’s Research Proposal entitled: "Examining and supporting reading comprehension of online texts for young children"

I am very happy to support this valuable research, to be conducted by a well-respected and professional colleague.

Please contact me at school if you require any clarification.

Principal
APPENDIX D
PRINCIPAL PARTICIPANT CONSENT FORM

Research Project: Examining and supporting reading comprehension of online texts for young children

The aim of this study is to investigate the acquisition of online reading comprehension skills by young children (age range 5-6 years) and the ways educators can support its development using an Internet Reciprocal Teaching model (Leu & Reinking, 2005).

Researchers: Mrs Jan Hutton, Assoc Prof Lisa Kervin and Dr Jessica Mantei

PRINCIPAL PARTICIPANT CONSENT:

☐ I have been provided with information about this study. I understand I can discuss it with the researchers (Assoc Prof Lisa Kervin, Dr Jessica Mantei or Mrs Jan Hutton) and to ask questions about the research and my participation.

☐ I understand the focus of the research is on the demands technology places on emerging readers.

☐ I understand and support the administering of the Digital Reading Assessment with some children in my school, have researchers classrooms to observe teaching and also support the collection of data sources such as photos, video and field notes.

☐ I understand the researchers will watch video recordings and examine field notes and photographs as part of data analysis. I understand that images taken from behind or in profile will be used in reporting the findings of this project to protect participants’ identities.

☐ I understand the school’s participation in the research is voluntary. I am free to withdraw inclusion in the research at any time. My refusal to participate or withdrawal of consent will not affect my relationship with either [REDACTED] or the University of Wollongong.

☐ I understand materials provided to me in the project are being piloted; as such I will not share these or provide copies to other colleagues.

I understand that if I have any inquiries about the research I can contact Assoc Prof Lisa Kervin (4221 3968) or Dr Jessica Mantei (4221 4435) or Jan Hutton [REDACTED]. If I have complaints regarding the manner in which the research is or has been conducted I can contact the Complaints Officer, Human Ethics Committee, University of Wollongong on 4221 4457.

By signing below I am indicating my consent to participate in the research project conducted by Assoc Prof Lisa Kervin, Dr Jessica Mantei and Mrs Jan Hutton. I understand the data collected for this study will be used to describe, categorise and disseminate findings regarding the ways children read online texts.

Principal’s Name: ____________________________

(please print)

Principal’s Signature: ____________________________

Date: ____________________________

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Appendix D: Participation information and consent forms

APPENDIX D

PARENT/GUARDIAN PARTICIPANT INFORMATION SHEET
Examining and supporting reading comprehension of online texts for young children

Research Project: Digital Reading Assessment: Exploring Concepts about Online Reading
The aim of this study is to investigate the acquisition of online reading comprehension skills by young children (age range 5-6 years) and the ways educators can support its development using an Internet Reciprocal Teaching model (Leu & Reinking, 2005).

Researchers: Mrs Jan Hutton, Assoc Prof Lisa Kervin and Dr Jessica Mantei

This information sheet details some research that three researchers would like to conduct in your child’s school. The research team (named above) is interested in learning more about digital reading (that is, reading websites on the computer). They want to know if different reading skills are required when a child reads a website compared to when they read a traditional book. The research forms part of Mrs Jan Hutton’s PhD research.

Who is involved? The research team (with your child’s teacher) will administer this assessment. Your child’s teacher will be trained by the research team to administer the assessment with the researchers. Your child’s teacher is knowledgeable in teaching early reading and is well known to the children.

What will the children do? Each child will work at the computer with a researcher (or the teacher) for about 15 minutes as the researcher administers the Digital Reading Assessment. In this assessment, the children view a website designed by the researchers and respond to the researcher’s questions about the ways they are reading the text and images on the site. This assessment will take about 15 minutes during class time.

What will the researchers do? The researchers will work with your child at the computer for the Digital Reading Assessment and collect some data for analysis later. Video footage, photos and field notes will be collected.

After the data is collected, the researchers will:
- Watch and analyse the video data of your child doing the Digital Reading Assessment
- Read and analyse the field notes taken while your child completed the Digital Reading Assessment
- Look at and analyse photographs of your child working with the teacher or the researcher.

* Please note: video footage is used only for data analysis and photos will be taken from behind your child so their face is not shown on the camera. This protects their identity later when the researchers report their findings.

The researchers will report their new understanding of reading online in journal and conference proceedings (with care taken to protect each child’s identity throughout).

What will the parents/guardians do? Your consent is required for your child to participate. This means you fill in the consent form and return it to your child’s teacher. There are no other expectations for parents in this study.

How will the children’s rights be respected? The research is conducted under the auspices of the University of Wollongong and the Department of Education and will adhere to strict ethical guidelines. For example, when reporting findings about how literature supports children’s learning, no child will be identified, participants’ interests are respected and raw data kept strictly confidential.
The research will not proceed without approval from the University and the Catholic Education Office.

What you should know:

- Your child’s participation is voluntary. You are not obliged to give consent and your child will not be adversely affected by non participation.
- Any child who is not a participant in the research will engage in the usual literacy session delivered daily in the class. The activities involved in the research compliment the usual daily literacy session. All research activities (gathering of data) will be conducted at school in the participant’s usual learning environment (classroom).
- As noted on the Consent Form you are free to withdraw consent for your child to participate in the research at any time without penalty.
- Nothing your child reads or shares as part of data collection, will affect their relationship with any member of the research team.
- Your child’s identity will remain confidential. In both the data analysis and when reporting the findings of the study, your child will not be individually identified.
- The benefits of research for your child, is that it will provide your child’s teacher with a deeper understanding of the skills and strategies children use when reading traditional print based text as well as information about the skills and strategies children use when reading a digital text. This will be of benefit to your child’s teacher as your child uses a device daily to support their literacy learning. The research will give your child’s teacher information about your child’s reading strengths and what they need to teach them next in their reading. The researchers cannot identify any risks in the research.
- If you have any concerns about the study, you should talk to Jan (382 3293) Lisa (4221 3968) or Jessica (4221 4435). Concerns with the way the research is being conducted can be addressed to the Complaints Officer, Human Research Ethics Committee, University of Wollongong on 02 4221 4457.

Thank you for your support in allowing your child to participate in this study. We hope you will find your child’s involvement to be worthwhile and valuable as they confront the challenges of reading in the modern age.

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APPENDIX D

PARENT/GUARDIAN PARTICIPANT CONSENT FORM

Examining and supporting reading comprehension of online texts for young children

Research Project: Digital Reading Assessment: Exploring Concepts about Online Reading

Researchers: Mrs Jan Hutton, Assoc Prof Lisa Kervin and Dr Jessica Mantei

PARTICIPANT CONSENT:

☐ I have been provided with information about this study. I understand I can discuss it with the researchers (Assoc Prof Lisa Kervin, Dr Jessica Mantei or Mrs Jan Hutton) and to ask questions about the research and my child’s participation.

☐ I understand the focus of the research is on the demands technology places on emerging readers.

☐ I understand my child will take part in the Digital Reading Assessment during class learning time. Included will be audio recordings and photographs of my child engaged in the Digital Reading Assessment task.

☐ The researchers will listen to and watch the video footage recording and examine the photographs as part of data analysis. I understand that images taken from behind or in profile will be used in reporting the findings of this project to protect my child’s identity. No images will be used in any public forum to protect my child.

☐ I understand my child’s participation in the research is voluntary. I am free to withdraw my child’s inclusion in the research at any time and they will still participate in the classroom learning experiences. My refusal to participate or withdrawal of consent will not affect my child’s relationship with either the school, Catholic Education Office or the University of Wollongong.

I understand that if I have any enquiries about the research I can contact Assoc Prof Lisa Kervin (4221 3968) or Dr Jessica Mantei (4221 4435) or Mrs Jan Hutton. I understand the manner in which the research is or has been conducted I can contact the Complaints Officer, Human Ethics Committee, University of Wollongong on 4221 4457.

By signing below I am indicating my consent for my child to participate in the research project conducted by Assoc Prof Lisa Kervin, Dr Jessica Mantei and Mrs Jan Hutton. I understand the data collected for this study will be used to describe, categorise and disseminate findings regarding the ways children read online texts.

Child’s Name:

Parent/Guardian’s name: ____________________________________________

(Please print)

Parent/Guardian’s Signature: ________________________________________

Date: ________________________
APPENDIX D

TEACHER PARTICIPANT INFORMATION SHEET

Research Project: Examining and supporting reading comprehension of online texts for young children

The aim of this study is to investigate the acquisition of online reading comprehension skills by young children (age range 5-6 years) and the ways educators can support its development using an Internet Reciprocal Teaching model (Leu & Reinking, 2005).

Researchers: Mrs Jan Hutton, Assoc Prof Lisa Kervin and Dr Jessica Mantel

Digital Reading Assessment: Exploring Concepts about Online Reading

This information sheet details some research that researchers would like to invite you to participate in. The research team (above) is interested in learning more about digital reading (that is, reading websites on the computer). They want to know if different reading skills are required when a child reads a website compared to when they read a traditional book.

Who is involved? We would like to invite you to be trained to administer and contribute to the analysis of this assessment. The research team will support you with this process. The training will be facilitated by the researchers at school and will take a workshop of two hour duration.

What will the children do? Your Year One students will individually work at the computer with you or the researchers for about 15 minutes as you administer the Digital Reading Assessment. In this assessment, the children view a website designed by the researchers and respond to the scripted questions about the ways they are reading the text and images on the site.

As you conduct the Digital Reading Assessment you are asked to support the collection of some data for analysis later. Video footage, photos and field notes will be needed. After the data are collected, the researchers will work to:

- Watch and analyse the video data of each child doing the Digital Reading Assessment
- Read and analyse the field notes taken while each child completed the Digital Reading Assessment

* Please note: video footage is used only for data analysis and photos will be taken from behind you and the child so your faces are not shown on the camera. This protects everyone’s identity later when the research team reports the findings. Video footage or photographs of yourself or students will not be used in any public forum.

The researchers will report their new understanding of reading online in journal and conference proceedings (with care taken to protect each child’s identity throughout).

What will the parents/guardians do? Consent is required for children to participate. This means parents/carers will need to fill in the consent form and return it to you before you collect any data. There are no other expectations for parents in this study.

How will the children’s rights be respected? The research is conducted under the auspices of the University of Wollongong and the Faculty of Education, and will therefore adhere to strict ethical guidelines. For example, when reporting findings about how literature supports children’s learning, no child will be identified, nor teacher named, so that participants’ interests are respected and raw data
kept strictly confidential. The research will not proceed without approval from the University and the Human Research Ethics Office.

**What you should know:**
- Your participation is voluntary. You are not obliged to give consent and you will not be adversely affected by non-participation.
- As noted on the Consent Form you are free to withdraw consent for participation in the research at any time without penalty.
- Nothing collected from you as part of data collection will affect your relationship with any member of the research team.
- Your identity will remain confidential in both the data analysis and when reporting the findings of the study.
- If you have any concerns about the study, you should talk to Lisa (4221 3968) or Jessica (4221 4435) or Jan (3224 8248). Concerns with the way the research is being conducted can be addressed to the Complaints Officer, Human Research Ethics Committee, University of Wollongong on 02 4221 4457.

Thank you for your support in agreeing to participate in this study. We hope you will find your involvement to be worthwhile and valuable as we work together to confront the challenges of reading in the modern age.

**Assoc Prof Lisa Kervin**  
Senior Lecturer,  
Language and Literacy  
Faculty of Education  
University of Wollongong  
Wollongong NSW 2522  
4221 3968  
lkervin@uow.edu.au

**Dr Jessica Mantel**  
Lecturer,  
Language and Literacy  
Faculty of Education  
University of Wollongong  
Wollongong NSW 2522  
4221 4435  
jessicam@uow.edu.au

**Mrs Jan Hutton**  
Education Officer  
National Foundation

Wollongong High School  
Market St  
Wollongong NSW 2520  
4282 0677  
jhutton@uow.edu.au
APPENDIX D
TEACHER PARTICIPANT CONSENT FORM
Research Project: Examining and supporting reading comprehension of online texts for young children

Researchers: Mrs Jan Hutton, Assoc Prof Lisa Kervin and Dr Jessica Mameti

Digital Reading Assessment: Exploring Concepts about Online Reading

PARTICIPANT CONSENT:

☐ I have been provided with information about this study. I have had the opportunity to discuss it with the researchers (Assoc Prof Lisa Kervin, Dr Jessica Mameti or Mrs Jan Hutton) and to ask questions about the research and my participation.

☐ I understand the focus of the research is on the demands technology places on emerging readers.

☐ I understand I will support the administering of the Digital Reading Assessment with some children in my classroom, have researchers visit my classroom to observe teaching and support the collection of data sources such as photos, video and field notes.

☐ The researchers will listen to and watch video footage, photographs and examine field notes as part of data analysis. I understand that images taken from behind or in profile will be used in reporting the findings of this project to protect my identity but will not be used in any public forum.

☐ I understand my participation in the research is voluntary. I am free to withdraw inclusion in the research at any time. My refusal to participate or withdrawal of consent will not affect my relationship with either the school, [School Name], or the University of Wollongong.

☐ I understand materials provided to me in the project are being piloted; as such I will not share these or provide copies to other colleagues.

I understand that if I have any enquiries about the research I can contact Assoc Prof Lisa Kervin (4221 3968) or Dr Jessica Mameti (4221 4435) or Jan Hutton [Contact Information] If I have complaints regarding the manner in which the research is or has been conducted I can contact the Complaints Officer, Human Ethics Committee, University of Wollongong on 4221 4457.

By signing below I am indicating my consent to participate in the research project conducted by Assoc Prof Lisa Kervin, Dr Jessica Mameti and Mrs Jan Hutton. I understand the data collected for this study will be used to describe, categorise and disseminate findings regarding the ways children read online texts.

Participant's Name: ____________________________ (please print)

Participant's Signature: ____________________________

Date: ____________________________
APPENDIX E - AUDIT TRAIL

**KEY: Codes for data sources**

<table>
<thead>
<tr>
<th>Data Collected</th>
<th>Assigned Code</th>
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</thead>
<tbody>
<tr>
<td><strong>Phase 1</strong></td>
<td></td>
</tr>
<tr>
<td>Classroom Observation- Field Notes</td>
<td>CO</td>
</tr>
<tr>
<td>Educator Initial Interview</td>
<td>EI</td>
</tr>
<tr>
<td>Educator Teaching Program</td>
<td>ETP</td>
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<td>Australian Curriculum Document Analysis</td>
<td>AC</td>
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<td>Concepts About Print</td>
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<tr>
<td>Online-Reading Assessment</td>
<td>ORA</td>
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<td>Child Participant Initial Interview</td>
<td>SI</td>
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<tr>
<td><strong>Phase 2</strong></td>
<td></td>
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<tr>
<td>Focus Group Interview</td>
<td>FGI</td>
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<td>EL</td>
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<tr>
<td>Focus Group Reciprocal Teaching Lesson Plans</td>
<td>RTLP</td>
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<td>Focus Group Reciprocal Teaching Observations</td>
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<td>Educator post interview</td>
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Audit Trail of the data

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<td>Case study- Nathan</td>
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<td>Focus Group interview</td>
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<td>Explicit lessons</td>
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<td>Focus Group interview</td>
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<tr>
<td>Reciprocal Teaching participant interview</td>
<td>RTPI-12</td>
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<tr>
<td>Focus Group Reciprocal Teaching self-reflections</td>
<td>RTSR-12</td>
</tr>
</tbody>
</table>
APPENDIX F: EDUCATOR INITIAL INTERVIEW

Initial individual semi-structured interview with classroom teacher

Following are the types of questions that were asked in the semi-structured interview with the teacher.

*Script:* Thank you for agreeing to be part of this research project. I am really excited to be working with you and your students. Before I begin working with the 13 students, I would like to ask you some questions about the students’ digital reading and writing practices in your classroom this year. Is that ok with you? Please remember that anything you say is confidential. Your identity will not be publicised during or after this study. Do you mind if I record our conversation so I can listen back to it later for analysis?

If consent, turn on the recorder, if not, start taking notes.

1. Can you tell me about the way you have integrated iPads into the literacy program this year?
   - What have you found particularly effective?
   - What have you found challenging?

2. How do the students in your class participate in online/digital reading?
   - What types of digital/online texts have you read?
   - What specific digital/online texts have your students read?
   - How do your students read the digital/online texts? ie. Independent, small group, whole class
   - What specific skills and strategies have you explicitly taught your students about digital/online texts?

3. What have you noticed about the differences and similarities between print-based reading and online reading?

4. How does the current syllabus require students to use technology in stage 1?

5. What are some of the learning and teaching experiences you plan for your students to meet stage 1 outcomes?

6. Do you think there are different skills and strategies required to be competent readers of online/digital texts?

7. How do you teach online reading skills and strategies to the children?

8. What do you predict the children will know about reading?
9. What do you think they will know about digital/online reading?

10. Do you predict any challenges they may have?

11. Can you tell me anything specific about each of the participants’ reading practices that you have observed or identified in the classroom?

*Script:* I am going to administer the ORA to the participants. You are now familiar with the ORA. I would like to ask for any predictions or insights you may have in regards to how the participants may respond to the assessment?

12. What do you predict will be easy for the students?

13. What do you predict may prove challenging for the students?
APPENDIX G: EDUCATOR POST INTERVIEW

Post-observation semi-structured interview with teacher

Following are the types of questions that were asked of the teacher after the student observations.

*Script:* Thank you for allowing me to work in your classroom over the past few weeks. It has been a pleasure to work with you and your students. To conclude this project I would like to ask you a few questions about the students’ online reading and their writing practices throughout the project. Is that ok?

1. After listening to the children share their reflections about teaching their peers an online text, what did you notice about their reading and writing practices, in particular when using technology?
   a. Where there any surprises?

2. Did the online reading lessons that the children designed and delivered match your expectations of them as readers and learners?
   a. Do their self-reflections match your expectations of them as readers?

3. Was there any information that the students reflected on that you believe is inaccurate? a. If so, why do you think that is?

4. Is there anything you have observed throughout this project that has helped you as a teacher to use online texts in the classroom?

5. What do you believe are the greatest challenges of reading online texts for emergent readers?
   a. What do you believe are the greatest challenges of teaching the reading demands of online texts to emergent readers?

6. What advice would you offer primary teachers when planning and programming for the inclusion of online reading in their own classrooms?
APPENDIX H: CHILD PARTICIPANT INITIAL INTERVIEW

Initial semi-structured Interview with children

Following are the types of questions that were asked in the semi-structured interview before students participated in the CAP (Clay, 1979) and ORA (Kervin & Mantei, 2015) assessments.

Script: I am a primary teacher just like your teacher ________________. I work at the University of Wollongong. At the moment I am working on finding out more about how Year One students are reading print-based and online stories. Your teacher thought that you would be a good person to show me what you know about reading and writing. Would you be interested in helping me out? Please remember that anything you say is confidential, which means I won’t tell anyone else that it was you who said something unless the information has a direct impact on your safety. Do you understand what I mean? I have a few questions to ask you first. Do I have your permission to record our conversation so I can listen to it later, please?

1. Tell me a little about the stories you read.
   • What types of stories are you interested in?
   • What do you find hard about reading?
   • What do you find easy about reading?

2. How about writing and creating. Tell me about a story you have made lately?
   • What was hard about it?
   • What was easy?

3. Can you tell me a little about the iPads you use in school?
   • How often do you use the iPad at school?
   • What do you enjoy doing most with it?
   • What do you find challenging with the iPad?

4. What is your favourite thing to do using the iPad?
   • What do you know about reading when you are using the iPad?
   • What do you find easy when using the iPad

5. Do you prefer reading stories on your iPad or reading a book?

6. Do you have an iPad at home?

7. How often do you use the iPad outside of school?
   • When do you use it?
   • And what for?
APPENDIX I: FOCUS GROUP INITIAL INTERVIEW

Following are the types of questions that were used in the focus group interview after the case study children had participated in the intervention (four explicit lessons). They then participated in a group planning session to select a text and to begin planning a lesson to teach a game to their peer group.

What game have you selected?

What is your game about?

What are some of the things you would need to know to play your game?

What language would you need to know to play this game?

What are some things your friends might predict about this game?

What are some questions your friends might ask you, that you will need to clarify for them?

If you needed to summarise what this game is about, what would you say?

Is there any information about this game you might need to know to tell your friends?

Why have you selected this game to teach your friends?

Do you think that your friends could play this game and why?
APPENDIX J: FOCUS GROUP INTERVIEW Self-Reflection

Post-observation semi-structured interview with children after Reciprocal Teaching

Following are the types of questions that were used in the semi-structured interview after the case study children delivered their lesson to a group of peers.

Was there anything that surprised you about your teaching?

Was there anything that confused you about your teaching? Did you do anything to work this out?

What did you do well when you were teaching your friends? What did you think about when you were teaching?

Was there anything that was difficult when you were teaching your friends?

What do you think your learners learnt during your lesson? What do you think they enjoyed?

Do you think what you know about reading on the iPad is important to being a good teacher? Why?

Would you like to teach your friends again in another lesson? Why?
APPENDIX K: EXAMPLE: FOCUS GROUP INTERVIEW

Reciprocal Teaching CHILD PARTICIPANTS

Post-observation interview with children after the lesson

Following are the types of questions that were used to prompt conversation in the unstructured interview after the children participated in a lesson taught by their peers. The researcher encouraged all participants to contribute to the conversation.

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<thead>
<tr>
<th>DATA TYPE (Interview Transcript) (RTPI)</th>
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<tbody>
<tr>
<td>Child participants in Kurt’s lesson (Katie, Ben, Tim)</td>
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<table>
<thead>
<tr>
<th>R: What did you like about the lesson?</th>
</tr>
</thead>
<tbody>
<tr>
<td>B: It was fun with friends</td>
</tr>
<tr>
<td>K: Kurt teached us</td>
</tr>
<tr>
<td>T: Tapping the balls</td>
</tr>
<tr>
<td>B: When the mushroom men were on the screen</td>
</tr>
<tr>
<td>R: What were some of the things you needed to know to play the game?</td>
</tr>
<tr>
<td>K: You had to touch the yellow balls</td>
</tr>
<tr>
<td>B: You had to press the yellow balls, but you had to press them softly</td>
</tr>
<tr>
<td>T: You had to watch for the balls and tap them</td>
</tr>
<tr>
<td>R: What was easy about playing the game?</td>
</tr>
<tr>
<td>B: Aww…it was hard at first, it wasn’t easy, my iPad wouldn’t load the game and I couldn’t type</td>
</tr>
<tr>
<td>K: but it was good when we got the WELL DONE</td>
</tr>
<tr>
<td>T: I got up to level 12</td>
</tr>
<tr>
<td>R: What was difficult for you?</td>
</tr>
<tr>
<td>T: It was hard when I first started to play and I couldn’t find the game</td>
</tr>
<tr>
<td>B: When I first started it was hard ‘cause the balls kept going…and I couldn’t tap them</td>
</tr>
<tr>
<td>K: It was hard touching the monster things and I couldn’t find it</td>
</tr>
<tr>
<td>B: I was pressing the screen too hard</td>
</tr>
<tr>
<td>R: What did Kurt do to help you?</td>
</tr>
<tr>
<td>T: Kurt told me and I learned a lot</td>
</tr>
<tr>
<td>B: Kurt told me I had to press softly</td>
</tr>
<tr>
<td>K: Kurt teached me how to touch the the yellow balls and he found the game for me</td>
</tr>
<tr>
<td>R: What did you like about learning with your friends?</td>
</tr>
<tr>
<td>K: Kurt teached me</td>
</tr>
<tr>
<td>B: My friends helped me</td>
</tr>
<tr>
<td>T: It was fun</td>
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APPENDIX L: EXAMPLE EDUCATOR INITIAL INTERVIEW TRANSCRIPT

<table>
<thead>
<tr>
<th>Data Type (E11)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Educator: Mrs Evan</strong></td>
</tr>
<tr>
<td>R Can you tell me about the way you have integrated iPads into the literacy program this year?</td>
</tr>
<tr>
<td>E Yes, the children have access to iPads every day in the literacy session</td>
</tr>
<tr>
<td>R What have you found particularly effective?</td>
</tr>
<tr>
<td>E The children are always engaged when they are using them</td>
</tr>
<tr>
<td>R What have you found challenging?</td>
</tr>
<tr>
<td>E When some of the children have difficulty with logging in…technical issues with the iPads…this interrupts my teaching as they are used as part of independent literacy activities in the session</td>
</tr>
<tr>
<td>R How do the students in your class participate in digital reading?</td>
</tr>
<tr>
<td>E Well…I use the Smartboard for whole class reading and the children use the iPads in literacy activities</td>
</tr>
<tr>
<td>R What types of digital text have they read?</td>
</tr>
<tr>
<td>E A variety… I use information text and websites to engage students using the Smartboard</td>
</tr>
<tr>
<td>R What specific digital <em>literary</em> texts have they read?</td>
</tr>
<tr>
<td>E Mm…perhaps I really don’t read literary texts online to them</td>
</tr>
<tr>
<td>R How do they read the digital literary text? i.e. independent, small group, whole class</td>
</tr>
<tr>
<td>E N/A</td>
</tr>
<tr>
<td>R What specific skills and strategies have you taught them about digital reading?</td>
</tr>
<tr>
<td>E Well, I really do teach tradition skills and strategies very explicitly, but I really don’t explicitly teach skills for online reading…you have given me something to think about</td>
</tr>
<tr>
<td>R What have you noticed about the differences and similarities between print- based reading and digital reading?</td>
</tr>
<tr>
<td>E Mm…children do have to use the skills and strategies for traditional reading when they are reading online…I need to think a little harder about this question</td>
</tr>
<tr>
<td>R How does the current syllabus require students to use technology in stage 1?</td>
</tr>
<tr>
<td>E They have to know simple word processing skills and view digital texts</td>
</tr>
<tr>
<td>R What are some of the learning and teaching experiences you plan for your students to meet stage 1 outcomes?</td>
</tr>
<tr>
<td>E Well…I plan my guided reading so explicitly, but I don’t use digital texts with these groups…only traditional texts; most of my teaching is at the point of need for the student…when they can’t do something; I’m really exposing them to using technology rather than explicitly teaching</td>
</tr>
<tr>
<td>R Do you think there are different skills and strategies required to be competent readers of online text?</td>
</tr>
<tr>
<td>E Yes…I think there are…and again you have given me something to think about</td>
</tr>
<tr>
<td>R What do you predict the children will know about reading?</td>
</tr>
<tr>
<td>E Definitely that it has to make sense; we do use explicit strategies of predicting, questioning and summarizing when we are reading, especially at a whole class level</td>
</tr>
<tr>
<td>R What do you think they will know about digital reading?</td>
</tr>
<tr>
<td>E Mm…probably how to access and use some apps; it is mainly apps that they use in literacy activities</td>
</tr>
<tr>
<td>R Do you predict any challenges they may have?</td>
</tr>
<tr>
<td>E Yes…I think it will be challenging for them</td>
</tr>
<tr>
<td>R Can you tell me anything specific about each of the participants’ reading practices that you have observed or identified in the classroom?</td>
</tr>
<tr>
<td>E The children you are working with are the lowest text readers across the year one classes; so they struggle with reading and also writing; some of the children access reading interventions</td>
</tr>
</tbody>
</table>
such as Reading Recovery and Minilit

**Script:** I am going to administer the ORA to the participants. You are now familiar with the ORA. I would like to ask for any predictions or insights you may have in regards to how the participants may respond to the assessment?

**R** What do you predict may be easy for the students?

**E** I think they will know that they have to make meaning from the text and hopefully use some of the knowledge they know about traditional texts

**R** What do you predict may prove challenging for the students?

**E** I’m not sure; it will be interesting to find this out; I look forward to some feedback regarding how they perform.
## APPENDIX M: EXAMPLE CHILD PARTICIPANT

### INITIAL INTERVIEW

<table>
<thead>
<tr>
<th>Data Type (SI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Child participant: Nathan</strong></td>
</tr>
<tr>
<td><strong>Initial interview transcript - Nathan (N) and researcher (R)</strong></td>
</tr>
<tr>
<td>R Tell me a little about the stories you read</td>
</tr>
<tr>
<td>N I like interesting stories</td>
</tr>
<tr>
<td>R What types of stories are you interested in?</td>
</tr>
<tr>
<td>N All types</td>
</tr>
<tr>
<td>R What do you find hard about reading?</td>
</tr>
<tr>
<td>N Mmm…sometimes I don’t know what the words are saying</td>
</tr>
<tr>
<td>R What do you find easy about reading?</td>
</tr>
<tr>
<td>N Looking at the words and the pictures</td>
</tr>
<tr>
<td>R How about writing and creating. Tell me about a story you have made lately.</td>
</tr>
<tr>
<td>N I write in my school journal…I write sentences about what the teacher asks me to do</td>
</tr>
<tr>
<td>R What is hard about writing?</td>
</tr>
<tr>
<td>N Spelling the words</td>
</tr>
<tr>
<td>R What was easy?</td>
</tr>
<tr>
<td>N Thinking up the stories</td>
</tr>
<tr>
<td>R Can you tell me a little about the iPads you use in school?</td>
</tr>
<tr>
<td>N Yep…we use the iPads at school</td>
</tr>
<tr>
<td>R How often do you use the iPad at school?</td>
</tr>
<tr>
<td>N Everyday</td>
</tr>
<tr>
<td>R What do you enjoy doing most with it?</td>
</tr>
<tr>
<td>N I like playing the ‘Frog’ game</td>
</tr>
<tr>
<td>R What do you find challenging with the iPad?</td>
</tr>
<tr>
<td>N Mmm…I don’t know</td>
</tr>
<tr>
<td>R What is your favourite thing to do using the iPad?</td>
</tr>
<tr>
<td>N I like playing the games</td>
</tr>
<tr>
<td>R What do you know about reading using an iPad?</td>
</tr>
<tr>
<td>N Mmm…I don’t know</td>
</tr>
<tr>
<td>R What do you find easy when using an iPad?</td>
</tr>
<tr>
<td>N Playing the games</td>
</tr>
<tr>
<td>R What do you find difficult when using an iPad?</td>
</tr>
<tr>
<td>N Mmm…I don’t really know</td>
</tr>
<tr>
<td>R Do you prefer to read stories using your iPad or in a book?</td>
</tr>
<tr>
<td>N I don’t really read stories on the iPad</td>
</tr>
<tr>
<td>R Do you have an iPad or computer at home?</td>
</tr>
<tr>
<td>N My Mum has a computer</td>
</tr>
<tr>
<td>R How often do you use the computer or iPad outside of school?</td>
</tr>
<tr>
<td>N My Mum doesn’t let me use it</td>
</tr>
<tr>
<td>R What do you do on your iPad or computer out of school?</td>
</tr>
<tr>
<td>N My Mum doesn’t let me</td>
</tr>
</tbody>
</table>
APPENDIX N: EXAMPLE- SEMI-STRUCTURED INTERVIEW Reciprocal Teaching SELF-REFLECTION

Post-observation semi-structured interview with case study participant

Following are the types of questions that were used in the semi-structured interview after the case study children taught their group.

<table>
<thead>
<tr>
<th>Data Type (RTSR)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ella</strong></td>
</tr>
<tr>
<td><strong>R:</strong> What was teaching like Ella?</td>
</tr>
<tr>
<td><strong>E:</strong> I had to show them step by step what to do and even though I was teaching they helped me; it took a little while ‘cause some of the iPads were reloading and we had to wait for each other ‘cause they were getting mixed up with pushing the wrong buttons and I really needed to show them which buttons to push</td>
</tr>
<tr>
<td><strong>R:</strong> Was there anything that surprised you about your teaching?</td>
</tr>
<tr>
<td><strong>E:</strong> Even though I was teaching them they were nice to me and helping me and doing what I was saying to do</td>
</tr>
<tr>
<td><strong>R:</strong> Was there anything that confused you when you were teaching?</td>
</tr>
<tr>
<td><strong>E:</strong> When I was first on the iPad I really didn’t know what buttons to press and it wasn’t that easy for me; I enjoyed them helping me try to press…um the buttons and I helped them…um and I also liked playing games and learning new things and I like tapping the fruit</td>
</tr>
<tr>
<td><strong>R:</strong> What did you do well when you were teaching your friends?</td>
</tr>
<tr>
<td><strong>E:</strong> Um…I enjoyed teaching because even though I was teaching they helped me</td>
</tr>
<tr>
<td><strong>R:</strong> Was there anything that was difficult for you when you were teaching?</td>
</tr>
<tr>
<td><strong>E:</strong> I had to think about the things I had to teach them next so they wouldn’t know what to do and they wouldn’t get muddled up and they wouldn’t have to go to the start again</td>
</tr>
<tr>
<td><strong>R:</strong> What do you think your learners enjoyed about your lesson?</td>
</tr>
<tr>
<td><strong>E:</strong> Well…um, because they were listening to me they got to complete their game and got their badge</td>
</tr>
<tr>
<td><strong>R:</strong> Do you think what you know about reading on the iPad is important to being a good teacher?</td>
</tr>
<tr>
<td><strong>E:</strong> Yes, cause they can help you and if you were by yourself there wouldn’t be too much you would know and if it was your first time on it</td>
</tr>
<tr>
<td><strong>R:</strong> Why?</td>
</tr>
<tr>
<td><strong>E:</strong> N/A</td>
</tr>
<tr>
<td><strong>R:</strong> Would you like to teach your friends again in another lesson?</td>
</tr>
<tr>
<td><strong>E:</strong> Yes, cause I am getting to learn new things so I can help my friends with it</td>
</tr>
</tbody>
</table>
Appendix O: Concepts About Print Assessment

Concepts of Print

PROCEDURE

1. The assessment area should be quiet and free from major distractions. Generally, a small table where the teacher can sit beside the child is sufficient.

2. Preview the prompts for the Concepts of Print Assessment. Mark locations in the book where you will ask specific questions. (Note: Using post-it notes labeled with question numbers will make the task easier. This will make it possible to move smoothly through the book reading the test to the child and asking the appropriate question when the opportunity arises.) Write anecdotal observations of students’ behaviors as they use the book.

3. The chart Concepts of Print – Teacher’s Words gives the teacher’s words for each section of the assessment. Begin by giving a text to the student. Be sure to hold the text by the spine of the book so you will avoid guiding the student in the use of the book.

4. Place a check (✓) in the column for a correct response. Place a (○) in the column for an incorrect or no response. Record the incorrect response in the comments column.

5. If the child struggles with the tasks on the Concepts of Print Assessment, discontinue and finish reading the book to the child. Make the experience a positive one.

6. Total the number of correct responses and record in the score box.

Notes: Sometimes children become confused about book, print, and reading concepts as they are learning. Reassessing some children on the entire Concepts of Print assessment may be warranted, especially if a child is making slower progress than you would expect.

It is not necessary, however, to re-administer the entire Concepts of Print assessment to every child. For some children it is sufficient to re-administer only the sections on which the child has difficulty.

ANALYSIS

Analyze the child’s correct and incorrect responses along with your observations of the child’s behavior about book features to determine Concepts of Print strengths and areas of instructional strategies. The teacher may use the italicized concepts to help in the analysis of the child’s performance. Begin analysis by categorizing the child’s response by concept. If the teacher found that a child had difficulty with the concept of letter, the next level of analysis would be to generate several questions about the child’s performance. Are the errors the child made due to the form of the letters (i.e. font style or size), the language that was used in describing the letters, (i.e. capital rather than big letters), or was the difficulty in the child’s understanding of the spatial positioning of the letter (i.e. first, last). Realize that the two prompts used for punctuation marks are quite different (name or function). Did the use of one prompt affect the student’s performance? The grid will help guide the teacher’s instructional decisions. A hierarchy in teaching concepts of print is book concepts, directionality concepts, reading concepts, concept of letter and word, and punctuation marks.
## Concepts of Print – Teacher’s Words

<table>
<thead>
<tr>
<th>No.</th>
<th>Concepts</th>
<th>Prompts</th>
<th>Responses/Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>FRONT COVER <em>(Book Concepts)</em></td>
<td>“Show me the front of this book.”</td>
<td>One point for correct response.</td>
</tr>
<tr>
<td>2.</td>
<td>BACK COVER <em>(Book Concepts)</em></td>
<td>“Show me the back of this book.”</td>
<td>One point for correct response.</td>
</tr>
<tr>
<td>3.</td>
<td>THE TITLE <em>(Book Concepts)</em></td>
<td>“Show me the name of this book or story.”</td>
<td>One point for pointing to title on cover or title page.</td>
</tr>
<tr>
<td>5.</td>
<td>BEGINNING OF TEXT <em>(Directionality Concepts)</em></td>
<td>“Show me with your finger where I have to begin reading.”</td>
<td>One point for pointing to the first word.</td>
</tr>
<tr>
<td>6.</td>
<td>LEFT TO RIGHT; TOP TO BOTTOM <em>(Directionality Concepts)</em></td>
<td>“Show me with your finger which way I go as I read this page.”</td>
<td>One point for moving left-to-right on page with finger.</td>
</tr>
<tr>
<td>7.</td>
<td>RETURN SWEEP <em>(Directionality Concepts)</em></td>
<td>“Where do I go then?”</td>
<td>One point for return sweep (top line to bottom line).</td>
</tr>
<tr>
<td>8.</td>
<td>ONE-TO-ONE MATCH <em>(Reading Concepts)</em></td>
<td>“You point to the words while I read the story.” <em>(Read slowly, but fluently).</em></td>
<td>One point for one-to-one matching of print with spoken word.</td>
</tr>
<tr>
<td>9.</td>
<td>FIRST WORD <em>(Concepts of Word)</em></td>
<td>“Use your finger to show me the first word on this page.”</td>
<td>One point for pointing to the first word on the page.</td>
</tr>
<tr>
<td>10.</td>
<td>LAST WORD <em>(Concepts of Word)</em></td>
<td>“Use your finger to show me the last word on this page.”</td>
<td>One point for pointing to the last word on the page.</td>
</tr>
<tr>
<td>11.</td>
<td>WORD <em>(Concepts of Word)</em></td>
<td>“Move your fingers until I can see one word. Now, show me two words.”</td>
<td>One point for BOTH correct responses.</td>
</tr>
</tbody>
</table>

Continued on next page.
# Concepts of Print

Individual Checklist

<table>
<thead>
<tr>
<th>Student Name:</th>
<th>Grade as of May, 2001:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>District:</th>
<th>Date Administered:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Recording:
- Indicate correct responses with a check (✓).
- Write (●) if the child cannot or will not give a response.

### The student POINTS to:

<table>
<thead>
<tr>
<th>Score</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. the front of the book
2. the back of the book
3. the title
4. the text
5. where to begin reading the story
6. the direction in which to read (left to right)
7. where to go next at the end of the line
8. words one-to-one as teacher reads one page (voice-print matches)
9. the first word on the page
10. the last word on the page

### The student FRAMES:

<table>
<thead>
<tr>
<th>Score</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11. one word/two words
12. the first letter in a word
13. the last letter in a word
14. one letter/two letters
15. The student points to and names any three letters on the page (_____ ____).

### The student points to OR frames:

<table>
<thead>
<tr>
<th>Score</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

16. a capital letter
17. a small letter
18. a period (.)
19. a question mark (?)
20. an exclamation mark (!)
21. quotation marks (")
22. a comma (,)

## TOTAL

Number Correct: ___________ /22 Possible

Adapted from *An Observation Survey of Early Literacy Achievement*, Marie M. Clay.
ADMINISTRATION INSTRUCTIONS FOR OUTSIDE ADVENTURES

T: This webpage is a blog. A blog is written by someone who wants to share their stories. [Refresh the page and scroll down so the page can be seen in its entirety.]
T: This is one story written by this blog author.

1. ORIENTATION TO THE SITE
a) T: Tell me some things you notice.
Indicate (1- # according to the order of response) child’s responses
T: What else do you notice? (Repeat 3 or 4 times as appropriate)

CHECKLIST:
- Background
- Title banner (headline)
- Scrolling banner
- URL
- Links (home/about me/contact me/games)
- Menu (left side)
- Advertisements
- Photo
- Text
- Animation
- Sound button
- Other: __________________________

2. EXAMINING THE MULTIMODALITIES OF THE TEXT
Record children’s comments to each question
a) T: Look at the things that are moving on the page. Why do you think they move? (Record child’s response)

b) (Teacher points to the black line showing horizontal menu).
T: What’s this for? (Record child’s response)

c) (Teacher points to the back arrow at the top left of web browser).
T: What’s this for? (Record child’s response)

d) (Use the mouse to circle “laser guns” and “ice cream” images)
T: Why do you think these are here? (Record child’s response)

e) T: Did you notice the animation? (Teacher refreshes the page to replay the animation)
f) T: Why do you think that was there? (Record child’s response)

g) T: If I wanted to hear the story, what could l do? (Record child’s response)

b) T: What’s your favourite part of the page to look at?
Indicate (1- # according to the order of response) child’s responses on the CHECKLIST:

- Background
- Title banner (headline)
- Scrolling banner
- URL
- Links (home/about me/contact me/games)
- Menu (left side)
- Advertisements
- Photo
- Text
- Animation
- Sound button
- Other: __________________________
d) CAPITAL AND LOWER CASE LETTERS

Demonstration: Using the mouse or trackpad, teacher highlights "D" and says:
T: Show me a little letter like this
If the child gets it correct:
T: Yes, that’s right, that’s a ‘d’
If the child is incorrect:
T: Here it is, it’s a ‘d’

Using the mouse or trackpad, the teacher highlights the "M" and says:
T: Show me a little letter like this (Record child’s response)
Using the mouse or trackpad, the teacher highlights the "L" and says:
T: Show me a little letter like this (Record child’s response)

5. EXAMINING WORDS

a) WORDS THAT CONTAIN THE SAME LETTERS IN DIFFERENT ORDER

T: This part of the blog says “Oh no,” said Dad. “Look at you two up on that wall. I was worried when I saw you. Hold on tightly. “We will!” they answered.
The child can highlight or point with cursor or finger to complete this task
T: Show me ‘was’
T: Show me ‘no’
The teacher can repeat the demonstration of highlighting again or just remind the child that they can use it to show the letters and words.

b) LETTER CONCEPTS

[In each part of b-e please record child’s response and the place or the text on the screen as well as their method of identification, i.e. point with finger, cursor or highlighting with mouse or trackpad]
T: Show me just one letter.
T: Show me two letters

c) WORD CONCEPT

T: Show me just one word
T: Now show me two words

d) FIRST AND LAST LETTER CONCEPTS

T: Show me the first letter of a word
T: Show me the last letter of a word

e) CAPITAL LETTER CONCEPTS

T: Show me a capital letter

6. CONTRIBUTING TO THE TEXT

T: We’ve looked at two blog entries now let’s see what the others are about. They are...
(Teacher reads the other titles on the vertical menu to the child). Tell me about the one that interests you. (Teacher and child have a brief conversation about the blog topic to prepare the child for writing).

T: That sounds like a good story for a blog. Tell me the story you would like as your blog and I will type it. (Teacher opens the Word document and double clicks the text box. Teacher scribes the dictated story. The aim is for the child to compose 1-2 sentences)

PRINT THE PAGE AND ASK THE CHILD TO COMPLETE THE PAGE (eg illustrate)
### Online Reading Assessment Analysis Grid

**Date:**

**Name:**

**DOB:**

**Recorder:**

**Age:**

**Computer:**

(Please circle) Laptop / Desktop / Other

(Please circle) Mouse / Trackpad

<table>
<thead>
<tr>
<th>YES/NO</th>
<th>ITEM</th>
<th>COMMENTS</th>
</tr>
</thead>
</table>
| 1a | In number order:  
- Background  
- Title banner (headline)  
- Scrolling banner  
- URL  
- Links: (home/about me/contact me/games)  
- Menu (left side) | □ Advertisements  
□ Photo  
□ Text  
□ Animation  
□ Sound button  
□ Other: |

2. **EXAMINING MULTIMODALITIES OF TEXT:**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2a</td>
<td>Movement of items – reason they move:</td>
<td></td>
</tr>
<tr>
<td>2b</td>
<td>Identifies purpose of horizontal menu</td>
<td></td>
</tr>
<tr>
<td>2c</td>
<td>Identifies purpose of back arrow</td>
<td></td>
</tr>
<tr>
<td>2d</td>
<td>Identifies purpose of advertisements</td>
<td></td>
</tr>
<tr>
<td>2e</td>
<td>Identifies purpose of animation</td>
<td></td>
</tr>
<tr>
<td>2f</td>
<td>Identifies purpose of sound icon</td>
<td></td>
</tr>
</tbody>
</table>
| 2g | Identifies favourite part (in number order)  
- Background  
- Title banner (headline)  
- Scrolling banner  
- URL  
- Links: (home/about me/contact me/games)  
- Menu (left side) | □ Advertisements  
□ Photo  
□ Text  
□ Animation  
□ Sound button  
□ Other: |

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APPENDIX P: EXAMPLE Child Participant PROFILE

Child’s Name: Kurt
Age: 5 years 10 months
Classroom teacher: Mrs Evan
Date of ORA: 5 June
Time: 9.30-10.30 am
Audit Trail:
- Teacher Profile of student (ETP)
- Video footage of ORA assessment (ORA)
- Online Reading Assessment Analysis Grid (ORA field notes)
- Child Blog response (ORA)
- Researcher field notes (CO field notes)
- Child participant initial interview (SI-10)
- Running records (ETP)
- Concepts About Print (CAP)

Introduction of Child/Background information:
- “Age 5 years 10 months” (ETP)
- “Eldest child in family, younger sister at preschool” (SI-10)
- “Youngest in his Year One class” (ETP)
- “lots of technology at home – computer, ipad, iphone” (SI-10) however, limited opportunity to use this at home; enjoyed using ipad at school and liked the FROG game
- “displayed an independent, confident approach to using technology” (CO1, ORA-10) loves using ipad at school (SI-10 Audio)
- “appeared confident in classroom- asked questions to teacher/peers/talked to himself while working (think aloud) (CO1)
- “writes/composes simple sentences” (CO1); letter formation needs work ( FGRTL-10; FGRTSR-10)

Concepts About Print:
- Kurt’s Concepts About Print assessment indicates that he has control over reading conventions (directionality, 1:1 matching, return sweep), the first and last concepts, bottom of picture, reading the left page before the right, identification of letters and words
- Kurt’s CAP identified some of the things he was unable to:
  - identify both changes in letter order
  - unable to identify meaning of a question mark
  - unable to identify meaning of full stop “to take some breathes”
  - unable to identify meaning of comma “it means his mum is saying it”
  - unable to identify both reversible words ( able to identify ‘was’, but not ‘no’)
  - unable to identify change in line and word order and
  - locate all lower case letters to match given upper case letters.
- CAP score: 12/24 (CAP-10)

Print Based Reading:
- Instructional reading level 9, Accuracy 91%, 1:5 self-correction rate (Text: The scary masks, PM photos, unseen text) (ETP)
- “At error used a lot of V info, some M and S, M and V and MSV together and SCed using MSV together and visual info”
- “not always reading to the punctuation”
• often attends to initial letter(s) to solve unfamiliar words, at times attempts to solve new words ‘letter by letter’
• “rereads to monitor”
• “cross checks visual information with meaning and structure to self correct; occasionally uses all three sources of information together to self correct”.

Online Reading:
Computer used: laptop, trackpad and mouse options used (ORA field notes; analysis grid)
• “he was very focused on the screen for the period of the assessment, he didn’t wriggle around… Kurt was very excited to use the computer and very still and focused throughout the assessment; he commented how “interesting” the webpage was (ORA-10).

Orientation to the site:
• “Went straight to the advertisements, then animation (“Kurt called this the zoo”) and photo (“Kurt called this an aquarium”) when presented with the blog page, didn’t seem to be too distracted by the background, or the moving letters or the colours at the top.” (ORA-10)
• Researcher: “you’re seeing lots of things, what are some of the things you can see on the webpage?” Kurt points to screen and reads words “my, mum, and, my”. (ORA-10)
• Researcher prompts him to think about what else he can see (ORA, script/field notes)
• “You can see the writing, can you see anything else on that webpage?” (ORA)
• Points to screen when noticing or commenting on the blog (ORA)
• “Lots of things at the bottom”, points to icons at bottom of the screen, “those ones are on mum’s computer” (ORA, field notes)
• Commented on the animation (calls it the “zoo”); researcher tells Kurt that is an animation (ORA, field notes); Kurt describes it’s purpose in single words, “people, animals, walking, eating” (ORA field notes)
• Started to comment on desktop items, researcher acknowledged and redirected, “we are going to look at things just on the webpage” (ORA)
• Kurt used some technical vocab; he was able to discuss how to click on games on the menu to get to games, able to discuss the purpose of the back arrow, able to read the word google on the search bar, his eyes were really looking.” (ORA field notes)
• Identified the animation – purpose of animation “to make you buy it” (ORA)

Examining the multimodalities of the text:
• Noticed words that were moving (ORA) “moving because they are telling you something” (ORA, field notes)
• Colours moving – “its like the colours are jumping out” (ORA field notes)
• Horizontal menu: researcher asks “what is this for?” Kurt- “sometimes it shows you which page you might want” (points to screen indicating horizontal menu) (ORA, field notes)
• Back arrow: “for turning the pages if you want” (ORA, field notes)
• Kurt states- “That’s easy for me to read (pointing to search bar) google” (ORA, field notes)
• When asked about the advertisements and what they were for Kurt responds “to show you how much things are” (ORA)
• Animation: Kurt responds- “yes, it tells you whether you are right or wrong about the story, it shows you what the story is about”… (ORA)
• Sound: Kurt: “ you can push the video button” (points to screen and identifies the sound icon) – (researcher points to sound icon to confirm “this one?”) Kurt: "yep, just push the button and hear the video sound” (ORA)
• Kurt adds- “My mum’s computer can watch tv on it and dvds” (ORA, field notes)
• Kurt’s favourite part - quick response: “I like the photo, because it has penguins in it…I think it’s upside down” (ORA-10).

**Directionality of text:**
• Points to screen; “it’s the story that is moving” but identifies where to start pointing at the left side of the screen (ORA, field notes)
• Where to begin; (K points to screen to show where to start) (ORA)
• Directionality; K shows directionality and also which way you can’t go. (ORA)
• 1:1 pointing - uses cursor (mouse) to point (ORA field notes)
• Researcher slows reading down to match Kurt’s pace with the cursor (field notes, ORA)
• Scrolling: K shows how to go down using curser and mouse (difficulty using trackpad) (K needs some assistance with how to click from R); K able to scroll down. Kurt: “there’s some more down there…scrolling down”; researcher confirms Kurt’s response: “that is scrolling down” (ORA); Kurt: “I think I can do that” (ORA)
• Bottom of picture: K points to picture at the bottom – Kurt: “there are penguins in the picture…but they’re underwater and upside down” (ORA)
• K does indicate the picture is upside down again (ORA, field notes)
• Inverted print: K responds “that one’s upside down, that ones upside down… we can read it upside down” (begins reading text). “I don’t know why it’s upside down” (ORA); K reads again some of the text upside down. (ORA, field notes)
• First and last – “To tell different stories”. Kurt: “At the zoo, At the pool…that’s a book I know that’s easy” (ORA)
• K points to screen to show first and last stories with confidence offers to read parts to researcher –Kurt: “that’s easy” (ORA)
• Line sequence: “it doesn’t make sense… actually these ones are supposed to be at the top; you made up that story” (ORA)
• K leans in as researcher reads text (ORA)
• Needed redirecting as to where to look for word sequence “the.. is supposed to be down the bottom” (ORA)
• Kurt questioned: “where are the monkey bars?” (ORA)
• Letter order sequence: Kurt looking really hard; K points to last word play and notices “I should be after the p, shouldn’t be a full stop there…doesn’t make sense” (ORA field notes)
• Word order: “it doesn’t make sense cause there needs to be a bridge in the picture” (ORA)
• Caption: Kurt responds “tells you about the picture” (ORA field notes)

**Understanding Punctuation:**
• Researcher demonstrates how to highlight “push and drag – you try it” (ORA)
• Kurt has several attempts to highlight, researcher demonstrates again and Kurt tries again without success (ORA)
• Points at screen to explain “question mark” tries to explain question mark without success (ORA, ORA analysis grid)
• Full stop “ it is a full stop”; couldn’t explain it’s purpose but can name it (ORA, field notes)
• Comma – “ exclamation mark”; incorrect name cannot explain purpose (ORA)
• Quotation marks “ I don’t know those” (ORA)
• Capital letters: concentrating and trying to highlight single lower case letters (ORA)
• Uses curser to point and identify letters/words (ORA)
• Kurt: “doesn’t make sense with the end as a d”; couldn’t locate little m; located capital L in Look for little l (used cursor) (ORA)

**Examining Words:**
• Kurt had a number of attempts at highlighting but wasn’t successful, particularly highlighting one letter (ORA)
• Needed to redirect Kurt to the space where we were working, he tended to be looking at another part of the blog, but still appeared engaged
• Researcher prompts again to assist with highlighting, click and highlight – (ORA)
• Researcher shows Kurt where to look “in this part here… we’re working in this part of the blog now” (ORA)
• K used cursor again to identify no but couldn’t locate was
• Researcher directing and modeling where Kurt needed to click as he was double clicking (opens box of options) and clicking off the screen while attempting to highlight, resulting in other windows/programs opening (ORA)
• Adequate “Wait Time” is given by R (ORA)
• Highlighting function: Kurt responds, “I can’t do that” (ORA)
• Researcher reopened blog, K had difficulty with highlighting so R prompted to point instead
• Kurt used cursor to locate o in look and t-o in two while saying “to”
• Couldn’t locate a word /or two words in text (perhaps frustrated he couldn’t highlight)
• Located lots of letters but not the first or last letter of a word eg Located w in wall instead of in we (incorrect)

Contributing to the Text:
• Kurt listened to blog topics, Points to “In the pool, “its a little bit like at the pool” (ORA)
• “It’s the same story in the book I read…” (ORA)
• Contributed “I wun a swimming ras i wun it because my brother poot his head up and i wun”.
• Drew a picture to support the story and created (stick figures around a pool) (child blog response)

Future Directions for Kurt identified by teacher after feedback of CAP and ORA results(ETP)
• Prompt for meaning and structure rather than him just focusing on visual information at error (ETP)
• Get him to attempt more chunks of visual vocab, parts of words instead of looking at isolated letters when attempting unknown words
• Encourage K to use all 3 sources of information at point of error
• Listen carefully to his own reading so that he will recognise when its not making sense
• Explicit teaching of unknown punctuation, encourage K to read to the punctuation – will assist with the understanding and meaning and structure
• Where meaning is disrupted encourage more pausing, rereading and reading on
• Build reading and writing vocab
• Encourage K to compose longer more complex sentences and to include new vocabulary in his writing
• Encourage correct letter formation and spelling of high frequency words

Analysis of data:
• Inconsistencies between CAP and ORA:
  - able to identify bottom of picture in CAP but not in ORA
  - able to identify a question mark in ORA but not in CAP
  - was able to identify both reversible words in ORA but only one in CAP
  - was able to identify change in word order in CAP but not in ORA
• Noticeable that the teacher’s (Mrs Evan) recommendations are all print based and do not identify further development of online reading skills and strategies.
**Appendix Q: Teacher Program (overview)**

**UNIT TITLE/ CONCEPT:** My Story, Your Story (Making Connections)

**Taught by:** [Teacher Names]

**DURATION:** Term 2

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### Focus Questions:
- What do I think of the character in this text? What personal connections can I make to my own experiences?
- How does making connections to characters, settings and events help me understand texts better?
- How do authors use characters and events to share with us their experiences of others?
- How do I create texts that share my experiences?

### OBJECTIVE 1

**ENI-1A EXPRESSING THEMSELVES:** responds to and composes a range of texts about familiar aspects of the world and their own experiences.

- Engage personally with texts
  - recognise and begin to understand that their own experience helps shape their response to and enjoyment of texts

- Develop and apply contextual knowledge
  - discuss how depictions of characters and events in print, sound and images reflect the contexts in which they were created
  - recognise simple ways meaning is created in texts shaped by structure and perspective

- Understand and apply knowledge of language forms and features
  - discuss aspects of imaginative texts such as setting and dialogue, making connections with students' own experiences

- Respond to and compose texts
  - compose simple print, visual and digital texts that depict aspects of their own experience
  - discuss characters and events in a range of literary texts and share personal responses to these texts, making connections with students' own experiences
  - discuss the place of Dreaming stories in Aboriginal and Torres Strait Islander life.

---

### OUTCOMES AND CONTENT DESCRIPTORS

**OBJECTIVE 2**

**ENI-1A SPEAKING AND LISTENING 1** - communicates with a range of people in informal and guided activities demonstrating interaction skills and considers how own communication is adjusted in different situations.

- listen for specific purposes and information, including instructions, and extend students' own and others' ideas in discussions
- understand that language is used in combination with other means of communication, for example facial expressions and gestures to interact with others
- use turn-taking, questioning and other behaviours related to class discussions
- engage in conversations and discussions, using active listening behaviours, showing interest, and contributing ideas, information and questions

**ENI-2A WRITING AND REPRESENTING 1** - plans, composes and reviews a small range of simple texts for a variety of purposes on familiar topics for known readers and viewers.

- understand how planning, composing and reviewing contribute to effective imaginative, informative and persuasive texts

- experiment in all aspects of composing to enhance learning and enjoyment

- understand the process of planning, drafting and publishing imaginative, informative and persuasive texts

- plan, compose and review simple imaginative, informative and persuasive texts on familiar topics

- compose texts supported by visual information (eg diagrams and maps) on familiar topics

- draw on personal experience and topic knowledge to express opinions in writing

**ENI-3A HANDWRITING AND DIGITAL TECHNOLOGIES** - composes texts using letters of consistent size and slope and uses digital technologies.

- develop clear and consistent writing using NSW Foundation Style as appropriate

- understand that the position and size of letters supports consistent hardwiring

- use appropriate strategies when writing, eg maintaining correct body position, holding using writing tools or using assistive digital technologies

**ENI-4A READING AND VIEWING 1** - draws on an increasing range of skills and strategies to fluently read, view and comprehend a range of texts on less familiar topics in different media and technologies.

- identify the parts of a simple sentence that represent "What's happening", "Who or what is involved?" and the surrounding circumstances

- understand how sentence punctuation is used to enhance meaning and fluency

- recognise sound-letter matches including common vowel and consonant digraphs and consonant blends

- automatically recognise irregular high-frequency words eg 'come' and 'are'

- use phonological, graphological, syntactic and semantic cues to decode and make meaning from written texts, eg using an increasing repertoire of high-frequency and sight words, segmenting words into syllables

- manipulate sounds in spoken words including phoneme deletion and substitution

- self-correct when meaning is interrupted in simple texts, eg pausing, repeating words and phrases, rereading and reading on

- use comprehension strategies to build literal and inferred meaning

- use background knowledge of a topic to make inferences about the ideas in a text

- discuss the use of text connections, eg sequencing ideas, indicating time

- sequence a summary of events and identify key facts or key arguments in imaginative, informative and persuasive texts

**ENI-5A SPELLING** - uses a variety of strategies, including knowledge of sight words and letter-sound correspondences, to spell familiar words.

- know that regular one-syllable words are made up of letters and common letter clusters that correspond to the sounds heard, and how to use visual memory to write high-frequency words [ACELA14778].

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## Appendix Q: Teacher Program (guided reading)

### LEARNING / TEACHING AND ASSESSMENT EXPERIENCES

**Highlight assessment for (AF), As (A) and Of Learning (AO)**

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<thead>
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<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
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<td><strong>READING AND VIEWING</strong></td>
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<tr>
<td>- self-correct when meaning is interrupted in simple texts, eg pausing, repeating words and phrases, rereading and reading on</td>
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<tr>
<td>- use comprehension strategies to build literal and inferred meaning</td>
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<tr>
<td><strong>SPEAKING AND LISTENING</strong></td>
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<tr>
<td>- explain personal opinions orally using supporting reasons, simple inferences and reasonable predictions</td>
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<td>- demonstrate active listening behaviour and respond appropriately to class discussions</td>
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### D.E.A.R

- Guided Reading
- Literacy Groups/ Guided Reading

### Guided Reading

**Focus:** Sentences = ideas/thoughts

1. Sequencing Cards
2. Silly Sentences
3. Phonics
4. Drawing Library
5. iPad

**Reading:**

- Same as Monday

### Guided Reading

**Focus:** Writing a series of sentences around a topic:

- Textbox: Dragon image: [image link]

**Writing:**

- In pairs, check their own sentences from yesterday to tick all parts of a sentence: capital letter, full stop, punctuation.

**Writing:**

- Look at this image of this tiny dragon (see powerpoint). What are you wondering? What is it doing? What is it thinking? What is it imagining? Students share ideas & add to google slide. Tell them, we can write about all these ideas to make our writing longer and more

### Guided Reading

**Focus:**

1. Spelling/Phonological Awareness - Consonant blends, - Hear & Record (Whiteboard Magnetic Letters)
2. Independent Writing - Free Choice
3. Guided Writing Group

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## Appendix R Teachers' Classroom Assessments

### School: 

### Teachers: 

<table>
<thead>
<tr>
<th>Name</th>
<th>Date of Birth</th>
<th>Date of Test</th>
<th>Instructional Book</th>
<th>Level</th>
<th>ACC %</th>
<th>S.C</th>
<th>LI</th>
<th>CAP</th>
<th>WT</th>
<th>BURT</th>
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<td>52</td>
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Date submitted: 18/03/2015

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APPENDIX S: INTERVENTION LESSONS
This is an overview of the four structured lessons delivered to the case study children in the Intervention. This occurred in phase one (teacher-led) of the Internet Reciprocal Teaching instructional model and where the researcher explicitly instructed and demonstrated to the case study children the skills and strategies to read online while using strategies predicting, questioning, clarifying and summarising and the think aloud strategy.

Using assessment data collected in phase one of the research design, the researcher designed the following learning activities.

<table>
<thead>
<tr>
<th>Structured lesson</th>
<th>Description of lesson</th>
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| **First lesson**  | **Purpose:** Introduce the online text and the reading task to the four case study children and explicitly teach the strategy predict to determine what might be required to play the online game  
| Duration: 20 minutes  | **Activity 1:**  
| Learning space: Verandah | ~ Together the researcher and the children explored and sampled the online resource  
| | ~ Researcher explicitly taught the predicting strategy by modelling the think aloud strategy to the children  
| | ~ Children selected a text and as they viewed the text attempted to predict (anticipate) what would come next and what they might need to know next to successfully play  
| | ~ Children discussed and shared their predictions to the group while viewing their selected text  
| | ~ Children individually shared their predictions of their selected text to the group  
| | **Language**  
| | ~ The researcher modelled language such as “I think, I bet, I suppose”  
| | ~ An information list was created to document the children’s predictions (responses).  
| | *Example of children’s predictions:*  
| | I think you have to put the letters here in this box  
| | I think you have to catch the monsters  
| | I bet you can go up levels  
| | I suppose you have to click the balls  
| | I bet you can win the game if you click the fruit  
| | **Resource:** ABCKids website |
| **Second lesson** | **Purpose:** To introduce and explicitly teach the questioning strategy to the four case study children  
| Duration: 20 minutes  | **Activity 2:**  
| Learning space: Verandah | ~ Together the researcher and the children reviewed the predicting and think aloud strategies  
| | ~ Researcher explicitly taught the questioning strategy (focusing on wonder questions)  
| | ~ Children then accessed and navigated the resource while thinking about what questions they might need to ask to successfully play  
| | **Resource:** ABCKids website |
Children then shared their questions with the group
Researcher documented children’s questions by creating a list

**Language**
The researcher modelled questions using language such as:
- I wonder what will happen...
- Why do you think...
- How do you....
- What will happen if....

*Example of children’s questions:*
- How do you type the right letters into the box?
- Where do you find the game?
- How do you catch the monsters?
- How can you get up the levels?
- I wonder what happens when you finish the game?
- I wonder if there is a winner in the game?
- How do you make things move?
- Which game do you have to play?
- What happens when you click?
- How do you go back?

**Resource:** ABCKids website

| **Third lesson** | **Purpose:** To introduce and explicitly teach the clarifying strategy to the four case study children  
**Duration:** 20 minutes  
**Learning space:** Verandah  

**Activity 3:**
- Together the researcher and the children reviewed the predicting, questioning and think aloud strategies  
- Researcher explicitly taught the clarifying strategy (focusing on clarifying the questions that were previously asked in the last lesson from the list created)  
- Researcher explicitly discussed and demonstrated how to identify the problem (questions) and then how to clarify the and solve the problem  
- Children then accessed and navigated the resource thinking about questions and how the question could be solved  
- Children then shared their problem (previous question) and their solution with the group to clarify the question  

**Language**
The researcher modelled appropriate language required to navigate the website while problem solving (clarifying) by using the think aloud strategy

*Examples of children’s clarifications:*
- You have to type the letters in the box here... *(R: this is called the URL)*  
- You have to click all the yellow balls to save the mushroom men *(R: that’s called the tapping skill)*  
- That tells you that the game is nearly ready to play *(R: that’s the loading icon)*  
- To play the game you need to get all the fruit into the jar to make the fruit *(R: that is the purpose of the game)*
You know you have finished 'cause a WELL DONE comes across the screen

**Resource:** ABCKids website

<table>
<thead>
<tr>
<th>Fourth lesson</th>
<th>Purpose: To introduce and explicitly teach the summarising strategy to the four case study children and to prepare them to plan their lesson</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration: 20 minutes</td>
<td><strong>Activity 4:</strong></td>
</tr>
<tr>
<td>Learning space: Verandah</td>
<td>~ Together the researcher and the children reviewed all strategies</td>
</tr>
<tr>
<td></td>
<td>~ Children then accessed and navigated the resource, selecting a text they would like to teach to their peers</td>
</tr>
<tr>
<td></td>
<td>~ Researcher explicitly modelled the summarising strategy (using her selected text and focusing on demonstrating to children how to summarise)</td>
</tr>
<tr>
<td></td>
<td>~ Children then navigated their text with the knowledge they would need to orally summarise their selected text to the group</td>
</tr>
<tr>
<td></td>
<td>~ Children then shared their summaries with the group</td>
</tr>
</tbody>
</table>

**Language:** (example of researcher modelling)

The most important idea in this game is...
This part is mostly about...
First....
Next....
Then....
Finally....
The game takes place....
The main characters are....
The problem in the game is....

**Resource:** ABCKids website

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Reference List