

Comprehension Instruction for Digital Natives

How digital shared reading and cooperative learning
are transforming two diverse New Zealand
classrooms



Neale Pitches

The Problem

Year after year, Kyran Smith – Deputy Principal and Literacy Leader of Wellington’s Miramar South School – faced classes full of grade 5, 6, and 7 students who struggled with literacy. Kyran was a competent teacher, so why wasn’t she managing to make inroads into her students’ flagging reading comprehension?

Farther south in Christchurch, high-school English teacher Laura Borrowdale was asking herself the same question. Over the course of 18 months, she’d tried many approaches to improving the low literacy rates of her grade 8 and 9 cohort. But even with the in-class support of a specialist literacy educator, Laura’s students’ progress was too slow.

The two teachers could have decided their students were inherently poor readers. Kyran could have invoked the low socio-economic status (SES) and ethnic backgrounds of her students, predominantly from Pasifika, indigenous Māori, and refugee/ELL families. Laura could have likewise blamed the behavioral problems of her mostly male 14–15-year-old students at Hagley Community College, an inner city school known for taking in “last-chance learners.”

But Kyran and Laura refused to believe that their students were destined to the low literacy rates, and decided to keep trying for that elusive progress in literacy.

Both teachers were in fact dealing with a more fundamental problem that goes beyond SES indicators and beyond New Zealand borders: the slump in reading comprehension in the middle years of school that occurs in the USA and throughout the OECD (Mullis, Martin, Gonzalez, & Kennedy, 2003; OECD, 2001). Research indicates – and teachers well

know – that while children generally develop sound reading skills when they first begin school, many later find that they are no longer able to apply those initial reading strategies to more demanding texts. At this point, contends Canadian sociologist Keith Stanovich, good readers get better while those less well equipped fail to progress. The prevalence of this veritable phenomenon led Stanovich to brand it the “Matthew Effect,” applying the Biblical reference to the “haves” and the “have-nots” in terms of literacy wealth.

While this fall-off in comprehension rates is an attested fact in many Western nations, including Australia and the United States, Kyran and Laura refused to accept this fate for their students. Questioning their approach to teaching rather than the students’ capability to learn, the two educators discovered a new mixed-media comprehension system designed precisely to target this problem.

The Intervention

Neale Pitches is the CEO of South Pacific Press, in New Zealand. He is an educational resource developer, and a former teacher and principal. He is not willing to accept the inevitability of middle years’ literacy failure. Neale found a willing joint-venture partner in Jim Connelly, President of Pacific Learning of California, and began work in 2005–2006 developing a resource, grounded in best practice and robust research, to provide instructional support – leadership even – to teachers and students in grades 3 to 8 and above. Neale brought together a team, including New Zealand educator Meryl-Lynn Pluck, publisher Matt Comeskey and, for the first year, Pacific Learning’s Toni Hollingsworth. Over a period of two years the team developed *CSI – Comprehension Strategies Instruction*, the acronym deliberately chosen to underscore the

similarities between reading comprehension and forensics with which popular culture has an enduring fascination, due in part to the successful television series of the same name. Neale was convinced that the deliberate and explicit teaching of comprehension strategies as advocated by, for example, Harvey and Goudvis (2000; 2007) and P. David Pearson in the context of a strong engagement factor (advocated by US academic John Guthrie [2001]) would yield the accelerated progress that was needed. That engagement factor would need to be a mix of pedagogy, texts, and technology – quite a challenge.

The pedagogy was influenced by the findings of researchers Graham Nuthall and Adriene Alton-Lee, but especially the work of Nuthall, whose research Neale allied to his own views that a child's educational performance was heavily influenced by classroom practices, and that there was no inevitability about low SES effects on student literacy learning. Pitches synthesized the big idea in Nuthall's research as "all students can learn difficult concepts as long as they have several exposures to the concept in different ways while the concepts are in working memory." The *CSI* project, accordingly, adopted a learning model which involved text-based, explicit instruction of a new concept, followed by text-based peer cooperative learning of that concept that was further extended: not only do students work together as learning partners, but they work as a learning community – entire classes work together on the *same text*.

In two further decisions the *CSI* project team determined that teachers and students would use texts that were on-grade level and that 80 percent of all texts to be used would be nonfiction, and three quarters of texts would be from the content areas of science, math, and social studies. The research indicates that it is the content area and nonfiction texts that

provide many of the literacy challenges to middle years students.

In their recent publication "Let's Start Leveling About Leveling," (2011) Glasswell and Ford conclude that there needs to be a balance between texts that are cognitively challenging and those that are emotionally supportive. The *CSI* project team had the same philosophy, believing that students would benefit from on-grade-level texts if they had the support of their teachers, their peers, and the digital scaffolds that are all features of the *CSI* project.

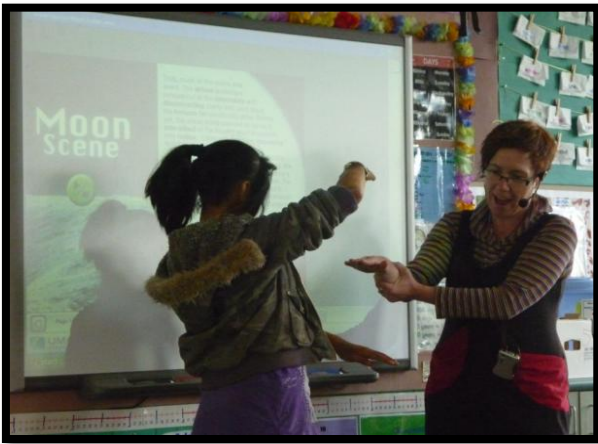
This challenging yet supportive design has been endorsed by both Kyran and Laura, who have reported how well students have responded to more difficult texts, and how much they engage with and enjoy being able to read, think, talk, and write about the on-grade-level texts.

Harnessing interactive whiteboard and other advanced technologies, half of the *CSI* texts (those designed for explicit teaching) are interactive digital texts which include hyper-linked glossaries and video footage. The student cooperative texts are hard-copy format accompanied by audio files. This is a new approach to "differentiated instruction" whereby students' differences are accommodated through scaffolding rather than leveling. The strongest scaffold is explicit teaching, where the teacher reads and thinks aloud and encourages student interaction as, together, the teacher and class work through the text.

Kyran and Laura believe that this is key. Although the *CSI* package includes guidance and lesson plans for teachers, both teachers now feel sufficiently experienced and comfortable with the method to the point where they don't need to "follow the lesson

plans.” Kyran, for instance, no longer even pre-reads passages before class. In displaying an unseen text, she can emphasize to her students that she and the students are “all the same” in that neither have seen it before, but they all share their thinking strategies in trying to understand it. This equal footing is empowering for the students, Kyran says.

After reading the text aloud together, the students – and Kyran – show each other how much they feel they understood the text, on an imaginary sliding scale with their hands.



Kyran Smith and a Miramar South student show each other, and the class, their levels of understanding of a CSI text, which has been projected onto an interactive whiteboard.

Kyran then talks the class through her own way of processing the text, while making sure to reference the particular *CSI* reading strategy (or strategies) the class is working on: “This is what I do as a reader. I’ve never been to space so I’m *making connections to the world*, from what I’ve seen on TV [. . .]. I’m going to show you what I do using the *visualizing* strategy. I’m picturing a cloud of dust that looks like a flower . . .” Working with a learning partner, the students then discuss and apply the strategies for themselves. The metacognitive principles on which *CSI* is based encourage learners to become critically

aware of their thought processes and the strategies they employ to understand a given text. What’s more, they develop skills in monitoring and evaluating the effectiveness of these approaches when assessing their levels of understanding. As a result, the students take ownership of their reading and become more independent, more confident readers.

Not only do the students become more knowledgeable about themselves, but their breadth of world knowledge increases, too. Clearly the content of the texts and the quirky, thought-provoking and inspiring topics provide much-needed background knowledge as well as motivation to read. They variously present young people as heroes, raise moral and ethical questions, or take poetic form, all authentic examples of the sorts of text that students meet every day.

In terms of content literacy, the exposure to such a wide range of material seems to add substantially to the students’ vocabularies and their ability to handle more complex texts. Indeed, experience with a variety of stimulating texts is increasing not only the baseline of cognitive skills that students master on their own, but also their ability to operate at higher levels without guidance. This is evident by the strong increases in comprehension evidenced by the post-testing.

Furthermore, the students are up for the challenges of more demanding texts. The domain-specific vocabulary, and the concepts included in the texts are purposefully tough in places. In Kyran’s experience, however, the students thrive on the challenge. If they are unable to draw on any prior or background knowledge, they draw inferences or use other comprehension strategies, working together as a learning community. While Kyran admits that she would never have given her students

such difficult texts in the past, she now recognizes that the texts need to stretch the learners – high- and low-operators alike – so that they can see the strategies working.

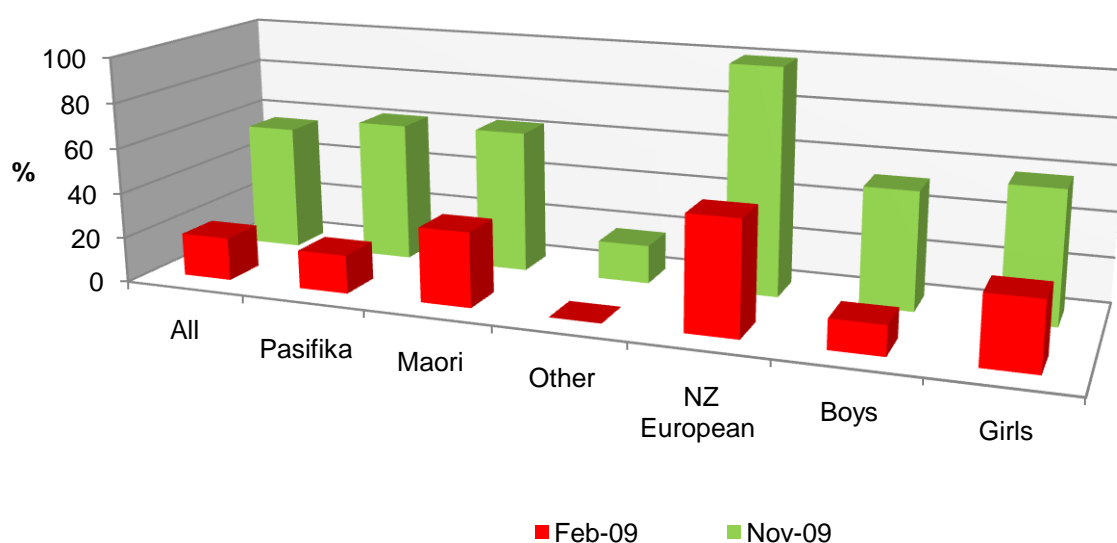
Laura voices this exact same opinion. In many ways, she adds, the pressure is taken off her students to perform if they know that the texts are tough. So when Laura tells her students that *The Hounds of the Baskervilles* is a difficult text, their appetites are whetted and they rise to the occasion, performing “almost despite themselves.” Again, this experience confirms the research cited by Glasswell and Ford that “children can have less than successful interactions with at-level texts and sometimes more successful interactions with more difficult texts.” (210) After trying to figure out the puzzle, what then really delights learners is being able to check the meaning of selected words by touching vocabulary that is hyperlinked to embedded digital glossaries.

The Outcomes

The excitement and engagement of Kyran’s and Laura’s students are borne out in the results of pre- and post-tests for literacy levels. Three years of asTTle (Assessment Tools for Teaching and Learning) data for Miramar South School consistently show huge improvements in the reading comprehension of students after *CSI* instruction. Figure 1 (below) gives a snapshot of the percentage change in students’ test scores before and after the intervention in 2009.

Across 2008–2010, an average of 86 percent of students started the year in the lower quartiles for reading. By the end of each year, however, almost half of the students, on average, were reading at or above national norms. Disaggregated by ethnicity, the test scores for the three years of different cohorts reveal that Māori students made some of the biggest advances in comprehension, with shifts to the upper quartiles of up to 75 percentage points between tests.

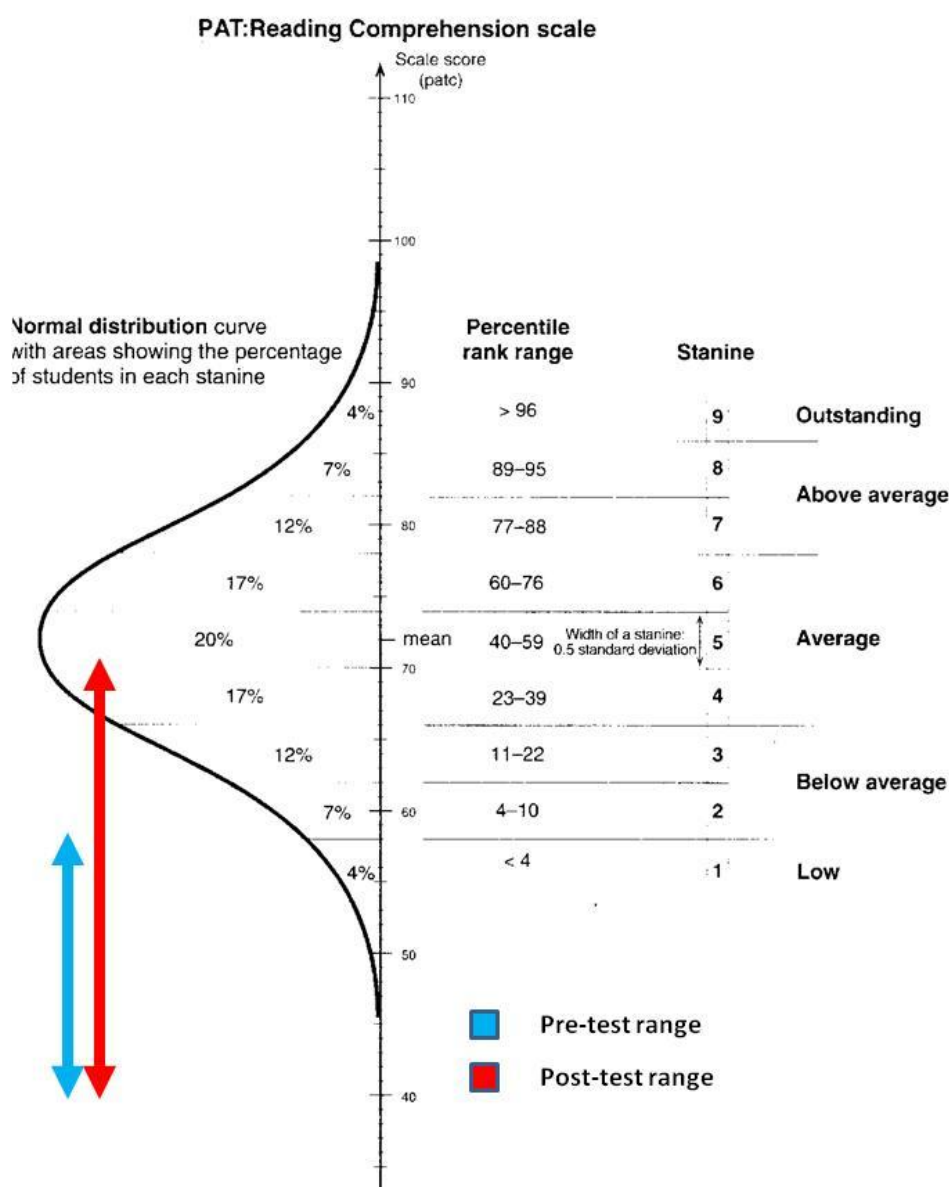
Figure 1: Percentage of students at Miramar South School reading at or above national norms in the asTTle test, pre- and post-CSI (2009)



On a larger sample size, Pasifika students also made considerable gains: in November 2010, for example, 72 percent of this learner group was reading at or above national norms, compared to 22 percent before the *CSI* intervention. As for performance by gender, data indicate that boys progressed at a greater rate, meaning that they caught up with – and in one instance, surpassed – the proportion of girls reading at or above the national norm.

Students from Hagley Community College also produced dramatic results, as illustrated below in Figure 2. Before the *CSI* intervention, Laura’s students posted an average score of 50 units in the Progressive Achievement Test (PAT) for reading comprehension, well below the national average of 72 for their age group. But after just four-and-a-half weeks of *CSI* instruction, the same students lifted their average to 60 PATC units.

Figure 2: Percentile-based ranks of students at Hagley Community College against national distribution for the PAT reading comprehension test, pre- and post-*CSI* (2009)



While this score remained below the national average, the students experienced remarkably accelerated achievement, progressing at double the standard yearly rate of improvement (5–6 PATC units) over the course of just one month.

For Laura, the rate of change was so good that it was almost “perversely demoralizing” – she explains that after struggling for 18 months to make any significant advances in her students’ literacy, she felt disappointed that she’d expended so much effort up to that point, only to find a resource that worked so effectively in such a short space of time.

Not only did both Kyran and Laura’s students’ comprehension scores improve, but there were other benefits. Laura’s students’ behavior improved, too. Instead of off-task and petty talk, the students spoke out to agree or disagree with their peers’ interpretations of the texts. Following the success of Laura’s *CSI* trial, the school is now using the system right across grade 10, and students are being taught to apply *CSI* strategies more broadly. At Miramar South School Kyran reported that the 2008 class experienced higher math scores, as well as higher reading comprehension scores. The metacognitive and problem-solving strategies, and the resilience developed by students in their learning communities, clearly carried over into the test environment as students gained in resourcefulness.

These are, of course, the success stories of just two New Zealand schools that used the *CSI* resource. But there are many others, including many classrooms across the USA. There are significant implementations in Newport News and Prince George County, VA, USA, and in St Paul, MN.

The Implications for Teaching and Learning Practices

So, is *CSI* really a “silver bullet” for reading comprehension? As Kyran and Laura both attest, there are certainly many benefits to be had from using this resource. From a teacher’s perspective, the package provides clear guidance through exemplar lesson plans and a rich pedagogic framework that accelerates their students’ literacy progress. More importantly, it provides 80 texts per grade level all chosen to engage and challenge their student readership, and to expose them to the content matter and strategic thinking experiences needed to help them through the crucial middle years of schooling. *CSI* is explicit about instruction, yet flexible to allow for teacher professionalism. Premised on an increasingly evidenced metacognitive approach, it also promotes formative assessment which is responsive to learners’ needs and supports their improvement over time as increasingly self-aware readers. Importantly, *CSI* offers opportunities for growth through its cognitively demanding texts that can at the same time be taught and understood at different levels.

Some might question how much the success of *CSI* actually relies on the individual teacher, and his or her abilities. This is a fair question. Both Kyran and Laura acknowledge that to an extent, they gained their students’ “buy-in” for *CSI* through the strength of their trust relationship with them. But it was more than that. Let’s not forget that as competent teachers with good student rapport, the two teachers were nevertheless struggling to make a difference in their students’ comprehension rates pre-*CSI*.

There are three strong challenges to established literacy classroom practice that warrant further investigation:

1. *CSI* seems to be showing that there is great benefit on students all working together on one text – to form a learning community, where they share thinking, problem-solving, and metacognitive strategies.
2. The notion of “leveled students, leveled texts” that underpins much literacy instruction is called into question and, at least, should be varied for elements of the classroom literacy program where explicit instruction is the goal and students can be scaffolded into texts that they may not be able to read alone.
3. New technologies, such as interactive whiteboards, seem to show promise to engage students more and provide embedded objects to scaffold students into better understanding of texts – especially nonfiction, content-oriented texts that research evidence shows are the stumbling blocks to students’ literacy progress in the middle years of schooling.

Critical success factors of the *CSI* literacy resource

- Short, engaging digital texts that respect and challenge readers
- Cooperative learning
- Tight adherence to rich, evidence-based pedagogy
- Pre-prepared lesson plans
- Explicit teaching
- Modeling reading behaviors
- Metacognitive principles that nurture critical self-awareness
- Content literacy for all

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