



MINISTRY OF EDUCATION NEW ZEALAND

Te Tāhuhu o te Mātauranga Aotearoa

Literacy teaching and learning in e-Learning contexts

Report to the Ministry of Education

Sue McDowall

for CORE Education and New Zealand Council for Educational Research

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Executive summary

Background to the research

This report presents the findings of a research project on literacy teaching and learning in e-Learning contexts carried out by CORE Education and the New Zealand Council for Educational Research (NZCER) for the Ministry of Education in 2009.

The project had two parts. One involved supporting the recipients of the 2009 e-fellowships¹ to design and implement classroom-based inquiries into literacy teaching and learning. The e-fellows presented their findings as e-portfolios.²

The other aspect of the project involved a meta-analysis using data collected from across the e-fellows' classrooms, to see how e-Learning contexts can be used effectively to support literacy teaching and learning. The findings of this analysis are presented here. Our data sources included: interviews with e-fellows, focus groups with students, classroom observations, documents including: teacher planning and student work samples, records of reflective conversations held during project hui or on-line, and the e-fellow portfolios.

The overarching research question for this project was: How are e-Learning contexts used effectively to support the literacy learning needed for the 21st century? The sub questions were:

- What can literacy learning look like in effective e-Learning contexts?
- What conditions support literacy teaching and learning in e-Learning contexts?
- How does exploring literacy teaching and learning in e-Learning contexts impact on teachers' thinking and practice?

Main findings

Student learning and engagement

We saw evidence of students' literacy learning as they built their capacity to: learn the code, make meaning, use texts, and analyse texts in a range of modes and with multimodal texts. Learning the code involves practices required to crack the codes and systems of language. Making meaning involves the practices required to construct cultural meanings of text. Using texts involves the practices required to use texts effectively in everyday, face-to-face situations. Analysing texts involves the practices required to analyse, critique and second-guess texts.

The e-fellows reported higher levels of student engagement during their e-fellow projects than in more traditional literacy activities. This was especially evident for students with a history of underachievement and lack of engagement.

Many of the e-fellows found that for some students in their classes, increased engagement or achievement in one mode seemed to be associated with increased engagement or achievement in another. For example, some students involved in

¹ For more information on the e-fellowship programme, see:
<http://www.minedu.govt.nz/educationSectors/Schools/Initiatives/ICTInSchools/ICTStrategy/LatestICTNewsAndReleases/ELearningTeacherFellowships.aspx>

² The e-fellows e-portfolios can be found at: <http://efellows2009.wikispaces.com>

filming, selecting music, designing costumes, or creating sound effects showed increased interest and ability when reading and writing print texts, even though this was not the primary mode in which they had chosen to work. These tended to be students who teachers described as reluctant or less engaged readers and writers. Working with multimodal texts in e-Learning environments provided opportunities for these students to work from their strengths, experience literacy success, build their interpretive capacities, and build meta-knowledge.³

Conditions of learning

We found seven conditions of learning common to the e-fellows' classrooms. The e-fellow projects provided students with opportunities to: work with a judicious mix of freedom and constraint, work with diverse others, specialise according to their strengths and interests, share ideas, revisit ideas, lead the direction of their learning, and work with experts. These are all conditions that researchers working in the area of complexity thinking have found to be present as complex systems evolve and develop.

The findings presented in this report highlight the ways in which ICTs contributed to the presence of these conditions and offered affordances for literacy learning which may not be readily available without them. We found that ICTs enabled students:

- to have greater choice about how to make meaning of and with texts than afforded in a print text environment;
- to work with diverse others by providing access to people and texts in a time and place that would otherwise be unavailable to them;
- to specialise according to individual strengths and interests by providing opportunities to make meaning in modes other than, as well as including, print text;
- to share ideas by providing a neutral, communal space accessible to all for the storage, retrieval, discussion, and adaptation of texts; and
- to reflect on, revisit, add to, and adapt ideas over time by making it easy to keep a record of every iteration of texts and discussions and by removing the laboriousness of editing that comes with the need to "re-write" when using pencil and paper.

Conditions of teaching

Overall, the e-fellows came from schools with focused leadership, committed to e-Learning. The schools ranged from those with fully equipped computer suites, ICT support staff, and class sets of equipment such as digital cameras, to schools with just one computer per classroom.

The e-Learning fellowship provided teachers with release time from the classroom to be used for activities such as: planning, observing, reflecting, working with small groups of students, reading and researching, conversing with and observing other teachers, and developing e-portfolios on their inquiries. The e-fellows considered that while they would have been able to achieve their results without this time, it enabled them to do so more easily, and to reflect more deeply on the process. The e-Learning fellowship also provided e-fellows time and space to meet together as a professional learning community and the e-fellows considered this to be important. Some felt that the e-fellowship also gave them licence to take risks and try new things.

However the most important factor in enabling the teaching and learning shifts discussed in this report were the e-fellows themselves. The e-fellows were experienced teachers with expertise in e-Learning and literacy teaching and

³ Meta-knowledge is use of the generalised knowledge of one area to understand the specifics of another.

learning. Prior to receiving an e-Learning fellowship all had already conducted informal inquiries into their project question. Some had been investigating their question for many years.

The main barriers experienced by some of the e-fellows related to the availability and reliability of ICTs, and, for one of the secondary teachers, constraining school ICT policies.

Where to next?

The findings presented in this report pertain primarily to literacy learning in English and the Arts, and to a lesser degree, the Social Sciences. However, we also need examples of literacy learning in e-Learning contexts within other disciplinary areas such as Science and Mathematics. Further research might also investigate teaching and learning about the ways in which literacy learning in one discipline may be similar to and different from that in another.

Chapter 1: Background to the research



Introduction

This report presents the findings of a research project on literacy teaching and learning in e-Learning contexts carried out by CORE Education and the New Zealand Council for Educational Research (NZCER) for the Ministry of Education in 2009.

The research project had two parts. One involved supporting the ten⁴ recipients of the 2009 e-fellowships⁵ to design and implement classroom-based inquiries into literacy teaching and learning. The e-fellows presented their findings as e-portfolios and these can be found at: <http://efellows2009.wikispaces.com>. They also presented their findings at the ULearn 2009 conference.

The other aspect of the project involved a meta-analysis using data collected from across the e-fellows' classrooms, to see how e-Learning contexts can be used effectively to support literacy teaching and learning. The findings of this analysis are presented here.

Research aims and questions

The aim of the e-Learning fellowships programme was to:

generate and increase the use of practical and quality evidence for the teaching community on how effective use of e-Learning can help teachers overcome specific challenges in their classroom practice and improve the learning experiences and outcomes for diverse students. (Request For Proposals, Ministry of Education, June 2009, p. 3)

The meta-analysis research questions were informed by this aim, the nature of the e-fellows' inquiries, themes from the research literature, and conversations between NZCER, CORE, and the Ministry of Education. The overarching research question for this project is: How are e-Learning contexts used effectively to support the literacy learning needed for the 21st century?

The sub questions are:

- What can literacy learning look like in effective e-Learning contexts?
- What conditions support literacy teaching and learning in e-Learning contexts?
- How does exploring literacy teaching and learning in e-Learning contexts impact on teachers' thinking and practice?

⁴ Due to a car accident one of the e-fellowship winners was unable to participate in the research.

⁵ For more information on the e-fellowship programme, see: www.minedu.govt.nz/educationSectors/Schools/Initiatives/ICTInSchools/ICTStrategy/LatestICTNewsAndReleases/ELearningTeacherFellowships.aspx

Theoretical frame

In framing our research we were conscious of the large body of literature addressing concerns about the capacity of current approaches to literacy teaching and learning to equip students for living and learning in the 21st century, and address the overrepresentation of particular groups in the tail of literacy performance.

We considered the literature on multiliteracies to be a useful starting point in assisting the e-fellows to frame their inquiries because it:

- focuses on new technologies, cultural diversity, and literacy;
- has future focused goals that align with those of *The New Zealand Curriculum* (Ministry of Education, 2007); and
- is grounded in practice, easily applicable to classroom contexts, and is relatively accessible.

Much of the multiliteracies research and literature has grown out of the early work of The New London Group (2000)—a futures thinking approach to literacy teaching and learning known as Multiliteracies Pedagogy.⁶

The New London Group argue that the traditional notion of literacy as learning to use a single national form of language, and as a stable system based on rules, does not adequately prepare students for participation in today's society. This is because increased cultural and linguistic diversity in local communities, and the proliferation of multi-media and information technologies are generating a plurality of texts and influencing the way in which meaning is created and exchanged. New technologies have led to an increase in communication modes and texts are becoming increasingly multimodal. To succeed in today's society students must be able to negotiate these multiliteracies and adapt to constant change. The New London Group (2000) identify two future focused goals for literacy learning:

- Creating access to the evolving language of work, power, and community; and
- Fostering in students the critical engagement necessary to design their social futures and achieve success through fulfilling employment (p. 9).

There are four main components to the Multiliteracies Pedagogy: Situated Practice (immersion in meaningful experience), Overt Instruction (describing patterns in meaning through explicit teaching), Critical Framing (explaining the purpose of different types of text, and whose interests are served), and Transformed Practice (applying new learning to meet the goals of the learner). Transformed Practice occurs when students work on existing resources of meaning (available designs) to produce new meaning (the re-designed).

Because the term “literacy” is given different meanings in different contexts it is important to be clear about what we mean by “literacy” in this report. We define literacy as the capacity to learn and transform discourses. We draw here on the work of James Paul Gee (2008)—one of the founding members of the New London Group. According to Gee, discourses⁷ are the ways particular groups of people (for example, certain sorts of lawyers, women, families, cultural groups, and so forth) behave interact, value, think, believe, speak, (and often) read and write.

Discourses are ways of being ‘people like us.’ They are ‘ways of being in the world’; they are ‘forms of life’; they are socially situated identities. They are, thus, always and everywhere social and products of social histories (Gee, 2008, p3).

⁶ For recent work on multiliteracies and its application to the classroom, see Anstey & Bull (2006).

⁷ In this report we do not adhere to Gee's (2008, p.154) convention of capitalising the “d” in discourse.

According to Gee, students are already proficient in many discourses on arrival at school. These discourses include the primary discourse of their family and community groups, and the secondary discourses such as their understanding of how to be, for example, a gymnast, a church goer, a collector of rugby cards, a bike owner.



At school there are new discourses to learn including those related to being the member of a classroom, school clubs and teams, and those related to different disciplines such as Science, Mathematics, and English. The e-fellowship application form invited applicants to submit proposals for inquiries into literacy teaching and learning in any discipline area. As we discuss, later in the report, the e-fellows projects were situated primarily within English and the Arts, and to a lesser degree, the Social Sciences.

According to Gee (2008), learning a new discourse requires immersion in practice and explicit instruction. In terms of Multiliteracies Pedagogy, these are the ideas of Situated Practice and Overt Instruction. According to the multiliteracies framework, Situated Practice needs to involve experts who can guide learners; provide an environment in which learners are secure, can take risks, and trust the guidance of others; take into account the affective and sociocultural needs of learners; use learners' experiences, out-of-school communities and discourses as an integral part of the learning experiences; and use assessment for formative purposes.

Overt Instruction recognises the importance of connecting contextualised-learning experiences (from Situated Practice) with a conscious understanding of elements of language meaning and design. In the multiliteracies framework Overt Instruction builds on pedagogies that explicitly teach rules and conventions, but it does not involve transmission, drills, and rote learning. Rather, Overt Instruction needs to: scaffold learning; allow the learner to build conscious awareness and control over what is being learned; make use of meta-languages⁸ that describe the form, content, and function of the discourses of practice; and provide formative assessment related to other aspects of learning, such as the use of meta-language in Situated Practice. Overt Instruction is especially important for students whose out-of-school discourses differ markedly from those of the school because it provides these students with the knowledge to represent themselves and express themselves in the school context.

We use the Four Resources Model (Freebody & Luke, 1990; Luke & Freebody, 1999) as a framework for analysing the literacy teaching and learning that occurred as students and teachers engaged in Situated Practice and Overt Instruction. The Four Resources Model separates the repertoire of literacy practices into four main roles: code breaker, meaning maker, text user, and text analyst, emphasising that each of the roles is necessary but not sufficient in any act of reading. The Four Resources Model was used to develop the framework for literacy acquisition presented in the *Effective Literacy Practice* books (MOE, 2003; 2006) and so the ideas underpinning this model are familiar to many New Zealand teachers.⁹ It is important to note that, although we use the roles from the Four Resources Model to structure the literacy learning chapter of this report, our interpretation of what it means to break the code, make meaning, use texts, and analyse texts is not based solely on the work of Luke and Freebody. The Four Resources Model focuses on written and spoken languages and visual images. In this report we apply the model to all modes of meaning making, including, for example, audio (the use of sound effects, music, and so forth). We interpret the term "visual images", broadly, as including print, gestural, and spatial modes of meaning making, as well as static images, such as illustrations and

⁸ Meta-language is the language used to talk about language itself.

⁹ In the framework for literacy acquisition presented in *Effective Literacy Practice* books (MOE, 2003; 2006) the role 'text user' was subsumed into the role of 'meaning maker'.

moving images, such as video. Further, the Four Resources Model was originally developed as a tool for thinking about reading and responding to texts and in this report we also apply it to the production of texts, for example, writing or performing.

To help us analyse the conditions in which the learning occurred we use ideas from complexity thinking as applied to education (Davis & Sumara, 2006; Davis, et al, 2008; Sumara, 2000).¹⁰ We do so because we see the education context, including students, groups, classes, schools, and so forth as complex systems. In particular, we make use of the conditions complexity thinkers have identified as being present when complex systems grow, adapt, evolve, and transform.

How the researchers and e-fellows worked together

The e-fellows, NZCER, and CORE formed a community of learners that met virtually and physically over the course of the project. The project ran throughout 2009. It began with an induction day in February, followed by a four-day hui in March, a two-day hui in August, and another in October. A project wiki¹¹ was developed and there were regular teleconferences. During on-line and in-person conversations, teachers and researchers discussed findings from the research literature, what was happening in classrooms, and emerging ideas and theories about literacy teaching and learning in e-Learning contexts.

Each e-fellow was assigned one researcher as a critical friend and mentor responsible for helping frame the e-fellow's inquiry, sharing relevant research literature, and engaging in conversation about the emerging themes. Researchers visited their e-fellow partners on at least two occasions for one to two days, and maintained contact online and by phone.

Data sources and analysis

The meta-analysis data sources included classroom observations, interviews with e-fellows, focus groups with students, and a range of documents. A more detailed description of each of these is provided below.

Classroom observations

The researchers visited the e-fellows' classrooms on at least two occasions to do a series of classroom observations. These included observations of teacher-led activities and observations of individuals or groups of students working on a task. The researchers recorded these events (audio or video) and kept running notes.

Interviews with e-fellows

The researchers also interviewed the e-fellows during each of the two school visits. In preparation for the interviews we asked e-fellows to keep a record of significant moments in terms of shifts in their own thinking or in students' learning to share with us on each visit. These came to be known as "ah-ha" moments. Some of the interview questions focused on these moments, and others focused on e-fellows' observations about shifts in their thinking and practice more

¹⁰ Complexity thinking is an interdisciplinary movement which draws a distinction between complicated and complex systems. In brief, complicated systems are those which can be reduced to the sum of their parts, such as machines, while complex systems are those made up of other dynamic and interrelated systems. Commonly cited examples of complex systems include cities, ecosystems, economies, and ant colonies. In the context of education complex systems are defined as systems that learn and produce new knowledge. Examples include brains, individuals, classroom collectives, and systems of knowledge such as English or science. Complexity thinking as it is applied to education, assumes that effective teachers work to occasion learning at the individual and collective levels simultaneously. For further information about complexity thinking as it applies to education, see Davis et al. (2008) and Davis & Sumara (2006).

¹¹ A wiki is a website for creating and editing linked web pages.

generally. The e-fellow interview also included questions about what and how children were learning, and the conditions that seemed to be supporting their learning. A copy of the interview questions can be found in Appendix A.

Focus groups with students

During each classroom visit the researchers also ran focus groups with small groups of students from the e-fellows' classrooms. The questions focused on student perceptions on what and how they had been learning as part of the e-fellows' projects. Where necessary we tailored these to the context of each e-fellow's classroom. In some cases we related the questions to the specific lessons we observed, in others to the whole unit of work students were involved in, and in some we combined these two approaches. These decisions depended on the nature of the project, and the age of the children concerned. A copy of the generic focus group questions can be found in Appendix B.



Other sources of data

In addition to the data sources described above, we drew on a range of other documents. These included:

- Teacher planning and student work samples;
- Records of reflective conversations held during project hui or on-line; and
- The e-fellow portfolios.

Data analysis

We analysed the data according to themes using a staggered and iterative approach. The data analysis occurred at several levels over the course of the project, with each stage informing the next. Our approach to data analysis was designed to ensure that e-fellows, as well as researchers, had input into the data analysis. There were opportunities for the group as a whole to engage in collective data analysis and discussion of emerging themes during the August hui.

Profile of the e-fellows

The application form for the 2009 e-fellowships required evidence of experience and expertise in literacy and in e-Learning, and many of the e-fellows had been already been exploring literacy in e-Learning contexts for several years before the project began.

Five of the teachers had between six and ten years of teaching experience, and the other four had over ten years' experience. Five held management positions.

Most of the e-fellows were very experienced working in e-Learning contexts. Six had been either lead teachers or ICT PD cluster facilitators and two had post graduate diplomas with an e-Learning focus.

All of the e-fellows had literacy interests and skills. Two had specialised in English as part of their teacher training at a time when this involved building their own capacity as readers and writers. Two had Bachelor of Arts degrees, and one had a speech and drama qualification. Six had school leadership responsibilities related to literacy. Nearly all had been involved in some form of professional development related to the English learning area.

Nearly all of the e-fellows had been exploring literacy and e-Learning ideas related to their e-fellowship topic and experimenting with these ideas in their classrooms for several years prior to their fellowship.

The 2009 e-fellows included two teachers working at the New Entrants to Year 2 levels; four at the Years 3–4 levels; two at the Years 7–8 levels, and one taught English at Year 11.

Seven of the e-fellows taught in primary and intermediate schools, and two taught in secondary schools. This was representative of the applicants overall. Few teachers from secondary schools applied. The e-fellows' schools ranged in size, decile, and composition. An overview of their characteristics is shown in Table 1.

Table 1: Characteristics of the e-fellows' schools

School	Decile	Type	School Roll*
Manaia View School	1	Full primary	270
Owhata Primary School	3	Contributing	290
Pine Hill School	3	Contributing	50
Otaki College	4	Secondary	530
Pekerau School	4	Contributing	280
Oamaru Intermediate School	5	Contributing	280
Auckland Girls Grammar	5	Secondary	1,320
Sunnybrae Primary School	6	Contributing	330
Hira Primary School	10	Contributing	80

* School roll rounded to the nearest 10.

The projects

The e-fellows' projects were all situated in the learning areas of English, the Arts, and to a lesser degree, the Social Sciences. This was representative of the applicants for 2009 e-fellowships overall. Most of the applicants proposed projects in the English learning area.

Outlined below is a brief description of each of the e-fellows' projects. In this report we refer to each teacher according to the class level of students they worked with during their e-Learning projects.

Connecting to picture books through student video dramatisations (New entrant teacher)

The new entrant teacher explored opportunities to interpret and analyse shared picture books when dramatising stories, podcasting, and making movies. She introduced a new picture book each week and integrated oral language, reading, writing, drama, and art into the learning around the book.

Sharing multi-media student stories via blogging (Year 2 teacher)

The Year 2 teacher explored ways to make the writing process more explicit to her students through the use of multi-modal language activities and visual planners. Students recorded verbal accounts or stories, rehearsed these with a "literacy buddy", and then wrote and illustrated their stories. They then used the written texts and oral recordings to create a multi-media presentation which they shared with classmates and families via the classroom blog. Readers of the blog were encouraged to give students feedback on their finished product, which in several cases led to further revision of the accounts and stories.

Writing narratives and sharing stories as movies (Year 3 teacher)

The Year 3 teacher explored opportunities for meaning making provided by the task of producing a multi-modal story. Her students wrote narratives about a mischievous character—Pesky the Possum—introduced to them by the teacher, and then converted their stories into movies. The teacher chose a target group of five students to work with intensively and these students became class mentors who could help others with their work.

Retelling and sharing stories using web 2.0 tools (Year 3/4 teacher)

The Year 3/4 teacher focused on the use of face-to-face and on-line formative feedback to enhance the engagement and achievement of her students in narrative writing. Students created New Zealand-based adaptations of traditional fairy stories, which they posted on the class wiki for formative feedback through all stages of the drafting, writing, and publishing process. They added oral recordings of the stories and illustrations to create multi-media presentations.



Collaborative storytelling using blogs (Year 4 teacher)

The Year 4 teacher explored the opportunities literature circles provided her students to interpret and analyse text. Students read a series of texts, posted responses from the perspective of their literature circle roles on the class wiki and engaged in extended dialogue about their different interpretations.

Producing content for a regional TV station (Year 4–6 teacher)

The Year 4–6 teacher investigated the impact of authentic audience and authentic learning activity on student engagement and literacy achievement. She taught a group of students who were withdrawn from normal classes for one day each week to produce and create their own movies, and to work as producers, directors, presenters and crew producing items for the regional TV station that had its studio in one of the school buildings. Students worked collaboratively in production teams to script and shoot animated movies using school equipment. They also worked as part of a real production team, developing items for broadcast by the regional TV station.

Reading logs as reading blogs (Year 7/8 teacher)

The Year 7/8 teacher investigated how opportunities to blog about books, with the support of a mentor, might enhance the engagement of reluctant readers. Her blogging group consisted of students selected from across the school and included 10 confident readers working as mentors in a one-to-one relationship with 10 “reluctant” readers (the buddies). The buddies, with the help of their mentors, posted reviews of books they enjoyed on a blog, together with supplementary material such as photographs of the book cover, and podcasts of passages read from the book.

Dispositions of literacy learners engaged in e-Learning (Year 7/8 teacher)

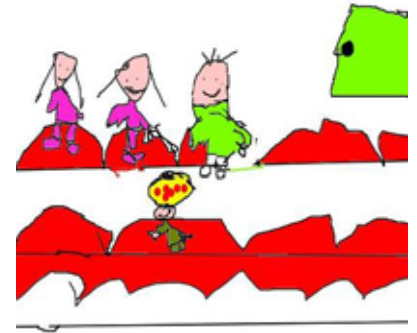
The Year 7/8 teacher explored the learning dispositions demonstrated by her students as they engaged in an integrated study of Shackleton’s leadership in Antarctica supported by e-Learning activities. Students worked in groups to create a class film depicting Shackleton’s journey with each group responsible for one part using the genre and mode of their choice.

Use of blogs and online communities in English (Year 11 teacher)

The Year 11 teacher explored her students’ out-of-school use of blogs and class wikis to prepare and practice for an NZQA Achievement Standard in formal writing. The class wiki provided students with the topics and live links to resources for a range of formal writing topics. Students had the option of completing formal writing practice on individual student blogs or with pen and paper. The teacher explored the impact this approach had over time on student participation, engagement and literacy learning as illustrated in their production of formal writing.

Overview of the report structure

This report is organised by theme. In Chapter 2 we describe the literacy learning occurring in the e-fellows’ classrooms, and in Chapter 3 we focus on student engagement. In Chapter 4 we describe the conditions in which student learning occurred, and in Chapter 5, the conditions of teaching. In the final chapter of the report we summarise the key research findings and consider their implications.



Chapter 2: Literacy learning

Introduction

Multiliteracies Pedagogy provides a framework for re-conceptualising literacy teaching and learning. However, teachers also need rich examples of what this teaching and learning might look like in practice. In this chapter we provide such examples.

The subheadings of this chapter have been drawn from Luke and Freebody's (1990, 1998) Four Resources Model. However, our interpretation of what it means to break the code, make meaning, use texts, and analyse texts is not based solely on the work of Luke and Freebody. As signalled in Chapter 1, we apply The Four Resources Model to all modes of meaning making, we interpret the term "visual images" as including print, gestural, and spatial modes of meaning making, and we also apply the Model to the *production* of texts (for example, writing or performing) as well as to the "reading" of texts.

We begin each section with our interpretation of what it means to break the code, make meaning, use texts, and analyse texts. We then provide examples from the e-fellows projects to demonstrate students' growing capacities in each of these areas.

Breaking the code

Breaking the code involves recognising and using the features and structure of texts. For example, with print text this requires an understanding of: the alphabet, sounds in words, spelling, and structural conventions (such as the "problem" that occurs in the middle of a traditional narrative or the summary of arguments that occurs just before the conclusion in an expository essay). Breaking the code also involves working out how different modes such as, print, illustration, and sound, all work together.

The e-fellows provided many examples of shifts in students' capacity to break the code of different types of text. Below is a sample of these.

Some of the acting and confidence and expression and use of voice has improved over the time we have been filming. I hadn't noticed until tonight as I have never watched all of the films together.

(New entrant teacher, blog)

Making the movies was a great opportunity for us to be using our newly developed KidPix¹² art skills and practicing using an effective story telling voice when creating our own Pesky the Possum narratives. Each student worked hard to follow the steps toward creating a published QuickTime movie of their story... (Year 3 teacher, interview)

They had a lot of spatial type discussions, when working out how best to show their part of the story. (Year 7/8 teacher, interview)

¹² Kidpix is a drawing programme for children.

They completely understand you have to have characters, setting, problem. They know what makes a story. (Year 3/4 teacher, interview)

I did some running records today...and some of the children have shifted five levels in five weeks.
(New entrant teacher, blog)

When talking about their learning many students also commented on their improved code breaking skills.

I learnt how to make a movie—all the little steps to get it right. (Student, Year 7/8 class)

I'm learning how to explore words because I used to see a word like 'brutal' and [before this project] I wouldn't know what it means and I wouldn't have gone onto the Internet to check out what it means...Like 'brutal'—I had no idea what it means but I found out...Another word is 'savage'. It's interesting and I'm finding out new words what I've never heard of before. (Student, Year 4 class)

I'm proud of doing the illustrator [role] because I normally find lots of mistakes [discrepancies between text and visual information] in my drawings and I quickly rub it out and do it better than the first time. (Student, Year 4 class)

I think I concentrated more on my spelling and punctuation cos in my first couple of essays it kind of brought my grade down so now I'm really trying to proofread as much as possible. (Student, Year 11 class)

Many of the e-fellows also observed shifts in students' ability to break the code in modes which had not been the primary focus of their project. For example, the Year 3 teacher found that after telling stories orally using the Easispeak¹³ one of her students began writing for the first time.

I didn't know he could write a sentence until the inquiry...This was a child who had amazing language but he never wrote. (Year 3 teacher, August hui)

After spending a week making and watching their movie based on the book *My Cat Likes to Hide in Boxes*, the new entrant teacher found that students who had previously been non-readers could read it. She attributed this to their experiences with acting out, filming and watching their movie of the story.

When I've been looking through the movies they are fulfilling something big for the boys that they might not have been getting elsewhere—the physicality, the dramatisation, the faces and being something from a book and I think it is affecting all their reading—it is transferring over to that a little bit more...They really do benefit from being able to be physical in these films. (New entrant teacher, interview)

Both the Year 7/8 teacher and the Year 4–6 teacher observed an increase in their students' writing skills even though their units were focussed on movie making. The teachers considered that because students had developed a better understanding of the connections between different modes as a result of the projects they undertook, they improved in all modes.

What you can learn in one area [of literacy] can enhance another. (Year 2 teacher, August hui)

¹³ Easispeak is a portable microphone/recorder which can be used to save audio recordings on the computer and replay them.

[They had] had improvements in reading retelling, sequencing the story, one thing following the other. The links between what authors and illustrators do... between making meaning and creating meaning...It is turning into a multi-literacy unit that will help them in the future. (Year 3 teacher, interview)

Those lower level boys—their reading levels have gone up because they're reading more [as a result of our fairy story multi-media creations]. They're re-reading their [own written] stories and they're reading the fairy stories. They are doing a lot more reading. (Year 3/4 teacher, interview)



Making meaning

Making meaning involves drawing on knowledge of the text and out-of-text knowledge. It involves generating, responding to, evaluating, and making choices about possible meanings that could be made in any given context. We describe these more fully in the following sections.

Knowledge of the text

Knowledge of the text requires an understanding of the relationship between function and form. The function of a text is its social purpose and thus includes a particular consideration of audience. The form of a text includes its mode and elements such as structure, language devices, language features, and punctuation. Many teachers found that students had little understanding of the relationship between function and form at the beginning of their projects.

I've felt that [the relationship between function and form] has been [something] that the children haven't understood—when they read a book, why is the picture this colour, why has the font got bigger, when we watch something on TV why have they done this, why have they used that sort of music, what was the message. And that as we move into the editing phase, so why are you using that? (Year 4–6 teacher, interview)

Teachers provided many examples of students learning about the relationship between function and form through their projects.

They had to plan their illustrations to support their piece of text. They had to understand the relationship between text and illustration...The links with the picture books worked well...They could see how the message is shared by the illustrator and the writer and how you don't have to tell everything with words. (Year 3 teacher, August hui)

They were totally fascinated by the challenge of creating music that fitted with their movie and their message. They explored all sorts of things. They watched movie segments. They talked about their feelings, how the character would be feeling in that particular scene and how they could show that to an audience. In the past they would just have picked hip hop. (Year 4–6 teacher, August hui)

The students are experimenting with the different text styles. Some have chosen old style writing and when asked why, they could justify it. [They would say things like] 'It looks like the olden days and fairy tales are stories from the olden days'. They are getting it. (Year 4 teacher, blog)

Making meaning of, and with, multi-modal texts involves drawing on all possible sources of meaning and interpreting the *relationship* between them. Sometimes, the meanings that can be made from one mode, e.g., printed text, can be supported by those in another, e.g., illustrations. At other times, these may “compete” to create effects such as irony or

humour. Teachers described how students were beginning to draw on multiple sources to make meaning and use such relationships.

[The children] understand story in the visual sense, mood, and music. (New entrant teacher, interview)

During our classroom observations we saw many examples of students building an understanding of the relationship between function and form. The example below is a five-year-old child's response to a page depicting the bird's death in *Roimata's Cloak*.

On one of the pages with the rainbow, how it looks so soft it kind of feels a little bit sad because it looks so soft because it's like something special when someone dies. (Student, New entrant class)

This student has learnt to identify a feature of the visual text (the soft colours and texture achieved through the use of coloured pencil illustrations), and to make meaning of this in relation to the written text and her own experiences of death (the sadness associated with someone important to her dying).

The following example is a Year 4 student's interpretation of the blank page that appears part way through the main character's diary in *Tomorrow is a Great Word*.

In the first reading it felt a bit scary because it had a blank page so it looked like she was going to die... (Student, Year 4 class)

Below is a focus group conversation in which the Year 4–6 students discuss the voices to use for their characters.

Student 1: My twin is nice and you know, like, kind of a mixture of Spiderman and normal like a little kid. And the other person that I am, they're soldiers for the bad guy who is mean and grumpy. So I do, I mostly only have a grumpy voice.

Researcher: What about you J, what voice are you going to use for your character?

Student 2: Probably a funny voice.

Student 1: His funny voice is when... he like flies off and then they do this funny, this 'go away' voice, like a scared voice.

The next three examples are excerpts from a focus group with the Year 3/4 students discussing the sound effects they intended to add to their slideshow stories.

Student 1: I'd have 'bom-boom, bom-boom, bom-boom' ...cos there's bats sleeping. Cos 'bom-boom, bom-boom, bom-boom' cos bats are approaching.

Researcher: Is the bom-boom to make it seem scary?

Student 1: Yeah

Researcher: And how do you think people would know that means scary?

Student 1: Cos it just is a sign.

Student 2: I could add happy music: La-lela, La-le-la.

Researcher: Yeah and what would the happy music tell the person watching the movie?

Student 2: It would be like then they know something good is going to happen—like the girl lives happily ever after.

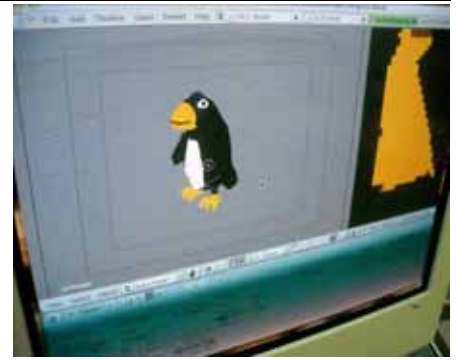
Student 2: When she (main character) is swimming away she could have like: 'ss, ss, ss, ss' cos she's like swimming really, really fast...

Researcher: Do you mean like escape music?

Student 2: Yeah like: 'daaaaow, daaaow' cos she's being all quiet.

Researcher: Oh—like secretly?

Student 2: Yeah secretly escaping. Like she gets into the water really carefully so they don't hear a big splash.



An understanding of the relationship between function and form provides students with the tools needed to adapt, modify, and parody conventions to create something new, and to recognise when such effects are used by others. Some of the students from the Year 3/4 class achieved this by mixing the language conventions of the traditional fairy story with contemporary jargon.

A prince, a king, and a queen lived in the big, big castle. The prince was handsome, the queen was beautiful, and the king was cool because he was a life guard and people liked him...

Some played on traditional fairy story beginnings and endings

As for the stepmother she was in danger because she had a pack of wolves around her, she did not live happily ever after...

...and they got married and lived happily ever after like every fairytale ends with.

Others replaced the unspecified place and time in which these stories are usually set with specific, contemporary, and local locations.

Once upon a time the water at Kāwhia was as flat as oil...

Once upon a time in a forest in Hamilton...

These examples show how all acts of meaning making are acts of re-design—a point that was not lost on their teacher.

It has been interesting to see how some of the stories have evolved from the basic fairytale into something quite different and intriguing. I am looking forward to seeing each new development in their stories. (Year 3/4 teacher, blog)

Drawing on out-of-text knowledge

Making meaning involves using out-of-text knowledge (social and cultural) much of which is implicit. This includes prior knowledge and experience. We saw evidence of students using out-of-text knowledge in conjunction with knowledge of the text to make meaning.

During one of our observations one of the new entrant students drew on his understanding of rewana bread, kēhua, taonga, karakia, to help his classmates make sense of a Robyn Kahukiwa story. When the classmates asked the meaning of “karakia”, he replied

Karakia's like a song to make that old kēhua leave.

When another pointed out the pounamu worn by the nanny in the story, this child replied

It's a taonga—like this one here. Me and K have one. I got this one from my old school...

One of the Year 4 teacher's students used his experiences of being in an earthquake to make inferences about the feelings of the main character in *Tomorrow is a Great Word*.

It was just so neat, he [the student] went on to tell us about his experiences of being in an earthquake and how scared he'd been, and how she [the character in the novel] must have been really scared.

(Year 4 teacher, blog)

Out-of-text knowledge includes knowledge of other texts and their conventions. Teachers described how students were learning to make connections with other texts, such as books, films, television programmes, and video games, to support their interpretations of text. For example, students from the Year 4 teacher's class compared the failure of the main character's parents in *Tomorrow is a Great Word* to return home during an earthquake with a similar story they had seen on the news. Below are some other examples:

Today we talked about Kehua and A Lion in the Meadow. I asked 'What is the same about these books?' They were so wise and articulate I wondered that I was in the company of five year olds. [The students replied] 'They are both about being scared. No one will come and help. It's both a scary thing'. (New entrant teacher, blog)

I had such a neat moment today. At the end of the story one of my children said out of the blue, 'I can make a connection between this and the Three Little Pigs story we read—they are both about fear'.

(Year 4 teacher, blog)

Teachers also provided examples of students drawing on other texts to help them with their own text production. This included drawing on content from other texts.

[I got my ideas] from a movie called Open Season... my favourite part of it is when the skunk throws his stink all over the hunters and there is a bit of a force field and there are death masks. (Student, Year 3 class)

It also included drawing on the form of other texts, such as the use of light to signal a good character, or the use of music to create suspense.

He was bad at first, then he become good. Then the spotlight was on, like a symbol, like on Batman.

(Student, Year 4–6 group)

I have [heard sound effects like this on movies]—like when sharks are approaching people. And on Play Station it has a big ears piranha fish and when you go into the water too deep it goes 'pikaaaah' and it goes 'bom-boom, bom-boom, bom-boom'. (Student, Year 3/4 class)

Generating and evaluating alternative meanings

Teachers described how, at the start of the projects, students often did not have the capacity to generate more than one meaning of or with a text or to evaluate the relative merits of different meanings. Nor did they know how to defend their own interpretations or challenge the interpretation of others.



This group of children...they've come through as a group and they've always been the ones who are the ones to talk in class and have the good ideas and no one's ever said I disagree with you, so in the beginning we talked about that and they said, 'People haven't ever said I don't agree with you because they don't know if they agree or not'. (Year 4 teacher, interview)

By the end of the projects, however, there were many examples of students learning how to present and defend their ideas, to support or challenge the interpretations of others, and to alter their own in the light of new evidence.

So they're expecting that somebody else can challenge them on something and they can change it [their mind] and that's ok and they're also saying no I'm going to keep this part in, I think it was important, so I'm keeping it in. And it's very, very cool that they're starting to feel more safe and secure in that everyone can have a different opinion. I think they're slowly moving off from the belief in there being a right or wrong [answer] and [are understanding] that I don't have all the answers. (Year 4 teacher, interview)

[They learnt] how to be able to reflect and connect and debate without one feeling that I don't have the right to an opinion and to be able to put the ideas together and then articulate that into a solution. It's about them understanding those roles. It's almost like that form of cooperative debate type thing. (The Year 4–6 teacher, interview)

[Student] will also really probe about things and so does [student], another child. She ... is so questioning about stories and analytical as well. (New entrant teacher, interview)

Students were very enthusiastic about their growing ability to generate more than one way of making meaning of and with text.

I like blogging and talking to people and making an argument. (Student, Year 4 class)

I like sitting in a group talking cos we're actually starting an argument cos everyone's got different reasons so it's like we're having a little war as talking. (Student, Year 4 class)

I'm proud that I can disagree with people because I used not to be able to disagree with people. (Student, Year 4 class)

Presenting, defending, changing, and challenging ideas required a level of text analysis that many students had not previously engaged in and many commented on how challenging they found this.

Student 1: I've learnt that you've got to read the story over and over again so you know what it means...I read it like four times at home.

Researcher: Some people would say that is boring?

Student 1: It's...so you know what it means...

Student 2: You have to ask people, you're asking people what their reason is and it's challenging for you cos you're trying to figure out which ones—which, which answer you think is the correct answer

Researcher: Oh, so is that the idea that you were telling me before, that all the people in the group might have different ideas and you have to work out which ones you agree with?

Student 2: Yeah. I think it's a challenge cos you never know what's right and what's wrong.

Using texts

Using texts involves understanding that texts perform different cultural and social functions. Using texts also involves understanding that these functions shape the way texts are used and shape the meanings that are made of and with them. Students need to know the conventions associated with using texts in different contexts and how these can be used and adapted these to suit particular purposes.

Teachers provided students with opportunities to become users of text by setting up environments that emulate those found in the real world of literary critics, TV presenters, writers, film makers, social commentators, and so forth. They did this by either drawing on their own expertise as members of these discourse communities in their out-of-school lives or by linking students with out-of-school experts. We provide more detailed information on how they did this in Chapter 4.

In this section we outline evidence that students learnt how to use multi-modal texts in a range of contexts, and learnt how to participate and contribute as part of the discourse communities in which their work was situated.

Learning words, acts, values, beliefs, and attitudes

Teachers described how their students learnt and adhered to the (often unspoken) conventions of the discourse communities in which they participated. This involved knowing not just what to contribute, but how and when.

We saw evidence of students using the technical terms and jargon of several of the discourse communities in which they worked. For example, the new entrant teacher's students used terms such as: expression, gesture, tone, clarity, transitions, voice-over, director, credits, and sound effects. The Year 4–6 teacher's students used terms such as: studio, producer, script, set, take, shoot, and green screen. The Year 3 teacher's students used terms such as: character, setting, plot, climax, problem, solution.

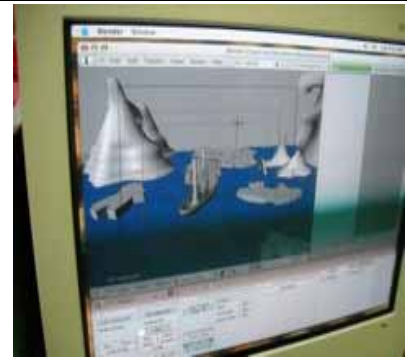
Students not only learnt the language of their discourse communities but *how* to use it. As one student from the Year 4 class said, "If you're doing the blog you have to write appropriate stuff". This involved an understanding of genre conventions, and we observed students learning these. During an observation in the Year 3/4 class, for example, four of the students spent some time debating whether or not the story they were writing adhered closely enough to the conventions of fairy tales or whether it was beginning to sound too much like a horror story.

Students also need an understanding of the conventions of spelling, punctuation, and grammar associated with their discourse communities. We heard students from both the Year 3/4 and the Year 4 classes express the concern that their work be spelt and punctuated correctly. This concern was tied to an understanding that this was a requirement of the discourses they participated in.

Understanding the conventions of a discourse community involves understanding when and how to be silent as well as when and how to speak. For obvious reasons students from all classes involved in video or audio recording quickly learnt to adhere to the convention of group silence prior to recording. The students in the Year 4 class learnt how to

listen to another's view point, and to clarify their interpretation of it before responding, and how to justify their own interpretations using evidence from the text.

We also saw evidence that students learnt the language and conventions required to use the tools of their discourse communities. This included cameras, video equipment, green screens, costumes, props, scripts, books, microphones, and computers.



We went over to the studio to do a mock shoot...they just walked straight in, 'Hi G, we're gonna get the cameras, and we will want it set up'. (Year 4–6 teacher, interview)

They filmed and presented [at a Māori principals' conference] and they were there in front of it as confident as. Here they were changing shots. One of the little ones who was acting as director started the thing and they were going to film, it was all intro'ed and then they turn round, 'Quiet! Quiet on the set. Filming now'. And in the middle of it someone made a booboo. 'Cut! Sound check'. And the principals are going like [Wow!] And you know, you get someone the same age as [student] doing that and it's like - apparently they were blown away! Then [student] sits there and takes two through ten questions, and an informal interview in Te Reo and responding and interacting and adding things... (Year 4–6 teacher, interview)

Students saw themselves as text users of the discourse communities in which they were participating, and this gave them a sense of purpose. When asked how the e-fellow project work differed from normal school literacy activities, one of the students from the Year 4–6 group, had this to say:

In our [normal] classes we just write about anything and we write about our weekends. But when we're doing it in here we write about what we have to film about, and that's helping us with like filming and getting us to know, like knowing to do that and all that stuff.

Students learnt and shared the values and beliefs of their discourse communities—that making meaning of and with text is a worthwhile endeavour; that it is hard work and requires patience, persistence, perseverance; that it is a collective as well as an individual process; that it is a knowledge generating exercise; and that it provides opportunities for creative thought, imagination, and sometimes for deep insight. We saw evidence of these shared beliefs, attitudes and values in the actions and words of students working as a collective on their shared tasks and in their reflective comments during focus groups.

Our observation of the new entrant students as they worked on their movies is one example. When they were recording and watching or listening to their productions the students demonstrated a heightened level of sustained concentration. Like real world directors, the students watched their movies with the eyes of film critics—acknowledging what had worked well and making suggestions for improvements. Here is an example of a post movie watching conversation.

Student 1: That was rock and roll fantastic

Student 2: It was funny

Student 3: It was a bit complicated

Teacher: What do you mean?

Student 3: It was a bit busy

Student 4: We read it descriptively

Student 1: We need to add some gingerbread music

Teacher: What does that sound like?

Student 1: Like this [hums]

The norms of discourse communities are established and maintained through repetition and monitoring by group members. Over time, we saw students beginning to modify their own behaviours and monitor the behaviour of others. For example, the new entrant teacher described how the “silly” behaviour of one child in front of the camera was quickly modified by the reactions of his peers who did not want their movie “ruined”. The Year 3/4 teacher described how one of her students challenged another for not taking on board any of the feedback she provided on his story. The Year 4 teacher described how one member of her literature circle group challenged another for not using punctuation in his blog postings and how several group members began to challenge another for consistently writing posts in which he expressed his agreement with the opinions of other group members without giving a reason.

Interestingly, if I wait, the children are beginning to monitor each other and starting to ask why someone has said something and asking them to add further to their post. (Year 4 teacher, blog)

We also saw evidence of this in student focus group responses.

When you do it [write your posting] you have to read it again. Sometimes people do stuff and it's not spelt correct so people don't know what the word's supposed to be. I'm scared that if I get a word wrong and then I post it, then the whole globe sees it. (Student, Year 4 class)

Building social identities

There were many examples of students learning the social identities of their discourse communities. The Year 3/4 teacher referred to her students as writers or authors because “that is how they see themselves” and the Year 2 teacher made a similar observation of her own students.

The new entrant teacher discovered that her students had told their reliever teacher the story she was reading would make a good movie and how to go about making it. She would be the director and they would be the actors, then they would add a voice-over.

The experience of participating in discourse communities helped students to “try on” and in many cases adopt the identities of community members.

I am a lead presenter for the show. (Student, Year 4–6 group)

I didn't know I could be a writer, but when I had a go I actually did it. (Student, Year 3/4 class)

I learnt how to work with a group—how to be a director and have people listen to me. (Student, Year 4–6 group)

It's good when you can learn new things instead of just doing normal schoolwork and it feels like you have a career suddenly... Since we get to do this every day nearly it's quite like a job or something but it's actually quite fun. (Student, Year 4 class)

Students saw their text production and interpretation not as practice exercises for when they “grew up” and carried out these activities “for real”, but as being viable and available for use in the real world here and now. Our observation of two students discussing the prospect of selling the movie they were making at an aunt's video store is an example of this. The idea one of the Year 4 teacher's students had about advertising their class blog on television so that more

people would visit is another—albeit somewhat difficult to achieve. We turn now to focus more closely on the impact of having an audience.

Having an audience

Having an audience was a fundamental component of the discourse communities students took part in. All of the projects but one had an audience of some kind. Most began with “captured” audiences consisting of peers in other classes, the school assembly, parents and extended whānau. The texts produced by students at five of the e-fellow schools were available online and received hits from around the world, but mainly from family and friends. The films produced by the students at two of the schools had a premiere for family and community members. The animations produced by the students at another school were aired on the local TV station.



As students developed their confidence, experience and skills they began to elicit more authentic audiences. For example, one of the bloggers from the Year 7/8 group sent an e-mail to the principals of local contributing schools to inform them of the school blog.

He composed this wonderful e-mail...The fact that (the students) are looking at how they can get the ball out a bit wider, to more than just our school's community reflects that they are actually proud of the work that they are doing; recognising that it is of value to more than just the people in our immediate community, and they want to celebrate what each other is doing. (Year 7/8 teacher, interview)

The students in the Year 2 class went online in search of an authentic audience. While their buddy class were great at commenting on their blog postings they were a captured audience and the class wanted an authentic one. They knew they were getting external hits on their site but not whether the visits were authentic. They decided that an audience could not be considered authentic “until we have some dialogue that they have been touched” (Year 2 teacher, August hui). In their search they found Room 6 Cyber kids and the students were so impressed with the aesthetics of their site that they emailed them to find out how they could “bling” their own blog. After making their alterations they got feedback from Room 6 cyberkids “We love your new background”, and so the dialogue continued. The Year 2 teacher concluded:

Connecting with these children was an authentic audience—they had been touched. (Year 2 teacher, August hui)

Teachers described how having an audience—whether captured or authentic—made students more aware of text use. For example, the Year 7/8 teacher described how reaching out into the wider community had encouraged her students’ thinking about the nature of their audience, and how to engage them in the blog:

(One student was) talking about a hook to hook them in. He tuned into what his book review is going to do. It is that knowledge of audience. And with that knowledge of audience they have to think about the skills they are applying to create it. (Year 7/8 teacher, interview)

The Year 4 teacher described how one of her students saw the “summariser” as an important literature circle role because those visiting the blog may not have read the story and so would need the summary to contextualise the blog comments made by other students in the group..

Having an audience also helped students adopt the social identities of their discourse communities.

These kids had experienced an authentic audience, the confidence of talking on [TV programme], leading it, making decisions on what was said, working on the script. Like adults they write that, all of that. (Year 4–6 teacher, interview)

That having this confidence in their literacy skills and being on air and being able to walk down the street, and hear ‘that’s the presenter on [TV show] ...I’ve seen you on telly’. And that doesn’t worry them now. They’re proud of it and it’s ok. But they’re not arrogant. They just feel good about themselves and that’s good. (Year 4–6 teacher, interview)

I like the feedback because it helps me get better at writing. It makes you be a reader and a writer. (Student, Year 3/4 class)

Engaging with members of out-of-school discourse communities

As students built their capacity and confidence to participate and contribute as members of their various discourse communities in school they also began to seek connections with members of these communities in the out-of-school world. For example, bloggers from both the Year 4 and the Year 7/8 teachers’ classes made contact with and received replies from the authors of books they had read. Below is the response one student received from Kate De Goldi

Hi [student], Kate De Goldi here...it was a buzz to see your review—it was so succinct and positive!...I tried to imagine I wasn’t me, and decided I would definitely want to read the book as a result of what you wrote...a writer’s dream comments...I’m glad you found it funny, too....I thought writing about anxiety in a moderately humorous way would be a more powerful way of communicating Frankie’s difficulties.

It’s incredibly nice to get feedback from a reader—doesn’t happen all that often—so I’m most chuffed...thanks so much. Hope you’re reading something else new and wonderful now...Have you read Millions by Frank Cottrell Boyce...I think you might enjoy that—very funny and poignant at the same time....warmest wishes, Kate. (Year 7/8 group, blog)

Soon after, the Year 7/8 teacher had the opportunity to meet Kate de Goldi (at the New Zealand Reading Association Conference), and expressed surprise that “She was just as rapt to see that he had taken the time to blog about the book”. This was not a case of a student sending fan mail or an author humouring him with a reply. It was a case of two readers and writers communicating within a common discourse community.

Analysing text

Analysing text not only covers critical thinking but also the broader aspects of critical literacy. Critical literacy involves considering the construction of texts and the power relationships established, questions of inclusion, exclusion and representation, and the ways in which texts can position a reader. Critical literacy involves questioning texts themselves rather than taking them at face value.¹⁴ The e-fellows saw the capacity to analyse texts in these ways as important.

You have to make them critical of that visual language though... It’s like television isn’t it? (A child in my class), he plays GTA [Grand Theft Auto] which is R18 and is serious, like shooting guns and prostitutes and everything...He is the loveliest child. Are his parents making the right choice for him? I don’t know. So hopefully you can give them a little bit of that [critical literacy skills]. (New entrant teacher, interview)

¹⁴ For further reading on critical literacy see: Antsey & Bull (2006); Knobel & Healy (1998); Lankshear (1994); Luke & Freebody (1999); New London Group (1996); and for recent New Zealand-based research: Sandretto et al. (2006a; 2006b).

Overall, there were fewer examples of students learning critical literacy skills than of breaking the code, using texts, and making meaning. Findings from this project suggest that younger students are able and interested and, perhaps most importantly, need to develop critical literacy, but are doing relatively little of it. Several e-fellows provided students with opportunities to see how texts position readers. For example, the Year 4 teacher began her literature circle unit with *The True Story of the Three Little Pigs* to demonstrate the way in which there is always more than one possible reading of a text and that stories are never neutral but told from particular positions that as a critical reader we must be aware of. The students' task was to discuss whether or not the wolf was really the victim, as portrayed in the re-telling. Later in her unit the Year 4 teacher discussed the idea of a new literature circle role—"the conscientious objector"—a role one of her colleagues was experimenting with in her own class. This role involved a consideration of the ethics of texts, characters, authors, and so forth.



The Year 7/8 teacher provided students with several different versions of the Shackleton story and gave them opportunities to watch video clips with the aim of increasing their capacity to analyse the different ways stories are, or can be, told and the effects of these different tellings. The Year 11 teacher began her unit on formal writing with the topic "Social networking sites such as MySpace and Facebook are endangering New Zealand teenagers" so that students had the opportunity to reflect on and learn more about the need to analyse texts and their sources.

These teachers described the ways in which their students' capacity to analyse texts developed over the course of their projects.

The kids are becoming quite discerning about the quality of what they are watching. (Year 7/8 teacher, interview)

Students learnt not just to practise critical literacy in relation to texts but also in relation to in their peers' attempts to make meaning of them. We observed an example of this in a discussion between a group of the Year 4 teacher's students in response to a decision the main character in *Kids alone in a Cyclone* had to make when offered a ride home by a truck driver she did not know as she and her younger brother fought their way through a violent storm. One of the students argued she should not accept the ride if the truck driver had tattoos.

I've had a thought. If the person, the truck driver, had any tattoos... It depends if they have offensive tattoos on their upper body because then they'd be really rough. (Student, Year 4 class)

Another child challenged her assumption that tattoos signify a person who is rough on the basis of different experiences and a different world view—that her father had tattoos and drove a truck. What was interesting was the lack defensiveness expressed by either child or of the group as a whole during this interchange. This was an interesting meaning making question to consider, just like the many other questions about text they had raised and attempted to answer many times before. In the student focus group following our observation, students talked about the importance of not taking texts or the interpretations of their peers at face value, and the importance of taking time to consider different perspectives. An excerpt of this conversation is included below.

Student 1: If someone has a question and if someone makes it...like [student] said if you talk to a stranger and he offers you a ride home and she said like if he has tattoos and is strong you wouldn't go with him and my Dad is strong and he has tattoos.

Researcher: And we know he is a good man.

Student 1: Yeah.

Researcher: So is what you're saying is that it's good for everyone to have time to say their views, otherwise E in that situation would never know that actually she could be wrong, but because she had the chance to hear your view she gets to hear another way of thinking about it?

Student 1: Yeah, and maybe a different way.

Student 2: Like [student] says, someone asks a question but a person could answer and you could get more possible reasons by getting answers off other persons.

Researcher: And why is that good?

Student 3: So people can have their say.

Student 1: Because you might be wrong.

Summary

In this chapter we have provided examples of what learning how to break the code, make meaning, use texts, and analyse texts across arrange of modes and with multimodal texts can look like in e-Learning contexts. We have presented the e-fellows' observation that, for students, achievement in one mode of meaning making often seemed to be associated with achievement in other modes, even when those other modes were not the activity's primary focus. Next we consider the question of student engagement, before moving on to Chapter 3 in which we explore the conditions for learning that were present in the classrooms, including those specific to the ICTs involved, and that supported this student learning and engagement.

Chapter 3: Student engagement



Higher levels of student engagement

Student engagement is important because of the correlations shown in the research literature between engagement and achievement in literacy learning (Wylie, Hipkins, & Hodgen, 2008). The e-fellows reported observing higher levels of student engagement during their e-fellow projects than in more traditional literacy activities. Indicators of high levels of engagement included increased: “on task” behaviour; concentration and perseverance; willingness to spend out-of-school time on project work; and fewer behaviour management problems.

Increased “on task” behaviour and sustained attention

One indicator of student engagement is the amount of “on task” behaviour exhibited. Teachers considered that more students were “on task” and for longer periods of time during the e-fellow project work than in traditional literacy activities.

They are on task longer. They did it for a whole day on Monday. I usually do twenty minutes a subject and I have to remind them to be on task two or three times. On Monday they worked through from 9.30 to 12.30 on one subject. It's massive! (Year 3 teacher, interview)

They are on task, they are working, they are thinking about what they are doing, they are engaged, they are succeeding. It's a real motivator for them. (Year 7/8 teacher, interview)

Not only did students stay on task for longer but they showed a higher level of concentration and perseverance than teachers had seen previously. This included a commitment to repeatedly revisit work to improve it, or stick with a problem until it was solved.

Some children will persevere to achieve a quality recording even if this means seven to eight takes. (Year 2 teacher, interview)

They were so certain they could have it look like that man flies through the air. They tried string, they tried nylon. They persevered for an hour and eventually they got it. (Year 4–6 teacher, August hui)

[There was] a lot of heated discussions about what shape to make: 'Is this good enough?' (Year 7/8 teacher, interview)

[The group] practised the difficult vocab over and over to get it right. (Year 7/8 teacher, interview)

We also observed numerous instances of high levels of student perseverance. The following discussion from a focus group with the Year 4–6 group was typical.

Researcher: Are there any bits you still need to improve before you are ready to film?

Student 1: Practice.

Student 2: Our script. Memorising. Cos we keep on getting muck ups and then we redo it and redo it.

Student 1: We're getting too excited and having to try do the filming but...

Researcher: So you've had several goes at the script?

Student 3: Yep. And we have to practise saying it. We have to practise saying it so you can memorise it.

Teachers also found that students were willing to revisit work to make improvements in a way they had not been prepared to previously.

The first thing that they're willing to do that the hand written people aren't willing to do is resubmitting their work...Like I noticed [student] did it nearly instantaneously. I'd written a comment and said this is only an 'achieved' at the moment, you need to do x, y, and z and by the next morning I'd had an email back saying, 'I've done those changes you want. Can you look at it again.' And that you don't get that instantaneous sort of reworking of a draft when you give them the piece of refill back and say do you mind re-writing that up. You never see it again. (Year 11 teacher, interview)

He has already said he's got so many suggestions to make it [his completed story] better. (Year 3/4 teacher, August hui)

Use of "free" time for e-fellow-related work

Another indicator of student engagement is willingness to take part in literacy activities when faced with a range of alternative options. The e-fellows provided us with many in-class examples of this happening. For example, the Year 3/4, Year 7/8 and the new entrant teacher all observed that students in their classes were reading more and more often in their own time.

They are doing a lot more reading...They used to just pick up the sports books and the comic books and look at the pictures. Now they actually read. (Year 3/4 teacher, interview)

It was lovely today to see two boys who don't normally choose to read in the snuggle corner, cuddled up looking at a book together. (New entrant teacher, blog)

The new entrant teacher also noticed an increase in the number of students in her class bringing books from home to share, making their own picture books, playing and acting out stories, and writing about picture book characters in writing time.

Four children have brought their favourite books in to share. I didn't ask them to or tell their parents. That's interesting. There is a kind of creative synergy that occurs when teaching and learning are at their best, a kind of group electricity that seems to take on its own momentum. It's happening now. It's fun and a bit dangerous. You don't quite know where it will lead. (New entrant teacher, blog)

I didn't ask them to do it but they just started writing spontaneously about the characters [from The Lion in the Meadow]. (New entrant teacher, August hui)

In many cases students were also choosing to work on literacy related activities at home. One of the most strenuous debates about the real victim in *The True Story of the Three Little Pigs* was carried out on-line at 7pm in the evening among three students from the Year 4 teacher's class. The Year 7/8 teacher had one student asking if she could continue contributing to the reading blog after her family moved to Oman, and another contributing during his holiday in Samoa. She also stumbled across a reluctant reader trying to finish her book at the squash club after school so that she could post it to the blog the next day.

The Year 7/8 teacher described how some of her lower ability students looked up Shackleton on Google at home, something that did not normally happen, and the increased interest and engagement in their work that this showed. The new entrant, Year 3/4, and Year 4 teachers all had students from their classes choosing to continue with their school literacy activities at home.



Two children made their own books at home and brought them to school today. The parents tell me the children are acting out stories at home now. The culture of the class is changing. (New entrant teacher, blog)

Even the parents have said they're [the children are] happy to pick up a book. (Year 3/4 teacher, interview)

I am excited by the success we are having with the children choosing their own books to read. I have had two parents comment about how their children are reading, reading and reading...and discussing the progress of their story. They have chosen lengthier books...They race to tell me each day what has happened in the story. They are eager to read each other's book next. I am seeing a growing love of books—what more can I ask for, a teacher's dream. (Year 4 teacher, blog)

Fewer behaviour management problems

Associated with an increase in on task behaviour in a number of cases was a decrease in behaviour management problems.

The students are buzzing and the 'reluctant' readers are tuned in the entire time in the classroom. Not once have I had any difficulty with management or ensuring someone is staying on task... (Year 7/8 teacher, blog)

Often things go missing in my room but the workbooks never did...They realised the value of them—that they couldn't go on without them. (Year 7/8 teacher, August hui)

Nearly all of the teachers told a story of a child or group of children they had found particularly difficult whose behaviour completely changed in the context of their e-Learning project.

He's a kid who locks himself in toilets and runs away. Yet here he is—he rocks up to bloggers every week. He got called out of bloggers and so he ran away because if he couldn't do bloggers, he wasn't going to do anything at all. (Year 7/8 teacher, interview)

He is showing a higher standard of writing and explaining, not straying from the task. (Year 7/8 teacher)

I just look at those boys. I couldn't have asked for a better change in attitude [to writing]. It's a complete change in attitude. (Year 3/4 teacher, interview)

He has been a kid right through his schooling who...teachers have [found difficult]. Well he's taken on this organisational [role], very great ideas, but not by putting down anyone, but just working all together. [He's] now become the ultimate little director, organisational person. It's quite fascinating...instead of being isolated and having to work on his own, or tossing out the bare minimum, he's now actually committed to tossing out product that's going to build on [his learning]. In the past have done [only] his one page. (Year 4–6 teacher, interview)

The Year 3/4 teacher told how the first student in her class to complete his story was a student who had never previously completed a piece of work. The Year 7/8 teacher told of a group of boys who revisited their work over and over to perfect it. These were students who would be “totally switched off if they had been given the traditional task of making a poster”.

Cross-mode transfer of engagement

Teachers found that for students engagement in one mode often led to engagement in another. For example, the Year 7/8 teacher and the Year 4–6 teacher both observed that students who had previously been reluctant to read or write showed greater commitment to these activities because their movie needed a script. The new entrant teacher found that playing, acting, painting, dancing, and talking about the stories students heard led to increased engagement in reading them, and in writing about them. The Year 3/4 teacher found that deep engagement in story writing led to increased student engagement in reading their peers stories and other texts.

What about the students who were not so engaged?

Most of the e-fellows had at least one student in their class who did not respond so positively to the environment created for the e-Learning projects. These were often students who had achieved well in more traditional literacy learning environments. For example, the Year 4 teacher considered the least engaged student in her literature circle group to be someone who needed the security provided by more traditional style reading lessons:

He's the one who hasn't made any great gains with this because he's still trying to see the easy side. And actually, I don't believe he's finished any role...To me I think he does have a lot of fear. He comes across as a confident boy but I think very much with his background and things like that, that he has to be right...[He prefers an [approach where] he can go to it [the page] and find an answer and that will be it. It doesn't really require anything greatly from himself. (Year 4 teacher, interview)

The Year 3/4 teacher considered that the students whose stories did not evolve were students who relied on a more teacher directed and structured approach to writing.

They were not used to making decisions for themselves. (Year 3/4 teacher, interview)

Some kids I thought would find certain tasks easier have struggled. Maybe [it is] because they like more structure. One kid was 'not coping'. [Her parent] said she [the child] didn't know what to do. You could see their lack of confidence. (Year 3/4 teacher, interview)

The Year 7/8 teacher also noted that a less structured approach to reading led to some students “coasting”.

There are some 'avoiders' though who have been happy enough to have their mentors 'model' reviews for them, with very little effort from them required. (Year 7/8 teacher, blog)

The teachers responded by providing these students with options that included more structure. For example, rather than handing all her students the responsibility for choosing their own novels for their literature circle, the Year 4 teacher gave students the choice of doing this or working more closely with her on a novel that she had chosen. Several students, including the one referred to in the example above, took this safer option. The Year 3/4 teacher chose to work more closely with those students in her class who needed more direction. The Year 7/8 teacher added an accountability component to the blogging process (a log to fill in when students completed a book and an entry space for them to reflect on their posting) as a means of supporting the students referred to earlier who appeared to be “coasting”. Teachers saw these as interim measures—a way of scaffolding these students towards more independent and self directed learning.

Summary

The e-fellows' observations that most students demonstrated higher than usual levels of engagement in their e-fellow project work supports the evidence of student learning presented in Chapter 2. As indicated at the start of this chapter, there is a large body of evidence in the research literature of links between student engagement and student achievement in literacy learning. The research evidence tends to centre on reading and writing but the evidence collected in this project suggests that this is likely to be so in other modes as well. Further, the findings from this project suggest that increased engagement and achievement in one mode, such as animation or dance, may in fact relate to improved engagement and achievement in another. Further research is needed to confirm this possible relationship.



Chapter 4: Conditions of learning

In this chapter we describe the conditions for learning, including those specific to the use of ICTs, that were common in the e-fellows' classrooms. These include opportunities to: work with a judicious mix of freedom and constraint; work with diverse others; specialise according to their strengths and interests; share ideas; revisit texts; lead the direction of their learning; and work with experts.



Opportunities to work with both freedom and constraint

The e-fellow projects provided students with the balance between freedom and constraint needed for generating new knowledge. Nearly all of the projects involved a big question or complex challenge and an extended period of time to work on it. Students could choose how to go about defining and tackling their task within certain broad limits.

Ensuring the right amount of freedom and the right amount of constraint needed for students to generate new knowledge requires considerable skill. It involves attempting to balance the constantly changing constraints and possibilities provided by the context (e.g., the learning environment, including ICTs, texts, tasks, and so forth) and by the students themselves. It involves balancing constraints emerging through the co-action of the students and their contexts as new knowledge emerges. This required of teachers a deep understanding of the affordances of various ICTs, a deep understanding of how texts work, and a deep understanding of their students.

The degree of constraint necessary in any situation is dependent on many factors, including the task, the texts, the technologies, the teacher, the students, and the time frame. Texts, for example, have differing degrees of ambiguity and ambiguous texts invite multiple interpretations, whereas didactic, explicit, or prescriptive texts or texts presented as factual or “true”, place more constraint on the reader.

We saw evidence of teachers engaging skilfully in the act of balancing the amount of freedom and constraint present in the constantly changing learning environment of their classrooms. For example, because she wanted expansive questions that could generate rich and multiple interpretations of text, the Year 4 teacher decided to take on the literature circle role of “questioner” herself until her students had time to practise this skill.

These questions need to be ‘fat’ questions that will get us to think about what we have read, offer opinions, challenge what we believe from the story. (Year 4 teacher, class blog)

The Year 4 teacher initially modelled the role of questioner by asking “Who is the victim?” following a reading of *The True Story of the Three Little Pigs*. This question, with this text, combined with students’ knowledge of the traditional story *The Three Little Pigs*, provided the possibilities and the constraints needed for generating new interpretations - that is, they provided an interpretive space. In the following weeks the Year 4 teacher set about supporting students to ask such questions themselves through explicit instruction, modelling, and feedback.

One of the challenges the Year 4 teacher faced concerned the nature of the texts her school had in multiple copies. These texts often lacked the complexity or ambiguity needed to generate rich and extended debate.

[My] greatest problem still at the moment is finding multiple copies of the books I want to use...This does make it harder as the books have got to grab me and the children. An issue I guess that needs to be addressed is that the books we have in school that have multiple copies are pretty lightweight and I

don't believe will do much to promote discussion. Perhaps I am underestimating them? (Year 4 teacher, blog)

Like the Year 4 teacher, the new entrant teacher found that to elicit multiple interpretations of text through conversation, writing, art, and dance she needed ambiguous text, so she selected a range of picture books of this nature. She noticed that while a light-weight rhyming story read by a local author entertained her students, it did not deeply engage them in the way that more ambiguous texts such as *The Lion and the Meadow* did.

The Lion In The Meadow is a bit more of a mystery. Like a good painting it takes a while to allow the layers of meaning to find a place in our experiences, our understanding, our deeper selves. Rhyming is fun but in my experience of little people, they actually really appreciate a bit of drama, a really good story, a bit of a puzzle. (New entrant teacher, blog)

However, the new entrant teacher also found that complex interpretive tasks, such as making a movie, worked better using simpler and less ambiguous texts. She found that texts such as graded readers reduced, and so made more manageable, the interpretive possibilities.

To make movies from the picture books requires a lot of creative thinking and it does evolve but they are much bigger projects than simply acting out a traditional story. That is because to create a movie from a picture book really requires quite a lot of interpretation in a different way and it isn't as straightforward. I like to do it but it needs more time. The picture books have all evolved into some creative project but not necessarily a film. (New entrant teacher, blog)

Like the new entrant teacher, the Year 7/8 teacher found that making a movie required her to provide greater constraints than other, less complex interpretive acts. She provided these constraints by giving each group responsibility for depicting only one section of Shackleton's journey. She gave each group a chapter from a simple text designed for seven-to-eight year olds describing the section of the journey they were to depict.

The Year 3 teacher provided some constraints on the narrative writing task she set her students by introducing a character, "Pesky the Possum," and a story starter around which the students were required to centre their stories.

[Providing the possum character] restricted what they are doing by saying that it must be a Pesky story, yet at the same time they have got enough engagement and ownership and personal identity with their story that it works. (Year 3 teacher, interview)

She described this as one of her learning moments.

I have found that balance between providing a topic or an inspiration and allowing freedom and ownership.

As a result of her e-fellow experiences, the Year 11 teacher decided to disband the traditional secondary school approach to studying a novel, in order to increase student freedom and reduce the level of constraint in the unit. Instead she planned to let her students choose their own novel and develop a study guide for it in a form of their choice (website, visual presentation, podcast, webcast, or word document) to share with others in the class.

I think it's got real potential. There's this sort of element to English, where you can go through novel studies...sort of from the front and we go through it...character, theme, ra ra ra, and I just think no I'm actually gonna hand it entirely over to them, put a whole lot of links up on the website and point them in the direction and give them a very clear structure of what they've got to do. (Year 11 teacher, interview)

Student focus group responses suggest that opportunities to be immersed in complex learning situations with the right balance between freedom and constraint were an important condition of their learning. In most cases students commented on their increased freedom, the difficulties and challenges this provided, the deep engagement and motivation they experienced as they grappled with complex problems, and the satisfaction in solving them. For example, the Year 4 teacher's students made the following comments when asked to consider how they thought blogging about books differed from their previous experiences of reading at school.



Well it's quite different. Doing this is like exploring a new country or something...Cos it's really different to normal reading. You think it's just about reading a book and answering questions when you first start...It's very different like I said before. Because you're not just reading a story, you're exploring a whole new world really. And you're meeting new people and looking up new websites.
(Student, Year 4 class)

Being an illustrator is a bit like a puzzle question because you have to always ask, 'How do I do this?' and 'How do I do this?' And you have to explore every little bit, and ask people what their answer is and what their reason is. (Student, Year 4 class)

You have to look everywhere. You have to ask people. You're asking people what their reason is and it's challenging for you cos you're trying to figure out which answer you think is the correct answer.
(Student, Year 4 class)

Maybe because we do think, we think and discuss. We didn't use to discuss what the answer is, and with this one [this way of doing reading] we actually, we actually have to sound it out with people.
(Student, Year 4 class)

So far we have concentrated on the contribution of texts, tasks, and technologies to the possibilities and constraints present in any given situation. The pool of knowledge and skill sets within a group of students working together also contributes to this mix. The wider and more diverse the range of knowledge, skills, and experiences, the more possibilities there are. We turn to this topic next.

Opportunities to work with diverse others

The e-fellow projects provided opportunities for greater diversity than a traditional reading or writing group. Eight of the projects involved students working in mixed ability pairs, groups, or classes: one had students from different classes over three year levels; two involved students from different schools; three involved whānau and community members; and three involved experts such as authors, television producers and so forth. Teachers considered that opportunities to work with diverse others and diverse ideas contributed positively to their students' learning and engagement.

Students were also exposed to a wider range of text mode, type, and difficulty. For example, students from two of the e-fellows' classrooms conversed face-to-face and on-line with community members about the books they were reading, accessed website information about authors they liked, read reviews of other books written by these authors, and wrote to authors with questions and comments.

Some teachers chose to introduce texts with new, unfamiliar or challenging content in the belief that engaging with diverse ideas helps build interpretive capacity. For example, the new entrant teacher read *Kehua* and *The Kuia and the Spider* to her class because of the interpretive space she thought it might open and the rich discussion that might ensue among children with different background experiences and knowledge.

The teachers observed that the learning and outputs of students in mixed ability groups was often greater than any individual, including the output of the most and least able among them, would typically produce on their own. For example, the Year 7/8 teacher found that as a result of pairing enthusiastic readers (the mentors) with reluctant or “at risk” readers (the buddies) the capacity and interest in blogging about books increased for both groups. The mentors began to request time out of their mentor role to do their own blogging about books and the buddies wanted to become mentors themselves. The Year 11 teacher found that her expectations of who would most benefit from her e-fellow project were similarly challenged.

I made assumptions about which class would most benefit. Actually, it was the mixed ability class, not the extension class. (Year 11 teacher, August hui)

Teachers were especially surprised by the increased motivation and achievement of some of their lowest achieving students, and attributed this to opportunities to work in mixed ability groups. The Year 2 teacher, for example, described how the child in her class with dyspraxia had been able to write a poem through exposure to the work of her peers.

I reckon she listened to everyone else’s poems and worked out how the poems work. (Year 2 teacher, August hui)

This led some teachers to question the need to always ability-group for literacy activities.

I don’t necessarily know that group reading is [always]...necessary because [of] the different roles [students can take]. I can see that other kids will take the roles at their level of thinking or their connections, that there’s much more that they will bring to a story. It’s not all about having to read it, it’s about being able to escape into it and make the connections...I think they [students of different ability] will [support each other] and I think that’s where the different roles can help—I mean one child may not be capable at that stage of making connections but somebody else can so they [the one who can’t] should be exposed to it. (Year 4 teacher, interview)

Students also attributed the quality of their work to opportunities to engage with diverse others. For example, the students in the Year 3/4 teacher’s class were adamant that it was not just feedback they needed but feedback from diverse sources.

If we’re different ages we could know different things. If the people giving feedback are different ages they might not all know the same things and they could give us more feedback and we could learn a lot more. (Student, Year 3/4 class)

We want to see what other people think—not just the same person all the time...The more feedback from different people we get, the more interesting the story could get...They will have different ideas and maybe better ideas. (Student, Year 3/4 class)

The opportunities students had to work with diverse people and ideas were provided by the teaching approaches of their teachers and also by access to ideas and to people across time and space that would not have been possible without the use of ICTs.

Opportunities to specialise

Because the e-fellow projects required students to carry out relatively open-ended tasks with multi-modal texts in mixed ability groups, there were many more opportunities for specialisation than found in the traditional reading or writing group. In all of the group projects the teachers actively encouraged students to take on different roles according to their strengths and interests.



I said to the children, 'Ok I want to know about what you would like to do. What's your passion? What are you interested in?' So as a [group of] four they had to work together to come up with an agreed to idea. And that was a good practice to get them working together and understanding that filming is about cooperating as a team. (Year 4–6 teacher, interview)

It worked out today that the children asked for different roles, some interesting choices but they were the roles they felt they could contribute to the most for this story, so great. (Year 4 teacher, blog)

We already have our questioners—[Names two students]—that is what they're good at. We already have our word detectives. (New entrant teacher, interview)

Even though students specialised according to their strengths they developed knowledge and skills in all the roles, not just their own. This was because they needed to work closely with each other and to have a thorough understanding of each other's roles in order to complete their projects. To build viable interpretations of ambiguous and challenging texts the students in the Year 4 teacher's literature circle needed to explain their findings to each other

The word detectives have found it quite hard as they know they are trying to help others understand what words and phrases mean, not just themselves. The illustrators really thought they might have an easy time of it, but they have seen there is much more thought having to go into depicting a scene. (Year 4 teacher, blog)

As one of the Year 7/8 students said:

We have to work to get the whole team to the goal. (Student, Year 7/8 class)

The actors, artists, and music makers in groups producing multi-modal texts needed an intimate understanding of the script in order to do their jobs. Script writers learnt about how words can be interpreted through image, voice, gesture, and music. All had opportunities to build an understanding of the *principles* of meaning making—a kind of meta-knowledge—by working across modes in this way. This may help to explain the finding presented in Chapter 2 that students often showed improved achievement in making meaning of modes that were not their primary focus.

Shared knowledge of group roles meant that students could change or share roles and support each other as the need arose.

It is great that although the children had an assigned role, they still feel able to slip into a different role if need be. (Year 4 teacher, blog)

I thought [student] would take more ownership of [the writing]. I think he did at the beginning when they came up with the idea and he started writing it down and adding stuff, he did, but as they shared the role it changed. (Year 4–6 teacher, interview)

Because students knew what was required of each other, and because doing their role depended on others doing theirs well, they held each other accountable.

[I] had a funny moment the other day. Am I creating monsters? One of the children asked the 'word detectives' if they knew what a word meant. I asked if he had tried looking himself, and he said 'No, I am making them do their role properly, I am busy doing mine'. (Year 4 teacher, blog)

Teachers also observed that by specialising according to their strengths students learnt more about themselves and each other.

The other thing was how quickly they actually identified the [individual] strengths when it came to cameras and sets and when we went into filming. Who felt more comfortable about telling that joke or who really didn't mind... [Student] took on the producer's role. Year 4 he is and he was: 'Quiet on the set, take one, sound!' And it's like, right! And those older kids didn't bat an eyelid. (Year 4-6 teacher, interview)

This was evident in several of our focus group interviews with students.

I'm a presenter. I don't wanna be a filmer... I like presenting... She's too shy. She doesn't wanna show her face... They took ages and we had to memorise it [to be presenters]. But I'll memorise it. (Student, Year 4-6 group)

[We are learning] what we are good at—like responsibility, people skills... [We are learning that] people have another side to them ...and we are thinking about being our best. (Student, Year 7/8 class)

The following exchange comes from a focus group with a group of Year 4 students:

Student: I like doing the roles cos I never knew that I was that smart.

Researcher: What did you learn you are smart at?

Student: I have discovered I am quite smart at the Connector because I never knew I was that good at remembering stuff. Yeah.

Researcher: Seeing how one thing connects with another?

Student: Yeah.

There were also some surprises. Teachers gave examples of students who demonstrated skills and knowledge, and showed personal qualities such as leadership their teachers had not seen previously. Having the opportunity to specialise according to their strengths meant that some with a history of underperforming experienced success in literacy, in some cases for the first time in their school careers. The Year 7/8 teacher described how one group of “under-performing” boys created a coherent section of the class movie on Shackleton’s journey using claymation¹⁵. Their section, she said, had a clear starting point, a good flow, and focused narration that addressed key points of the story.

It was being active and creative and that they could achieve it when in the past [with literacy] they had failed. (Year 7/8 teacher, August hui)

¹⁵ Claymation is a form of animation with clay figurines.

This opportunity to work from their strengths and be creative sometimes led to improved engagement and achievement in more traditional school reading and writing activities.

[Student] is a child who hasn't been able to read. She has an amazing imagination and storytelling ability and the most stunning oral language. If you read her little story on the wall—her words, with me writing it for her—you will see what I am saying. She is quite tough on herself... [but] she is so happy this term, and all of a sudden she is blossoming because she is receiving acknowledgement of where she is at in her world and she doesn't have to do something she can't do, but something she can. She has sophisticated language that not everyone has and this has given her the opportunity to show what she can do and to extend it. (New entrant teacher, interview)



Having their strengths recognised and valued by their peers also boosted students' self esteem.

The kids see each other in different lights...and identify each other's skills...you could see the pride in their faces...in some cases it was a revelation [that others saw them to have those skills]...[Students know] there is a real purpose for having those skills—they are needed in that role. (Year 7/8 teacher, interview)

*I forgot to say. The boy who is not a Māori anymore¹⁶ is starting to speak in Māori now and again. By reading *The Kuia and the Spider in Māori* I think I have made him feel some kind of 'nod'. Yes—who you are is okay—better than that, it is good.* (New entrant teacher, blog)

For some students this led to a greater sense of belonging and connection. The Year 7/8 teacher told the story of a very bright but socially isolated student in her class. As a result of his expertise in using an animation tool he teamed up with a student who had previously been his main tormentor and who the teacher described as “the most loud, annoying student” in the class. Together, along with the others in their group, they produced one of the more sophisticated sections of the class *Shackleton* movie.

Having their strengths recognised and valued also led to increased engagement and participation in literacy activities and in the class more generally. For example, the Year 7/8 teacher described how “the most difficult boy in the class” was one of the best at claymation and took responsibility for monitoring the computer. She observed that he didn't usually show his skills in class in this way. Working in diverse groups and the need to draw on each others' skills led to students interacting and sometimes becoming friends with students they had never talked to before. The result was more class-wide cohesion.

The Year 7/8 teacher's students noted they were developing a culture of “trying to help each other”.

They have more respect for each other's knowledge now. (Year 7/8 teacher, August hui)

Teachers and students commented on how they worked better together now.

Students have learnt to talk and share with each other....they are a lot more confident with each other because of this. (Year 7/8 teacher, August hui)

¹⁶ One of the students in this classroom had previously told his peers that when he went to the kura he was Māori, but that he was not Māori any more.

I learnt how to work with a group—how to be a director and have people listen to me. (Student, Year 7/8 class)

Opportunities to share ideas

The e-fellows considered there was greater interaction among students about ideas than in traditional literacy activities. There were two main reasons for this. One was that a diverse group working on a complex task has a reason to interact - that is, there were things worth talking about. The other was that teachers set up decentralised systems that encouraged talk between students rather than via the teacher. The use of ICTs helped them do this.

Establishing decentralised systems

Teachers observed that prior to their e-fellow projects class discussions tended to be filtered through the teacher and that this was something they were hoping to change.

My children just don't have the experience of discussing in a group. They are kind of used to Round Robin talks where they contribute in turn and don't really just contribute freely. Even if we are reading a story and talking about things, it is usually directed through me as the teacher, taking turns. (Year 4 teacher, blog)

I would like to think of a way to organize our talks about books in the same way as we have news...I say nothing. This way the children have to ask the questions and talk and it becomes theirs... Some children need a long time to think and I find their peers give them the time whereas I try, but then my pace is still much faster than theirs. They know how to help each other to share their thoughts. I need to think of a way to read to the children with them snuggled and then make it more like news for the talk. (New entrant teacher, blog)

That very much for me articulates where we're driving, where we want these children to have the skills and the literacy strengths to be able to take ownership. (Year 4–6 teacher, interview)

Teachers used a range of strategies to set up systems that were task- rather than teacher-centred. The following comes from a lesson we observed in which the new entrant teacher was discussing with her students a book they had just shared.

Does anybody have a question they want to ask the book? We can ask questions like the way we ask questions at news? ...Does anybody have a question they want to ask us and we could figure it out? Does anyone have things they are wondering about? I wanted to know about karakia and [student] helped me—thank you [student]. [Student] wanted to know about rewana bread. Does anybody else have any questions, maybe something you want to know or something you are wondering about? (New entrant teacher, classroom observation)

Of particular interest here is the new entrant teacher's question, "Does anyone else have anything to ask the book?" This may seem an unusual question—some may say nonsensical. But it is an important question because it highlights what is at the centre of this conversation—not the teacher, not the student, but the story and the shared goal of making meaning of it—a point she reinforces with her second question.

Another strategy teachers used, also illustrated in the quote above, was to respond to texts as a fellow meaning-maker, rather than as a teacher. This involved contributing from the side rather than the centre—a topic we address more fully later in this chapter.

One of the most effective strategies involved teachers removing themselves from discussions altogether, making it impossible for students to direct their comments through the teacher. This was best achieved through setting up pairs or groups of students with a shared task and different roles.

With this latest book (Tomorrow is a Great Word) I decided to put pairs in each role in the hope they would support each other and I would be able to get discussion between the pairs. This has worked for a couple of the pairings, being a fly on the wall I am able to hear what I think is discussion, bouncing ideas back and forth, agree, disagreeing, moving on. (Year 4 teacher, blog)



The extent to which this worked was in part dependent on the task, a point captured in the new entrant teacher's quote below.

A big part of making a film is working together as a group. You don't have to work together as a group to listen to a story but to make a film it is an essential skill. You get that happening a lot; it has to happen. This morning could not have worked if the kids had not all been working together and that brings them closer. (New entrant teacher, interview)

Students need something worth talking about. As discussed in the previous sections large, open-ended tasks with a balance of freedom and constraint provide this.

Using ICTs proved to be one of the most effective ways of establishing decentralised systems. The Year 7/8, Year 3/4, and Year 4 teachers all found that students emailed or blogged comments directly to each other or to those in the wider community rather than to their teacher, and the Year 11 teacher found that students using the class wiki were more inclined to look at and discuss each others' work than in the normal classroom situation.

I have also heard anecdotal evidence that the bloggers are increasingly reading a range of each other's work before completing their own. (Year 11 teacher, interview)

The Year 2, 3, and 3/4 teachers all found the use of Easispeak an effective way of encouraging students to interact directly with each other rather than via the teacher. The Year 4 teacher found the use of digital audio recorders, and the Year 2 teacher the use of the digital camera, to be similarly useful.

You listen to their video and you hear kids that are having trouble with their oral planner and the other voice behind the camera is trying to give a plot [for them]. (Year 2 teacher, interview)

The fact that texts were stored in, and accessible from a central and neutral location (i.e., not on the teacher's desk or in an individual student's exercise book) also encouraged students to respond directly to each other rather than via the teacher.

For me the whole thing is that it just becomes something that's theirs...I've sort of stepped away from pushing it and driving it and stood back and let those who are using it continue to use it. (Year 11 teacher, interview)

The students working on class wikis could access and comment on each others' texts without going via the teacher or even the student concerned. Parents, teachers, and community members could, and did, also access and comment on the work produced by the students in many of the e-fellows' classes.

Teachers observed that in online situations more students contributed to group discussions. The discussion was less likely to be dominated by one or two students and the balance of talk was more even. They also reported that students

took greater risks in what they were prepared to ask or say, the contributions were more thoughtful, and the discussions tended to go deeper and last longer.

The first face to face discussion we had about our story I noticed three children not contributing. When we went to blogging our thoughts, these same three were almost the first to post a comment, and one in particular was asking about what a word meant (she would never do that in a group discussion). (Year 4 teacher, blog)

And the other thing was that thing that [student] said which was that she had been checking out everyone else's and had got ideas from the others about how she would improve her writing. And that doesn't happen with refill [paper]. Unless you set up a situation in a classroom where everyone swaps around their essays, you're never going to look at each others' writing. (Year 11 teacher, interview)

These online discussions supplemented rather than replaced face-to-face conversations and we saw examples of students switching comfortably between modes. For example, during our first observation we saw one of the Year 4 teacher's students pause part way through blogging about the latest literature circle book, to verbally tell another student to take more care with his punctuation because his postings were too difficult to read. Another pair, sitting side-by-side, were carrying on two conversations at once—one on-line and one verbally. Interestingly, the older students in the Year 11 teacher's class preferred to use the online venue for making their work more available to others, but preferred face-to-face verbal modes for responding and getting and giving commentary on that work.

Interestingly, too, several teachers observed that over time some of the linguistic qualities of on-line conversations described above began to transfer over to face-to-face discussions, and to transform these. This was also true of conversations between students and members of their families and communities. The Year 2 and 3/4 teachers, for example, described how comments that family members posted online led to ongoing face-to-face conversations at home. Some students had extended conversations with relatives who called them on the phone from other cities to continue talking about the work they had shared online.

[Student's] family's on board. His dad or his family, somebody is keeping it ticking along because they commented again last night, and I think it was dad on that same story about how he had enjoyed it, and so obviously there's still discussions going on at home about that event. (Year 2 teacher)

Teaching the skills of sharing ideas

Simply setting up decentralised systems, however, was not enough to ensure rich, knowledge-generating interactions. Several e-fellows observed that while students often learnt to engage in conversations directly with each other rather than via the teacher, the content of these conversations was often trivial.

[I] showed the kids our wiki and we talked about the literature circle roles and started a few discussions. Nothing too deep and meaningful yet, the kids just want to post, post, post. They are itching to add to discussions. (Year 4 teacher, blog)

I do believe my children are turning into blog junkies. [It] might be time to have the conversation about only commenting or blogging if we have something further to add... (Year 4 teacher, blog)

The quality of the reviews could be improved and just how many posts are individuals making? (Year 7/8 teacher, blog)

We do still need to consider and continue to work towards improving our quality—quality control can be the focus of next term. (Year 7/8 teacher, blog)

Teachers found they had to actively teach the skills of talking about ideas and of giving and responding to feedback.

We now need to look more in depth about what sort of questions we ask. We need to do some skill building on what are good thought provoking questions and what are good question starters. (Year 4 teacher, blog)



The Year 2 teacher provided her students with explicit instruction on how to write a comment on a blog which covered both how to ask and answer a question. The Year 3/4 teacher began her project by teaching her students how to give and receive formative feedback on the content of their writing. At the beginning of the project this involved explicit instruction, modelling, and teacher directed practice.

After they had written 2–3 sentences we came together to share our beginnings. I got the children to think about giving constructive feedback specifically to do with the [teaching intention of describing the setting of their story]... The children were honest with their feedback and gave good suggestions which helped the writer make improvements confidently. I then got the students to continue with this strategy in pairs. I have given further feedback for their next writing session. (Year 3/4 teacher, interview)

Over the last two days I have been working with the class reflecting on their fairy tales so far. I wanted to observe the students with their peer buddy to see how effective their reflective feedback is at present and to work on the areas that appear to be less helpful. (Year 3/4 teacher, interview)

Through this process the Year 3/4 teacher established the expectation that conversations between writers and readers are about ideas, and that the purpose of these conversations is to generate new ideas. As students developed the capacity to give and receive this type of feedback, the Year 3/4 teacher gradually reduced the support she provided while still remaining attentive to the quality of talk children engaged in and the capacity of this talk to generate new ideas.

The Year 4 teacher also provided explicit instruction on how to engage in knowledge-generating conversation, and modelled this through her response to students' ideas. On occasion she got other staff members to contribute in order to model different interpretations of text. The Year 4 teacher also discovered that spending more time with one text before moving on assisted the emergence of these conversations because students were able to reflect more deeply on the text and revisit and build on earlier discussions about it. This is a topic we address more fully in the next section of the report.

Teachers found that once students had learnt how to give and receive feedback, the quality of their conversations improved.

I have noticed the specific reflective feedback session has already helped focus the peer discussions. It has created some very constructive debating and the children justifying their suggestions. (Year 3/4 teacher, interview)

The blogging for the sake of it tends to have tapered off and as we are learning more about the roles, it is taking longer for the children to post as they are now putting more thought and research into what they are putting up. Guess this is also the second week of working with the book so our initial questions are asked. We are now looking at deeper thinking to try to answer some of our questions. (Year 4 teacher, blog)

The big shift is not the fact that they're commenting, it's the type and range of comments we're starting to get. Like the questions we got from [one student], who asked [another student], and [that student] replied. And [another student], because he actually added more to the story. (Year 2 teacher, interview)

The big shift is taking ownership with their literacy and the needs around that, to actually be really motivated by the fact that this is not being done to me, this is me having some discussion on what we're doing, writing scripts, oral language skills and all those literacy skills. (Year 4–6 teacher, interview)

Decentralised systems and student learning and engagement

Teachers attributed improved learning and achievement to opportunities to share ideas.

I've interviewed some kids today and it is interesting to get their personal responses. [Student] was clear that she is really enjoying having a place where she can write about what she is reading and share this with others. She has students from her old school ringing her up and letting her know what they think of her reviews. (Year 7/8 teacher, blog)

The online audience are becoming more involved and are becoming more confident with their comments/feedback... They make the changes and add anything new to their stories from the online or buddy feedback. It seems to be keeping them focused. (Year 3/4 teacher, interview)

Students also attributed their engagement and learning to opportunities to talk about ideas with each other.

I like best of all that you can talk in discussions cos you can get different views. (Student, Year 4 class)

I like best having discussions because you can answer back if you agree or not. Sometimes like, I disagree to [student] or [student]. (Student, Year 4 class)

It's good for people to look at your wikis and blogs because they can...learn from us... They might learn how to do a PowerPoint, what sort of characters they can have, how to change the characters... (Student, Year 3/4 class)

It (blogging about books) makes me read a lot more because if you go on there and you have nothing (posted on there) you really want to read something. So you've got [to put] something on there. Once you start to read you get into the books, and you read more. (Student, Year 7/8 class)

Students were thus engaged not just by having interactions with others, but by the prospect of generating new knowledge through these interactions.

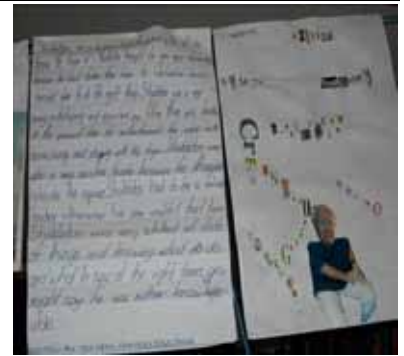
When you put up one idea, lots of ideas come up...And it keeps on adding and adding and adding. (Student, Year 3/4 class)

You're learning new stuff instead of just reading the book and then writing questions and then answering them. (Student, Year 4 class)

I like listening to other people's stories. So you can get more ideas and so you know what other people have been writing... You can learn from other kids. You can listen to other kids and so you get

more ideas so when you are doing your story you might be able to use some of those... You can share your ideas with other people so they can get ideas and use them. (Student, Year 3/4 class)

I like talking to everyone and seeing what their ideas are... What I do is I put up ideas on the blog and people like them... They write on the blog that they agree and they add something else. (Student, Year 4 class)



Opportunities to revisit texts and ideas

The e-fellow projects provided students with many opportunities to revisit, elaborate on, and transform texts and ideas. This was because most e-fellows: allocated greater amounts of time to focus on one text than they had in the past; set up systems to encourage students to revisit texts and ideas; and used ICTs to support recursive processes.

Time for revisiting texts and ideas

Nearly all of the e-fellows allowed more time for their e-fellow projects than they would have done for literacy topics in the past. They did this because they knew that the deep level of learning and engagement they wanted to achieve takes time. Several felt the e-fellowship gave them permission to spend more time with one text than they would otherwise have felt comfortable about due to the competing demands of other curriculum areas. The new entrant teacher described how for the e-fellow project she allowed at least one week for each picture book, when in the past she would have spent only a short period of time after lunch for each. The Year 7/8 teacher spent much of the time allocated to the integrated topic of Antarctica to focus on Shackleton's journey. The Year 3/4 teacher allocated nearly all of her literacy time for a term to her fairytale writing topic.

Processes for revisiting texts and ideas

Some of the systems teachers set up to support students to revisit and elaborate on texts and ideas are outlined below, although the main impetus for revisiting texts came from the students themselves.

Nearly all of the e-fellow projects involved students in an ongoing and iterative process of seeking, giving, and responding to feedback about their work. This happened at different levels (pairs, group, whole class) and came from different sources (peers, teachers, community members).

Some projects required students to revisit the same texts many times through different modes. For example, during the week they spent on the picture book *Not a Box* the new entrant children listened to the story, retold the story, played imaginary games using dress-ups and a large cardboard box, then turned these into a movie which the new entrant teacher filmed. They created KidPix stories using photos taken during their play. They then watched and re-watched the movie, and read and re-read the stories, all the time creating and conversing about their ongoing interpretations.

The students in the Year 3/4, Year 3, and Year 2 classes all went through an extended creative process that began with talking about or telling their narratives orally. This was followed by writing, reading, illustrating, adding voice-overs and sound effects, and re-reading, re-watching, and re-listening for editing purposes. Each of these acts involved drawing on, elaborating on, and transforming the earlier version of their creations. Out of this work emerged new interpretations of texts and rich conversations.

Another strategy teachers often used was setting up nested systems whereby different individuals or groups took responsibility for one part of a task and then came back to share as a collective. For example, the Year 7/8 teacher set her students the task of producing a film about Shackleton in which each group was responsible for one event in the

sequence of his journey. The new entrant teacher set each of her students the task of illustrating and doing the voice over for one part of their *The Lion in the Meadow* movie. When making movies of *The Little Red Hen* and *My Cat Likes to Hide in Boxes* they worked in small groups—each responsible for depicting one part of the story. In the Year 3 teacher's class all of the students wrote stories about the antics of the same character—Pesky the Possum—and in doing so drew on, elaborated on, and transformed their initial individual and collective ideas about his character. The Year 11 teacher designed a task where students had to create their own study guide on a novel chosen from a list of three to provide a resource for the rest of the class. These processes ensured that the knowledge held by individuals or groups could be represented and knitted together so that individuals, groups, and the class as a whole could build new knowledge in an iterative way.

Teachers set up systems and expectations for keeping conversations about ideas alive for as long as they were productive. Often these continued long after the teacher initiated focus had ended. For example, in the new entrant teacher's classroom a conversation about imagination which emerged during *Not a Box* continued through *My Cat Likes to Hide in Boxes* and *The Lion in the Meadow* where it grew and broadened into a conversation about truth. This then developed into a conversation about the capacity of adults to believe in the objects of children's imagination and then into a conversation about fear. This conversation was picked up in *Kehua* through the character of the Nanny. These conversations also became interwoven with other classroom stories including the stories of children's own lives.

It's the end of the week and this is what I think. This isn't about just one story. The story of that week. It is about many stories all interacting and coming together to make another story. It's about little people and me sharing an experience and our experiences related to a story. (New entrant teacher, blog)

Interpretations were kept alive as part of a collective memory and became interwoven with collectively-held stories.

You read them once and then again and again and each time they become fuller and take on a life of their own almost. I have never had that experience reading books to kids until this project. The talking and the illuminating and the togetherness of it. We are paying attention to details and to the details of our experiences with each other. It is a kind of deep engagement with the story and sometimes with each other. Sometimes this is transformed into insight. And sometimes that insight is a kind of whole group moment, a shared nod. (New entrant teacher, blog)

The use of ICTs played an important role in supporting these recursive processes, especially in that ICTs made it easy for students to record, replicate, circulate, and revisit their texts, and those of their peers.

One of the benefits of the blog type things, and a lot of the technology based learning is that you have a record of learning that you can go back to...It's not ephemeral, and you can get a sense of the process as well, and the drafts and things like that. (Year 2 teacher, interview)

Seeing my children go back to something, that it's not lost, it's not way back in their books. Because of the way our wiki's organised they can go very quickly and find where they were, that it gives them a chance to go back and read others' thinking...(Year 4 teacher, interview)

ICTs took the laboriousness out of revising and editing, making students more inclined to revisit their texts for these purposes.

The first thing that they're willing to do that the hand written people aren't willing to do is resubmitting their work [after getting feedback]. Like I noticed [student] did it nearly instantaneously... You don't get that instantaneous sort of reworking of a draft when you give them the piece of refill back and say do you mind re-writing that up. You never see it again...it's basically a

zero percent hit rate of resubmissions for the hand written but the ones that are electronic do act upon your feedback more which is interesting. (Year 11 teacher, interview)

I do that [editing at a higher level—moving words around, deleting sentences and putting new ones in] all the time. Even if you write something in some paragraph, then you can, it's much easier to like copy it and move it into the other one, instead of like if you write it on paper then it's like a mission. [Student, Year 11 class]



Teachers described often how recursive processes like these kept texts “alive” for much longer periods of time than they or their students had previously experienced.

It's just like magic. Hey, this story's very much alive in the eyes of the child who wrote it, the author, and those of us who are reading it are finding out more and more about that experience. So it's not done and dusted once they're published, and that's probably the biggest thing that that'll come out of this whole term is that online environments provide a chance to do that, to become ongoing or get reflecting time. (Year 2 teacher, interview)

I think that opportunity to reflect on what we're doing and the chance to go back. And also that no matter how well you can set up a discussion there might be someone missing or somebody's head isn't there, that there's a chance for when they're ready they can go in and see what other people are thinking. But your head's not always in the right space when the teacher says 'We're discussing now.' (Year 4 teacher, interview)

ICTs also provided students with a perspective of themselves as speakers, actors, and presenters “from the outside” which gave many the impetus to improve in these areas.

What is the benefit of creating stories in Kidpik? I think the benefit is in the recording. Being able to add voice and watch and listen and read along. To be able to share these online or at assembly. Being able to hear or watch yourself perform or read is a way of having a different awareness. (New entrant teacher, blog)

Opportunities to revisit texts and student learning and engagement

Teachers attributed student learning and engagement in part to spending more time than usual with one text and revisiting it many times, often through different modes.

At the start they were not very interested in the Shackleton story and I thought 'Oh no have I made a mistake allowing the whole term'. But the more and more familiar they got with Shackleton's story, the more and more interest they showed...The more times they revisited the story the more interested they became. (Year 7/8 teacher, August hui)

This was because each revisiting created a new interpretive space, which students became increasingly compelled to occupy. There were opportunities for new interpretations to emerge in the spaces between:

- representations of the same text in different modes (what can be said with a photograph is different from what can be said with a painting);
- different students' readings of the same text (what one person sees may differ from another); and
- the re-reading of a text over time (interpretation is context bound and so can change over time).

We saw and heard evidence of all these things occurring. The artefacts produced from this interpretive work generated further discussion, meaning making, and idea generation, setting up a positive feedback loop of increasingly rich meaning making. Each return to the text or interpretations of the text provided an interpretive space for further meaning making to occur.

What I like most about commenting is the reflective nature that children can get when commenting on their own work...and doing the process as a circle, to be able to articulate it and have some insight into the fact that you're doing editing and things as you comment. Student W could actually see the bigger picture. And then [student] doing his reflection on the content of his written work, and [another student] with herself—that self reflection that's going on. (Year 2 teacher)

We drew and we painted and as they looked at the illustrations they chatted and were delighted to find new things they hadn't seen. Paintings of cats, teddy bears, apple trees. They were absorbed for an hour. Happy. Nobody wanted to go home. But we did. (New entrant teacher, blog)

Opportunities to lead the direction of learning

One of the conditions that supported the generation of new knowledge in the e-fellows' classrooms was having teachers who were attentive to the emergence of possibilities they themselves may not have anticipated. Interview responses and classroom observations suggest that all of the e-fellows were aware of the need to engage in what Davis et al. call "hermeneutic listening", that is listening for possibilities, as opposed to "evaluative listening", which is listening for the "right" answer.

I realised that I had been in too much of a rush all the time. That I had been telling myself I was a good teacher of reading but that actually I wasn't. I had read lots of books but rarely had I really really listened to children. Rarely had I ever thought about the way children are touched by stories. Of course I had thought about it in a superficial adultish sort of way but not in a way where I slowed right down and opened my heart and listened with stillness, with none of my own ideas waiting to jump out at them, with none of my teacher trained questions or techniques. This is hard to do but really necessary...I am not there yet, but I am a little way along the way to really hearing, watching, connecting, and understanding. (New entrant teacher, blog)

Several teachers described how it was the technology that helped them recognise the need to change the way they listened and the way students felt compelled to talk in classroom settings. In the following quote the Year 4 teacher describes how it was not until she watched some video footage that she realised how frequently students directed their conversation through her.

I just saw how much, I guess it was with the video, how they were looking at me all the time. I guess that was where the videoing was good because I didn't realise what a control freak I was. (Year 4 teacher, interview)

In the quote below the new entrant teacher describes using the technology to monitor her listening skills.

I filmed myself teaching today but I'm too frightened to look at it. Actually it was quite a lovely time. I asked the children if they wanted to say anything about A Lion In The Meadow after I had read it. There is such a subtle and essential difference in the ways we can listen or not listen or sort of listen or pretend to listen. Today I listened softly and let the ideas flow. (New entrant teacher, blog)

As well as monitoring their own actions, the technology also helped some teachers to listen to their students more closely. Several described how, by setting aside time to watch video footage or listen to audio recordings, they learnt

things about their students and the meanings they were making of texts that they had not noticed before. Being constantly attentive, as a teacher, to the emergence of possibilities that one may not have anticipated requires an awareness of one's own beliefs and assumptions.

A critical feature of a hermeneutic listening is that it is attentive not just to the object of perception, but to the listener's complicity in that perception—that is, to the prejudices that determine the sorts of elements that are perceived and the manners in which they are interpreted.
(Davis, 1996, 247)



Interview responses and classroom observations suggest that some of the e-fellows had or were building this level of awareness.

I didn't want to guide the kids too strongly in those discussions. I wanted them to have a sort of natural ... and if they asked a question then I might try to draw it out a little. There is such a fine line the way you can guide a conversation as a teacher. In your approval even you can make them all start to come in a certain way and that's the trick not to. (New entrant teacher, interview)

I have avoided discussing my own interpretation of the books. I am trying to lay my own ideas aside so that I can open myself to what the children think and say. (New entrant teacher, blog)

Hermeneutic listening requires the teacher to quickly evaluate the possibilities that student responses might open up, and work out a way of keeping a record of these and selecting from them, or helping students to do so. This requires teachers to have a deep knowledge of text analysis as well as a deep knowledge of their students.

Opportunities to work with experts

Another important condition of students' learning and engagement was the opportunity to work with experts in their field of study—literary criticism, film studies, social commentary, drama, art history, painting, writing fiction, television presenting, documentary making, and so forth.

In some cases these were out-of-school experts. For example, the group of Year 4–6 students worked closely with the producer of the local TV station. In most cases, though, the experts students worked with were their classroom teachers. As mentioned in Chapter 2, all of the e-fellows had interest and expertise in their project topics that went back many years. Some had completed university study or specialised in these areas as part of their teacher training. Many had been involved in ongoing professional development in the area.

In many cases the knowledge, passion, and curiosity expressed by teachers was an extension of an interest in making meaning of and with text in their own out-of-school lives, an interest that could be traced back to their own early years. Many had been, or still were, members of the “real world” discourse communities that they were emulating in their classrooms. They therefore knew how to apprentice their students into these communities.

Although we did not ask teachers about their personal interest in text, this theme emerged frequently during interviews. One of the e-fellows was in the process of making a documentary film. One was an avid blogger. Several belonged to book clubs. One was a member of a film society. One was writing fiction for children, and another was writing poetry for adults.

I don't belong to a book group but [another staff member] and I were both passionate about picture books and she often says 'there's this picture book and you must read it'. We also share books that we read about our job or novels. (New entrant teacher, interview)

One of the e-fellows described her experience of being part of a community of writers as part of her major in English at Teachers' College where teacher trainees wrote their own stories and gave each other feedback. She continues to write to this day. She credited her capacity to respond to students as writers to her own love of writing and sense of identity as a writer.

I've always written—I do write poetry...I treat them like adults. (Year 3/4 teacher, interview)

The workshop really reinforced my passion for writing. I love English. It's given me a real idea of what I want to do next term for my writing. And I will do this every year. (Year 3/4 teacher, interview)

Research shows that because humans are biologically predisposed to mimicking emotions, the teacher can create a positive feedback loop by expressing interest, curiosity, enthusiasm or excitement (Davis et al., 2008). Conversely, they can also set up a negative feedback loop through expressing dislike or disinterest in their subject, leading to the suggestion that “teachers have an ethical responsibility to be curious about their subject matter.” (Davis et al., 2008, 206)

All of the e-fellows exuded a passion for their particular area, both when we observed them working with children and when talking with us about their projects. They expressed curiosity in making meaning of and with the texts they explored and were fascinated by the interpretations their students made—not necessarily for pedagogical reasons, but out of the desire to share the meaning making process with other readers and creators of text.

However, there was a sense that this passion for text that spilled over into their conversation was somehow not appropriate or may not be seen as related to their lives as teachers, and some were at times, almost apologetic about it. For example, in the following excerpt from her blog the new entrant teacher follows her expression of a love of books with an expression of uncertainty about the perceived relevance of this.

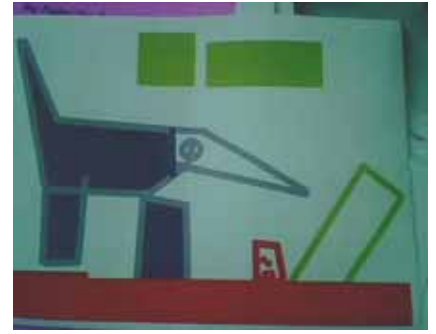
*Since I have been a parent I think I have grown to love books more than when I was a child. Maybe the books are better. My favourite adult read lately was *The White Tiger* and I really enjoyed Shona Koea's autobiography. My favourite genre is short story and I am reading Cilla McQueen's poems lately. I am reading Kate Camp's book about the classics. She is so funny. It is good to be an adult sometimes. I liked Margaret Atwood's series on Debt. Is all this relevant? Maybe not. (New entrant teacher, blog)*

And yet it seemed to us that it was this very passion for texts on the part of teachers that contributed to the passion we saw amongst the children in their classes.

Summary

The e-fellow projects provided students with opportunities to: work with freedom and constraint; work with diverse others; specialise according to their strengths and interests; share ideas; revisit ideas; lead the direction of their work; and work with expert adults. These are all conditions that complexity thinking researchers have found to be present as complex systems such as those in education evolve and develop. These conditions do not *cause* people in complex systems to learn, but they are a necessary part of the context in which learning occurs.

It is often argued that technology does not, in and of itself, enable learning. Rather, what matters is the way that technology is used. This argument foregrounds the importance of effective pedagogy which was evident in all of the e-fellows' classrooms. However, the findings from this research also highlight the ways in which ICTs can, in and of themselves, offer certain affordances for literacy learning that would not be readily available without them. Specifically, we found that ICTs enabled students:



- greater choice about how to make meaning of and with texts than afforded in a print text environment;
- to work with diverse others by providing access to ideas of people and texts in time and place that would otherwise be unavailable to them;
- to specialise according to individual strengths and interests by providing opportunities to make meaning in modes other than, as well as including, print text;
- to share ideas by providing a neutral, communal space for the storage, retrieval, discussion, and adaptation of texts held neither by individual students, teachers, parents, or community members, but accessible to all; and
- to reflect on, revisit, add to, and adapt ideas over time by making it easy to keep a record of every iteration of texts and discussions and by removing the laboriousness of editing that comes with the need to “re-write” when using pencil and paper.

Chapter 5: Conditions of teaching

We begin this chapter with a description of the conditions of teaching that enabled the e-fellows to create the learning environments described in Chapter 4.

We also discuss the barriers they faced. We then outline some shifts in teachers'

ideas about literacy teaching and learning that occurred during the project, and the advice they had for others interested in embarking on similar projects.



Teaching enablers

Enablers related to the e-fellowships

The e-fellowships provided teachers with some opportunities that may not typically be available to the average classroom teacher. These included: release time for personal e-fellow reflection and planning; regular on-line, face-to-face, and teleconference meetings with other e-fellows and researchers; a programme of termly workshops in which they met with the other fellows for extended discussion and sharing; and tools such as video and audio recorders and broadband access. In the following sections we discuss each of these in more detail.

Time

All of the e-fellows considered the release time they received for personal e-fellow use to be a very important enabler.

Time was the biggest gift the e-fellowship gave me. (Year 7/8 teacher, August hui)

Teachers chose to use this time in different ways. Five of the e-fellows used at least some of this time to withdraw small groups of children with whom they worked more intensively. The teachers described how this enabled students to connect deeply with each other and the task. They considered this was possible but not so easy to achieve in a busy classroom with many more distractions both for the students and the teachers.

All of the e-fellows used some of their time away from students to read, research, explore others' ideas, such as those of previous e-fellows, converse with colleagues, reflect and plan. They considered that while they could have successfully completed their projects without this time, it allowed them to take their projects further than they would normally be able to do.

Community of learners

There were many opportunities for the e-fellows to meet together. These included release days set aside for face-to-face meetings, regular teleconferences, and wiki conversations. There were also informal gatherings via email, phone, and sometimes in person as e-fellows with common interests worked together in pairs or small groups. Knowledge building occurred on different levels at the same time—at the individual e-fellow level; as pairs or small groups engaged in on-line and face-to-face dialogue; and as these pairs or small groups conversed together as a collective. The same processes occurred within the research team and across the research and e-fellows team. The e-fellows described how their projects were shaped and strengthened by opportunities to share ideas and resources, to solve problems, and to build theory with others and as a collective. In turn we observed the way in which the knowledge generated by the collective was shaped by what happened in the e-fellows' classrooms and the dialogue amongst the research team and between researchers and e-fellows.

This process of collective meaning making was in fact an extension of what was going on in each of the e-fellows' classrooms. Within the e-fellows' classrooms different levels of learning systems were operating at the same time—individuals, pairs, small groups, clusters of groups and the whole class. To borrow from Davis et al. (2008, p202) each of these “nested systems” were “mutually supportive and intelligent, unfolding from and enfolded in one another”. The e-fellow community operated as another level in these nested systems providing informal gatherings via email, phone, and sometimes in person as e-fellows with common interests worked together.

“Permission” to take risks and try new things

Several e-fellows felt the e-fellowship gave them permission to take risks in their classroom or to do things that they would otherwise feel might not be considered acceptable by colleagues. For example, one e-fellow described how some teachers considered movies to be “frivolous”. Three of the e-fellows explained that if it were not for the e-fellowship they would have felt guilty allocating as much class time as they did to one area of study.

If people ever said, ‘Should you really be spending so much time on this?’ I could say, ‘Yes!’ (Year 7/8 teacher, August hui)

Other enablers

The e-fellows came from schools with a commitment to e-Learning—all those from primary, contributing, and intermediate schools had been part of an ICT Professional Development (ICT PD) contract.

Some came from schools well equipped in terms of ICT tools, connections, working spaces, and support staff, and were quick to acknowledge all of these as enablers. For example, the Year 4–6 teacher acknowledged that she had special access that other teachers do not to professional equipment, professional mentors from the industry for her students, and use of the school literacy budget to buy equipment. The Year 3/4 teacher recognised that having classroom computers, a school computer suite, and an ICT teacher with no classroom responsibilities, helped her implement her project.

We're lucky because we do have an [ICT teacher] and we do have a computer suite. But even without all of that I think you could still do it. (Year 3/4 teacher)

Most of the e-fellows also had school leader support for their projects. This was one of the requirements of e-fellow applications. Many also described working in schools with high levels of trust between staff. All had colleagues with whom they had regular professional conversations.

One of the most important enablers observed by us, but not mentioned by the e-fellows themselves, was their own knowledge and expertise. As already noted in Chapter 1, most of the e-fellows were very experienced working in e-Learning contexts and all had existing literacy interests and skills.

Teaching barriers

The barriers faced by teachers included the availability and reliability of ICTs, school ICT policies, the school timetable, and student access to home computers.

Availability of ICTs

Many of the e-fellows faced challenges relating to the availability of ICTs, though in this regard each e-fellow's situation was different. While some had regular access to computer suites or pods, some only had access to one or two classroom computers and had to work out systems for ensuring every student had enough time with them to complete their work. This was especially challenging for the teachers of younger students who were often very slow at typing.

At the moment the system is a little problematic in that when we assign two of the three computers for the children to write comments they spend a long time constructing their comment reflecting the fact

that their typing skills are not fine tuned. Some days very few children manage to complete a comment and we get behind in the children drawing illustrations for their published work. I have thought about setting a timer but that just doesn't seem right—reflective comments do take time and this coupled with their emerging typing skills—I need to give them the time to work through the process. (Year 2 teacher, wiki)



One of the solutions was to use adults such as parents, or older students in the school, as scribes. This freed up computers more quickly and also freed up more student time and energy for thinking and creating.

Reliability of ICTs

A more common barrier, faced by several e-fellows, was the reliability of the ICTs and the availability of support when things went wrong. For example, the Year 7/8 teacher found the process of students logging on to the internet so difficult that she changed the whole focus of her e-fellowship project.

Initially, I had planned to explore the impact that blogging and purposeful audience feedback may have on student writing. I moved away from this idea when logging onto the internet at school became overly difficult. Our server had very slow connections and this impacted on student enthusiasm for their tasks and ability to complete work. Our network speed became an even greater issue in Term Two and was compounded by the arrival of the conflicker virus. Our network was down and only revived partially at times until well into Term 3. (Year 7/8 teacher, blog)

School ICT policies

The biggest barrier for the Year 11 teacher involved constraining school ICT policies and procedures. School computers were not easily accessible on a regular basis for in-class work, and students were blocked from accessing their blogs while at school.

We couldn't get onto the blogger site. Last year there were blocked sites and we couldn't get onto any of them. This year they've decided to block them all at school so we couldn't get them onto blocked sites to do their enrolments at the beginning of the year and signing up onto the sites and setting it up. (Year 11 teacher, interview)

She felt she could not get her requirements met because the school did not consider using external wikis and blogs to be a priority.

And there's a real thing going on at school where they're desperately trying to promote our intranet and so anything to do with external wikis and blogs isn't getting its worth at the moment. (Year 11 teacher, interview)

For this reason she designed her project so that students did their work on home computers rather than at school. On reflection, she felt that while this approach had worked it had also limited the teaching and learning opportunities. Her students concurred.

So how would I do this differently next year... I would definitely fight for their blogs being unblocked at school, this would make the initial set up much easier, and it would also allow for more guidance in the outset. I get the sense that greater support at the beginning, opportunities in class time to read, and complete peer feedback would have established behaviours that they would have then continued at home.

School timetable

Timetabling of the school programme and of computer suites sometimes provided barriers and the e-fellows often had to design their projects around these constraints. The Year 4–6 teacher, for example, found it a challenge to organise a whole day out from “normal” timetables for her students to come together from different classes to work on their projects. Sometimes their “day” clashed with special events that the kids would rather have gone to, but she made the day sacrosanct in the timetable.

Others found it difficult to find spare rooms where students could audio or video record without interruption or background noise. Students from several classes told us of their frustration at having to re-record their work because of unexpected background noise.

Some of the e-fellows were able to reorganise the timetable so that students had longer periods of time in rooms, such as computer suites, with the equipment they needed.

Students without internet access at home

One of the barriers faced by the Year 3/4 teacher was that three of her students did not have internet access at home, making it difficult for them to participate fully in all aspects of the project. One of her solutions was to send materials home in hard copy.

Reflections on literacy teaching in e-Learning contexts

At the final project hui we asked the e-fellows to write down if, and how, their ideas about literacy teaching and learning had shifted as a result of their e-fellowship. This was a question we also had asked as part of the e-fellow interviews. In this section we discuss their responses.

The e-fellows considered that working on their e-Learning projects had strengthened their awareness of the multi-modal nature of literacy and the need to concentrate on all of the modes, not just reading and writing.

All that is good and great about literacy is no longer just about pen and paper (Anonymous response, August hui¹⁷).

[I] had to go beyond the traditional concepts of teaching reading/writing to engage and extend students via visual literacies. (Anonymous response, August hui)

This made some more aware of the way traditional notions of literacy can marginalise or fail certain groups of students.

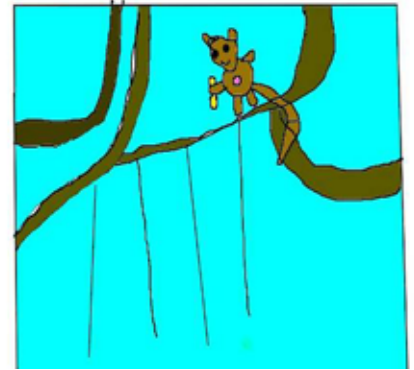
[I realised] how literate our students are when many people label them illiterate. (Anonymous response, August hui)

Several also described their increased awareness of the connections between different modes and many commented on the need to teach these in a more integrated way.

I have probably seen more of the connections between the reading and writing. Often we teach reading as reading and writing as writing. (Year 7/8 teacher, interview)

¹⁷ The written responses to the question we asked at the final project hui about shifts in thinking about literacy teaching and learning were anonymous.

My ideas about the way I teach or approach literacy have changed—I now approach literacy more by integrating different literacies to enhance one or more of the literacies involved, rather than the more traditional way of teaching them as isolated subjects. (Anonymous response, August hui)



Because there's such a drive in perhaps many schools throughout NZ actually, that key data you've got that's linked to literacy is reading and writing...And there's not that interconnection through the literacies. They're planned for in isolation. And for me I see literacies. You do need that articulation that they're learning but you do need that integration. (Year 4–6 teacher)

Teachers said, too, that working on their e-Learning projects strengthened their awareness that literacy involves “thinking and doing”, not just breaking the code.

That reading is much, much more than pointing and predicting and sounds. (New entrant teacher, blog)

It's not all about just having to read it, it's about being able to escape into it and make the connections. (Year 4 teacher, interview)

Writing is their ideas...writing's not just a physical task of writing, it's not just the mechanics, it's the thinking, it's the doing, it's inspecting. They all need to be good at writing, and good writing comes from all those things. ... (Year 2 teacher, interview)

Students therefore need opportunities to “think and do” if they are to learn to be literate, and from this several said they had developed an increased belief in the importance of situated practice.

Any changes? It has just reinforced the importance of teaching literacy and learning, you know, that whole, and the importance of hands-on in the class. (Year 2 teacher, interview)

I think...that letting children talk about books and live them is really valuable. (New entrant teacher, interview)

They also emphasised the importance of overt instruction.

Make connections explicit to the learners, between the oral and written texts, and develop a reflective learner. [All this] enhances achievement, I feel sure. (Year 2 teacher, interview)

It [the e-fellow project] has just reinforced the importance of [consciously] teaching literacy and learning. (Year 2 teacher, interview)

Pre-plan, and pre-teach in giving reflective feedback. (Year 3/4 teacher, interview)

Nearly all of the e-fellows became more keenly aware of the need to provide students with more time to think and talk about ideas, and to revisit the same text many times.

I have allowed myself and children more time to reflect, revise and reshape their work. (Anonymous response, August hui)

I understand that it takes children time and repetition to have a full and deep understanding of story and of words. We rush and we give the wrong message. We need to slow down. (Anonymous response, August hui)

[I learnt that] time was the biggest thing I could give my students—time to do something well...Spending time going over and over familiar information in different mediums made them more and more confident. You choose a narrow focus and you go as deep as you can...They never got tired or bored of that topic...They became extremely skilled and showed a deep level of understanding that I have never seen before... (Year 7/8 teacher, Ulearn)

Some e-fellows observed that the multi-modal and rapid changing nature of texts and their uses mean that students need to learn the principles of meaning making and build the capacity to apply them to new situations.

We can't just teach children one way is right, we have to give them the tools to challenge and find out for themselves. (Year 4 teacher, blog)

Many e-fellows expressed a sense of urgency about the need for some changes to the way in which literacy teaching and learning is carried out more generally.

I am concerned about the 'way' literacy is taught in many classes nationwide. (Anonymous response, August hui)

The institution of 'school'—the culture of 'the school' does not always support my beliefs about literacy. I am conflicted inside about this. (Anonymous response, August hui)

This did not necessarily mean changing everything, but it did mean scrutinising the approaches available and selecting from them.

I saw something that said we need to change everything!!! I disagree, we need to enhance what we are doing, look at the core curriculum, work with the tools that are out there...above all be adaptive and challenge ourselves. (Year 4 teacher, blog)

When reflecting on their projects, the main piece of advice the e-fellows had for others interested in embarking on projects similar to their own was to allow time to cover things in depth.

Make sure you give the kids the time to get the quality and yourselves the time. Pre-plan, and pre-teach in giving reflective feedback. And get the parents involved. (Year 3/4 teacher, interview)

A project like this takes time, perseverance, commitment...Scaffold the learning. Integrate [everything] with the topic. Make connections explicit to the learners, between the oral and written texts, and develop a reflective learner. [All this] enhances achievement, I feel sure. (Year 2 teacher, interview)

I guess now I'm starting to see if you're going to cover all those things you can't do it in a day and that it has to take that long and to really get the thinking. In the beginning I thought the blogging was great, I'd get their immediate thoughts, but I'm starting to realise now that it does take them time for them to come up with their thoughts [and] that it wasn't going to be up the next day. But if you're gonna do it properly it's got to take time. (Year 4 teacher, interview)

Things didn't go well when I thought 'I must do guided reading, I must do spelling,' and trying to squeeze it all in... Accepting that if you want to do the job properly you have to take the time to do it...I know I take time to process stuff and they do as well. (Year 3/4 teacher, interview)



All of the e-fellows also had advice about the tools, although all agreed that their projects were not primarily about the tools.

It is not that blogs are the golden egg. The golden egg is actually that my students can choose the medium that suits them. That they are not limited to one means or another, handwriting or blog writing. (Year 11 teacher, online journal)

It [effective e-Learning] is far more important than a couple of tools that you, [use], you know what I mean...I think a) it's the interaction and b) it's the perfect opportunity for differentiation, for thought extension...And to me that's the really interesting and exciting side of ICT (Year 11 teacher, interview)

However, the tools were an important part of the projects and provided opportunities for learning that would not have been possible without them, and to use them effectively requires both technical knowledge and a disposition for flexibility in planning and conducting lessons.

It is not the ICT that has driven it. It has been a tool—an amazing tool for them to share their stories (Year 3 teacher, interview)

ICTs are a fantastic tool and I urge teachers who have become frustrated to take the time to become more confident...Your students may well be a tremendous resource, very quickly they will become experts and do much of the work for you, they will make terrific mentors to other students and also lead you to new ways to work with ICT.

It is a major area of concern when using ICTs how very quickly and frequently the tool—be it a server or the internet, connecting a data projector, camera, voice recorder etc can impact on a lesson. The way forward needs teachers who are ICT confident to problem solve and to also recognise when the plug needs to be pulled on a lesson and plan B swung into action. (Year 7/8 teacher)

Summary

The e-fellowships provided the teachers with conditions such as release time, a learning community, and additional tools that they would not otherwise have had access to. All considered that these conditions made it possible to take their projects to a deeper level than they otherwise might have been able to. However, all considered, too, that even without these extra supports it would be possible to implement their initiatives in the classroom.

The fellows described how working in e-Learning contexts either showed them for the first time, confirmed, or strengthened their understanding of the multi-modal nature of all texts, the need to focus on the connections between modes, the need to recognise and celebrate student strengths in a wider range of modes, and the need for both situated practice and overt instruction.

Their main piece of advice for others wanting to embark on projects such as their own was to slow down and take more time to explore fewer ideas in greater depth.

The main barriers teachers faced related to the accessibility, availability, reliability of the ICTs their students needed. All fellows found ways around these problems and all managed to successfully implement their projects—some in less than ideal conditions. However, some of them did consider the opportunities for teaching and learning were limited by these barriers.

Chapter 6: Discussion

In this chapter we summarise the key research findings and consider their implications.



Building capacity with multi-modal texts

The purpose of this research was to investigate how e-Learning contexts can be used effectively to support the literacy learning needed for the 21st century. In a multi-media age it is no longer sufficient to teach students how to make meaning solely of and with print texts. Students are faced with multi-modal texts on a daily basis. In a globalised world with diverse local communities it is no longer sufficient to teach students solely how to use Standard English and to do so only in classroom contexts. Students need to know how to learn and transform the discourses of all the communities to which they wish to belong. In a knowledge society students need not only an understanding of existing knowledge but the capacity to use and transform it according to changing needs and contexts.

Students need to be able to break the code, make meaning, use, and analyse multi-modal texts. They need a meta-knowledge which they can apply to new text forms that have not yet emerged or situations they have not yet encountered. In the e-fellows' classrooms there were many examples of students building these capabilities. It is our hope that these examples may be of use to other educators as they provide opportunities for other students to develop their literacy capabilities.

The findings of this research suggest that there are a number of affordances of ICTs and effective e-Learning environments that may help teachers provide the conditions needed for literacy learning to occur. In particular, the e-fellow projects provided students with opportunities to: work with freedom and constraint; work with diverse others; specialise according to their strengths and interests; share ideas; revisit ideas; and work with experts. These are all conditions which complexity thinking researchers have found to be present as complex systems emerge and evolve.¹⁸ These conditions may not *cause* learning but they are necessarily present when effective learning occurs.

The findings from this research highlight some of the ways in which ICTs, in and of themselves, offer affordances for literacy learning. In particular, we found that ICTs enabled students: to have greater choice about how to make meaning of and with texts; to work with diverse others; to specialise according to individual strengths and interests; to share ideas; and to reflect on, revisit, add to, and adapt ideas over time.

Engagement and achievement when working in different modes

One of our most interesting findings is that, in many of the e-fellows' classrooms, there were students who over the course of the project showed increased ability to read and write print texts, even though this was not the primary mode in which they had chosen to work. In many cases these were students who teachers described as lower performing readers and writers. Discussions about the importance of working across a range of modes sometimes engender a concern that functional literacy will be neglected and that reading and writing achievement will drop. The findings of this study suggest that such concerns may be unfounded or at least overstated. Instead, our findings suggest that opportunities to make meaning in a range of modes may in fact have the opposite effect—that is, of *increasing* achievement in reading and writing, especially for students with a history of underachievement in these areas.

For a country with one of the longest tails of underachievement in reading and writing in the OECD, and with an over representation of Māori and Pacific students at the lower end, this is an important finding. It is worth remembering here

¹⁸ For further information about complexity thinking as it applies to education, see Davis et al. (2008) and Davis & Sumara (2006).

that the e-fellows' projects were situated in schools covering a wide range of deciles and with quite different student populations, and that this finding held across many of them.

There are four possible reasons for this finding, each slightly different but related. It is likely that they operate in combination. These reasons relate to: student engagement; the multi-modal nature of all texts; the co-construction of learning; and developing meta-knowledge. We describe each of these in more detail below.

Student engagement

The e-fellow projects provided students with a wide range of choice about which modes to make meaning with. This meant that a greater proportion of students had opportunities to work from their strengths and pursue their interests. The e-fellows reported higher levels of student engagement during their e-fellow projects than in more traditional literacy activities. This was especially evident for students with a history of underachievement and lack of engagement. Evidence of high levels of engagement included increased: "on task" behaviour, levels of concentration and perseverance, willingness to spend out-of-school time on project work, and fewer behaviour management problems. The e-fellows also observed increased confidence and willingness to take risks with print texts and had anecdotal data and assessment results indicating improved achievement in reading and writing. This finding suggests that increased achievement and engagement in one mode may be associated with increased achievement and engagement in others.

The multi-modal nature of all texts

Another reason for our finding that improvement in one mode seemed to be associated with improvement in another relates to the idea that all texts are multi-modal at some level. Acts such as selecting music to support the message, choosing a colour to represent mood, or choosing the pitch of voice for a character, more often than not, require the interpretation of text (the script, story, a verbal narrative, and so forth). Conversely, as students make meaning of and with print texts they are at some level practising meaning making using visual image, vocal expression, and so forth.

Co-constructing learning

When taking on specialist roles in group work, students learnt from each other. The e-fellows found that although students took responsibility for different roles to complete a shared task, in most cases all group members became better at all of the roles, not just the one they were responsible for. For example, an expert in script writing working with an expert in making meaning through music resulted in both students becoming better at script writing and interpretation of script through music. This resulted from the need to work closely together to ensure that each part of the shared production complemented the others.

Building meta-knowledge

Finally, and most importantly, it is possible that working across modes gave students opportunities to develop a meta-knowledge of meaning making that can be applied to all texts, including print. In times when text types rapidly change, this is an essential skill. Learning the conventions of existing text types has its place but will not necessarily equip students with the ability to interpret and articulate new text forms yet to emerge. An understanding of the principles of meaning making, however, does provide students with tools that can be applied to future, and as yet unknown, text forms.

Although we did not see many examples of e-fellows directly teaching the meta-knowledge of meaning making, we did see examples of students learning it. This led us to conjecture that

literacy learning in e-Learning contexts can enhance the possibilities of students developing this meta-knowledge. We see two main reasons why this might be so.

The first is that working in e-Learning contexts provides opportunities to compare meaning making processes in many different modes and so helps students build an understanding of the *principles* of meaning making in a way that is not possible when focusing on only one mode. Fellows found that the act of working across modes provides the opportunity

to discuss and develop a *big picture* understanding of how meaning making works, in much the same way that learning a foreign language teaches the principles of languages.

The second reason that e-Learning contexts support the development of meta-knowledge is that when technologies are new the systems of meaning making are more visible. The word “technologies” is used here in its broadest sense here to encompass the technology of oral language, of print, of image, and so forth. The truth of this claim can be shown historically. The advent of the alphabet, and the printing press, led to much debate about the principles of meaning making because these became visible in a way that the principles of meaning making for oral forms of communication were not. Davis, Sumara, and Luce-Kapler (2008) argue that this invisibility is due to our embodiment of language.



The irony of a technology such as language is the manner in which it conceals its tremendous complexity. We don't see language as a technology because we embody it. By contrast, cutting edge tools impose themselves on our consciousness, demanding focused attention to understand and manipulate. (p.138)

On most occasions language use is not something we consciously construct. It “just is”. New language technologies provide us with an important opportunity to show students (and remind ourselves) of the constructed (rather than neutral) nature of language, what it can and cannot do, what it allows and disallows. Through studying the workings of language in areas where the workings are more visible because they are new (new technologies) we can help students to see the less visible ways in which older and more familiar technologies (such as oral language, and print) work, and how these technologies also function to shape our experiences and those of others. If we are interested in social justice and equity we cannot afford to overlook these teaching opportunities that new technologies provide. And if we do not take the opportunity while the technologies are new we will lose them. Davis et al. (2008) locate this responsibility with educators:

...the educator has two major responsibilities when it comes to technology: opening up new vistas of possibility by attending to emergent technologies, and preventing the shut down of other possibilities by technologies that have become invisible to their users. (p. 138)

We interpret the term “educators” to include all those working in the field of education, not just teachers. This includes policy makers, teacher educators, professional development providers, and researchers.

This leads us on to the final section of this chapter. How do we ensure that many more teachers and students have opportunities to explore the possibilities and constraints provided by emergent and existing technologies? Could we, and if so, how would we, scale up the experiences of the e-fellows and their students?

How do we maximise the benefits?

Our findings suggest that the e-fellows (and others like them) can be catalysts for change beyond the walls of their own classrooms. By the end of the e-fellowships this had occurred in three of the e-fellows’ schools, and was beginning to do so in others. This was not a case of e-fellows providing formal professional development sessions for their staff, or even reporting back on their projects at staff meetings. It was that the passion for their work and that of their students was infectious. Other staff members wanted to be involved. However, we also note that this scaling up effect happened with the presence of particular conditions. These were to do with the school context, the deep subject knowledge of teachers, the presence of ICT tools and policies that supported their work, and opportunities to disseminate findings.

The scaling up effect described at the start of this section requires the support of school leaders. One of the criteria for e-fellow applicants is guaranteed principal support. Most of the e-fellows had very high levels of school support.

The availability and reliability of ICTs varied enormously across schools and had a considerable impact on the type of projects the e-fellows designed and the possibility of implementing them. Many came from very well equipped schools in terms of ICTs and support staff. Others did not. One of the e-fellows designed a project that was dependent on students having access to home computers because the school ones were rarely available and not easily accessible. One e-fellow completely changed her project topic after the fellowship had begun due to school ICT difficulties. Many had to compromise or invent solutions to unanticipated problems on a just-in-time basis. One struggled with school ICT policies that blocked student access to the information they needed. The capacity to scale up is dependent on the mitigation of problems such as these.

Deep subject knowledge

Scaling up also requires teachers with deep expertise in their subject. The findings of this study indicate that teachers who have had pedagogically-focused ICT professional development and know their subject well can work out for themselves how to create e-Learning environments that support students to learn and transform discourses.

Deep subject or disciplinary knowledge is not acquired quickly. It is obtained through extended study, for example, by completing tertiary-level qualifications, and by participating and contributing in “real world” discourse communities. All of the teachers in this study had experienced either one or both of these.

This is particularly important in terms of focussed planning and management of learning outcomes and the teacher inquiry cycle, as outcomes can become “woolly” if not clearly identified or articulated in terms of setting learning goals and peer assessment, and less experienced teachers could well lose their way and be captured by the technology rather than the learning focus.

Opportunities to disseminate findings

Another way of scaling up is through sharing examples of effective teaching and learning. We saw many examples of this happening within and beyond the e-fellows’ schools, mainly through word of mouth and connections made online.

Dissemination opportunities were also embedded in the structure of the e-fellowships. The e-fellows produced e-portfolios on their projects that are available to the general public on-line. They also each presented at either The New Zealand Reading Association Conference or Ulearn.

Where to next?

This study provides information to support a broader and more inclusive concept of literacy than solely the capacity to read and write Standard English, and one that better supports students living and learning in the 21st century. Our findings in this exploratory study suggest that increased achievement and engagement in one mode may be associated with that in others. It would be interesting to do a more formal investigation into possible associations between engagement and achievement across different modes of meaning making.

The e-fellows’ projects were all situated in the learning areas of English, the arts, and to a lesser degree, the social sciences. As indicated in Chapter 1, this was representative of the applicants for 2009 e-fellowships overall. Consequently the findings presented in this report pertain primarily to literacy learning in these disciplines. However, we also need examples of literacy learning in e-Learning contexts within other disciplinary areas such as science and mathematics. Further research might also investigate teaching and learning about the ways in which literacy learning in one discipline might be similar to and different from that in another.

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Appendix A:

Teacher interview (first visit)

a) Your learning

- 1) Can you briefly describe what you have been doing in regards to [DESCRIPTION OF PROJECT]?
- 2) Can you describe to me any “ah ha!” moments you might have had? (Prompt: Please tell me about them, and how your thinking and/or practice changed?)
- 3) Have you noticed any (other) changes in your thinking about literacy teaching and learning or in your practice?
- 4) Have you noticed any (other) changes in your thinking about teaching and learning in e-Learning contexts, or in your practice?

b) Your students' learning

[NOTE: Some of the questions below may have already been answered or partially answered]

- 5) Can you describe a time when your students seemed to be really engaged and learning?
- 6) What factors/conditions do you think enabled this engagement and learning?
- 7) Can you describe a time when things did not seem to be going well?
- 8) What factors/conditions do you think contributed to this? (Prompt: Did you change anything as a result?)
- 9) What literacy skills, knowledge, and capabilities have you seen some of your students developing as a result of [PROJECT]?
- 10) Can you give me some specific examples/instances of this learning for particular students? (Prompt: How do you know they were learning?)
- 11) Have you learnt anything about your students or their skills, knowledge, and capabilities that you did not know before?

c) Barriers and possibilities

- 12) What possibilities for literacy teaching and learning are e-Learning contexts providing for you and your students?
- 13) Are there any barriers? How did you respond to these?

Concluding questions

- 14) Is there anything else you would like to say about literacy teaching and learning in e-Learning contexts?

Teacher interview (Second visit)**a) Your learning**

- 1) Can you briefly describe what you have been doing in regards to [DESCRIPTION OF PROJECT] since we last met?
- 2) Can you describe to me any “ah ha!” moments you might have had since we last met? (*Prompt: Please tell me about them, and how your thinking and/or practice changed?*)
- 3) Have you noticed any (other) changes in your thinking about literacy teaching and learning, or in your practice since we last met?
- 4) Have you noticed any (other) changes in your thinking about teaching and learning in e-Learning contexts, or in your practice since we last met?

b) Your students' learning

- 5) Can you describe a time when your students seemed to be really engaged and learning?
- 6) What factors/conditions do you think enabled this engagement and learning?
- 7) Can you describe a time when things did not seem to be going well?
- 8) What factors/conditions do you think contributed to this? (*Prompt: Did you change anything as a result?*)
- 9) What literacy skills, knowledge, and capabilities have you seen some of your students developing since we last met?
- 10) Can you give me some specific examples/instances of this learning for particular students? (*Prompt: How do you know they were learning?*)
- 11) Have you learnt anything about your students or their skills, knowledge, and capabilities that you did not know before?

c) Barriers and possibilities

- 12) What possibilities for literacy teaching and learning are e-Learning contexts providing for you and your students?
- 13) Are there any barriers? How have you addressed these?

d) Concluding questions

- 14) What is the most significant thing you learnt or did as an e-fellow?
- 15) What advice would you give to other teachers who want to try these ideas out?
- 16) Is there anything else you would like to say about literacy teaching and learning in e-Learning contexts?

Appendix B:

Student focus group questions (first visit)

- 1) Can you tell me about [DESCRIPTION OF PROJECT]? What sorts of things have you been doing? (Could go around the circle with each child adding to the “story”).
- 2) Are these the kinds of things you usually do [at reading/writing/story time/in your class] or are they different? [Prompt for differences/similarities. We will need to prompt in relation to the specifics of the project, e.g., on-line mentors, etc]. How are they different?
- 3) What sorts of things are you learning?
Prompts:
 - *Did you learn things about other people in your class/your teacher/parents/people in the community/online that you didn't know before?*
 - *Did you learn things about yourself you didn't know before?*
 - *Did you learn things about being a [reader/viewer/listener/writer//performer/ presenter] that you didn't know before?*
- 4) Can you think of a time when you noticed you had got better at something or learned something new, or got a new idea from working on [PROJECT]? (Give students reflection time, i.e., time to think, or write/draw “notes”, or share with a partner before reporting back). Can you tell me about that time?
Prompts:
 - *What did you learn?*
 - *What were you doing?*
 - *Were you working with other students, the teacher, parents, people in the community, people on your own? Face-to-face? Online?*
- 5) So far, what parts of [PROJECT] do you like the most?
- 6) What parts of [PROJECT] do you like the least?
- 7) So far, what parts of [PROJECT] are you most proud of, and why?
- 8) Are there any ways [PROJECT] could be even better?
- 9) Do you think other teachers should do projects like [PROJECT] with students? Why or why not?
- 10) Is there anything else you would like to say?

Student focus group questions (second visit)

- 1) Last time I visited I heard about [DESCRIPTION OF PROJECT]. Can you tell me what you have been doing on [PROJECT] since then? (Could go around the circle with each child adding to the “story”)
- 2) Are these the kinds of things you usually do [at reading/writing/story time/in your class] or are they different? [Prompt for differences/similarities. We will need to prompt in relation to the specifics of the project, e.g., on-line mentors, etc]. How are they different?
- 3) What sorts of things are you learning?
Prompts:
 - *Did you learn things about other people in your class/your teacher/parents/people in the community/online that you didn't know before?*
 - *Did you learn things about yourself you didn't know before?*
 - *Did you learn things about being a [reader/viewer/listener/writer/performer/ presenter] that you didn't know before?*
- 4) Can you think of a time you noticed you had got better at something or learned something new, or got a new idea from working on [PROJECT]? (Give students reflection time, i.e., time to think, or write/draw “notes”, or share with a partner before reporting back). Can you tell me about that time?
Prompts:
 - *What did you learn?*
 - *What were you doing?*
 - *Were you working with other students, the teacher, parents, people in the community, people, on your own? Face-to-face? Online?*
- 5) Overall, what parts of [PROJECT] do you like the most?
- 6) Overall, what parts of [PROJECT] do you like the least?
- 7) Overall, what part of [PROJECT] are you most proud of, and why?
- 8) Are there any ways [PROJECT] could be even better?
- 9) Do you think other teachers should do projects like [PROJECT] with students? Why or why not?
- 10) Is there anything else you would like to say?