William M. Cruickshank Memorial Lecture Delivered at the 2017 Conference of the International Academy for Research in Learning Disabilities

Learning About Learning Intervention

Lorraine Graham
Melbourne Graduate School of Education

In preparing for this address, I have read many articles and editorials authored by William M. Cruickshank (e.g., Cruickshank 1952, 1976, 1977, 1978, 1985). I think it is safe to say that Bill Cruickshank was a man of strong opinions and a prolific writer. Not only did he contribute to the very beginning of the field of learning disabilities (LD), he strongly advocated for students with LD. He firmly believed that students with learning disabilities needed very competent teachers, carefully crafted educational materials, and well-designed learning opportunities. He also believed that teacher education was very important to ensuring the progress of learners who face challenges; and, he believed in the power of collaboration – across disciplines in interdisciplinary teams and, in the case of the International Academy for Research in Learning Disabilities (IARLD) – across the globe. I am honoured to deliver this 2017 address that bears his name.

As early as 1952, Bill Cruickshank highlighted the importance of teacher education to the future prospects of students who face learning challenges. As he wrote, when president of the International Council of Exceptional Children,

> In considering certain of the major issues regarding exceptional children in contemporary education, two problems immediately come to the fore. The first of these is concerned with the education of the specialist teacher, the second with the education of general classroom teachers at all levels. (Cruickshank, 1952, pp. 1-2)

Comments on the importance of teacher education and teachers' professional learning, and the associated work that my colleagues and I are involved in at the Melbourne Graduate School of Education, will conclude my presentation. But to get to that point, we will map my own learning journey – as a teacher, a student, a researcher, a program developer, and a teacher educator – guided by salient quotes from William M. Cruickshank's corpus of work.

Definition

> The issue of definition is one wherein there are significant differences of opinion. I have written on this issue so often that I recently promised myself and several others that I would never discuss the matter again. (Cruickshank, 1985, p. 576)

In the Australian context, it is important to clarify what we mean by the terms *learning difficulties* and *learning disabilities*. In Australia, the group of students considered to have learning difficulties is much more broadly defined than in North America. Across all states and territories, in state schools, independent schools, and Catholic system schools, students with learning difficulties are considered to make up about 20% of the school age population. They are "a diverse group that demonstrates low achievement in academic subjects for a myriad of reasons" (Graham & Bailey, 2007, p. 386). Of these

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students, about 5% are considered to have severe/specific learning difficulties or learning disabilities.

In talking specifically about the differences between the North American and Australian definitions, I note, however, that the report on the state of learning disabilities released in May 2017 by the National Center for Learning Disabilities (Horowitz, Rawe, & Whittaker, 2017) is *called Understanding the 1 in 5,* and focuses broadly on the *learning and attention* issues experienced by 20% of children in the United States. Our definitions of the students who are of particular interest to us as members of the IARLD may be converging over time. Our students with learning difficulties in Australia do not routinely attract funding, but they require instructional support.

Students

> I like students – love them indeed. We get along well. (Cruikshank, 1978, p.6)

I have always been interested in supporting students who found learning a bit of a struggle. Immediately after my first year of teaching, I enrolled in graduate studies to learn more about how to work with my students, particularly how to better teach reading.

As for most teachers, the students in my first class are particularly memorable to me – along with the challenges they faced. One student I remember so clearly from my first class of 10-year-olds had significant reading difficulties: Decoding was a mystery to him, and his reading was beyond laborious. Yet, his listening comprehension skills were superior. Those 19 girls and 16 boys in my first class of Year 5s in a small hinterland Queensland state school and their learning, or lack of learning, gave direction to my career and a logic to the narrative of my professional life. Because I couldn't teach Terry to decode fluently, I had to learn more about teaching reading to middle school students. Because Danielle had such problems with numbers and because Che read encyclopedias for fun in those pre-Internet days, I had to learn more about how to teach my students and how to put this knowledge about teaching into practice.

Bill Cruickshank's students also influenced his career. He refers to his graduate students in the quote above, but he writes throughout his career about the students he worked with in Syracuse and Michigan – students with cerebral palsy, intellectual impairment, and learning disabilities – and his quest to provide them with the structure and instructional match they needed to experience success and to learn through his learning intervention.

Learning Intervention and the 3H Strategy

> Regardless of the tools used, it is an absolute in considering the concept of the psychoeducational match that such evaluation and assessment be done, in order that teaching materials and the learning environment can be matched with the specific processing needs of the child under consideration. (Cruickshank, 1977, p. 59)

The title of the 2017 Cruickshank Memorial Lecture is *Learning About Learning Intervention*. It is so titled for two reasons. First, because the International Academy for Research in Learning Disabilities is an association of learners always wanting to improve learning for all, and, second, to pay homage to Bernice Wong, Emerita Professor of Simon Fraser University. Bernice was my thesis and dissertation supervisor and is my long-time mentor and friend. Bernice produced, among other books, *Learning About Learning Disabilities* (1991, 1998, 2004, 2012) – hence, *Learning About Learning Intervention*.

Learning Intervention is also the title of the professorial position I hold, and of the master's program that my colleagues and I offer inservice teachers, which includes a specialisation in specific learning difficulties. Our students who have learning difficulties, behavior difficulties, and social difficulties need teachers. They also need systematic, explicit teaching, automaticity – and intervention.

In my process of *learning about learning intervention*, I was very fortunate to work with Bernice Wong as she was continuing her work with metacognition and students with learning disabilities, as well as reading, and writing, and self-questioning strategies. My work with Bernice was focused on reading, particularly reading comprehension and question-answer relationships. In deciding on my research focus, I was again very aware of my first class of students and the learning profiles of two students in particular.

Terry was a student with great general knowledge but extremely poor reading skills. One school

day, when we had to complete a task quickly because it was almost lunchtime, I swapped a reading comprehension exercise for a listening comprehension exercise, and Terry's scores were extraordinary: So low for reading comprehension; so high for listening comprehension.

And, then there was **Simon**, also a student in my first class. One day I was marking a comprehension task as a whole-group activity and, again, I was in a hurry. The task was to read a passage about the life of Galileo and answer questions. One of the questions was, "Name three inventions that Galileo's work contributed to." My students were able to tell me about the microscope and the telescope, but not the third invention. I prompted them by saying, "Come on, it's in the passage." Not thinking that the word (*stethoscope*) was unknown vocabulary for my students, I kept prompting them. "Come on. Doctors put these in their ears and test your heart." Still no correct answer. "Come on, Year 5s. Doctors put these in their ears and test your heart with them. What is the answer?" Suddenly, Simon had an answer. "Miss, it's an ear testicle!" I had not taken into account the vocabulary knowledge of my learners and the novelty of the word *stethoscope*.

3H Strategy: Study 1

My subsequent work looked at, in the first instance, using a self-instructional strategy to answer questions after reading a passage. In this study (Graham & Wong, 1993), I had 90 participants, 45 average readers and 45 poor readers from Years 5 and 6, and three conditions: didactic (or direct) teaching; self-instructional training; and a control condition.

The didactic teaching condition covered the specific instruction of what to do to answer questions after a passage, but it did not require overt traces of strategy use by the students. Students in the self-instruction condition learned three self-questions through self-instructional training. This training consisted of four stages (a) modeling by an adult or more knowledgeable other through the steps of the strategy; (b) overt guidance by the instructor; (c) faded self-talk; and finally (d) covert self-instruction. The students in the control condition were not taught a comprehension question-answering strategy, but were asked to complete the same assessments as the other two groups.

The strategy that was the focus of the study was the 3H Strategy (Where is the answer to this question found? Here, Hidden, or in my Head), which entailed teaching the students in the self-instructional training condition the following self-questions:

1. How will I answer this question?
2. What type of question is this?
3. Is my answer correct?

During self-instructional training, students initially used prompt cards to guide them, with the use of these prompts faded over time. As the teacher, I modeled the strategy, and the students followed – first overtly, then covertly. Students were also systematically asked to, "Think aloud for me, please."

The finding of this study (see Figure 1) showed that training was significant. Specifically, self-instructional training was more effective than didactic teaching. What was also notable, qualitatively, was that students in the self-instruction condition were more engaged and active than their peers in the other conditions. They knew that they had to have good reasons for their answers to comprehension questions.

In revisiting this study in detail, I am reminded of the rich detail of many intervention studies. This is important because we are working in an age of "evidence," and so much of what is considered evidence is related to meta-analyses and rankings of effect sizes. And yet, meta-analyses and meta-meta-analyses are subject to criticism because they average out so much important information about what actually makes an impact on the learning lives of students (Simpson, 2017; Wiliam, 2016a; Winne, 2017). As Wiliam (2016b) observed, "In education, 'What works?' is rarely the right question, because everything works somewhere, and nothing works everywhere, which is why in education, the right question is, 'Under what conditions does this work?' And, I would add, 'For whom, does this work?'" (slide 30).

Though the 3H Strategy has been used widely across settings and students, going back to the original research in preparing this presentation reminded me of how carefully designed the studies were, even though the main thing that is remembered in relation to the 3H Strategy is that it cues students to think about where answers to questions are found using the mnemonic Here, Hidden, or in my Head.

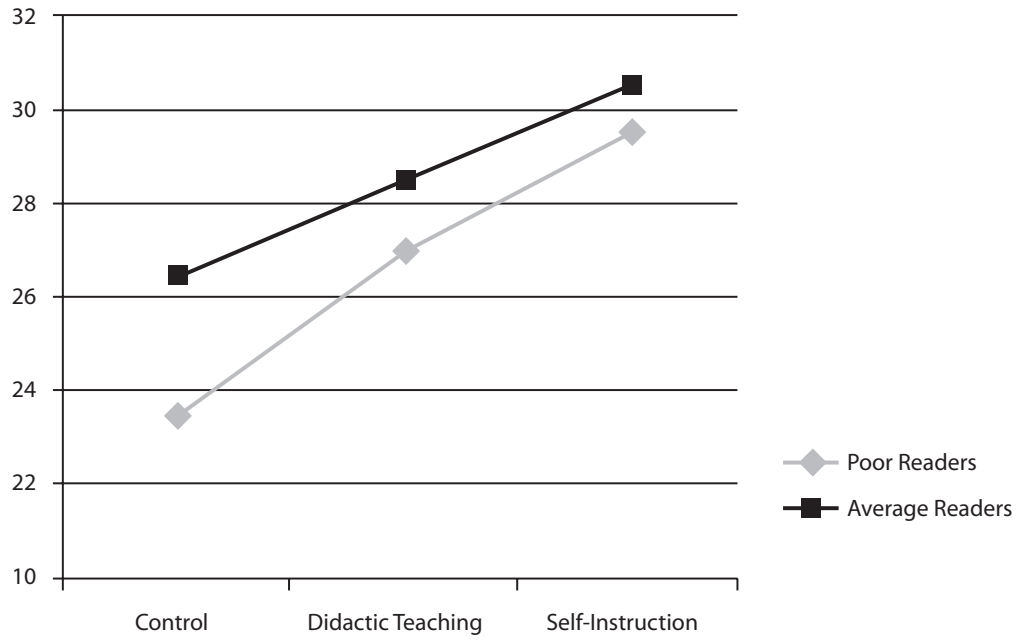

Figure 1. The comparative effectiveness of a question-answer relationship strategy.

3H Strategy: Study 2

The second study that focused on the 3H Strategy looked at a number of other features of interest to instructional intervention studies (Graham, 1992). It included a sample of students who were labeled learning disabled, as well as garden-variety poor readers, and a comparison group of average readers. Table 1 shows these students' profiles on the pretest measures.

In this multiple-baseline study, students' preskills were probed, and their performances were assessed before, during, and after the intervention, including in their classrooms and by delayed maintenance testing four months after the intervention was completed. Metacognitive awareness was targeted, and so was inference making, as a key comprehension skill.

In this research, features of the 3H Strategy made it a before-, during-, and after-reading strategy, with a self-questioning component. It was introduced through a metaphor of reading as travelling and used very simple training passages. From the descriptions of the 3H Strategy available on the web, it would seem as if the 3Hs are simply a guide for teachers. However, as designed, the 3H question-answer relationship strategy combines direct instruction and strategy instruction to support students' comprehension skills.

Table 1
Pretest Profiles of Participants in the Second 3H Strategy Study

Group	WRAT[a] Word recognition standard score		W-J[b] Word attack standard score		Modified PIAT[c] Reading comp standard score		Modified PIAT Listening comp standard score	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Learning disabled	85	(12.0)	80	(9.91)	10.70	(3.02)	19.1	(3.87)
Poor readers	95	(7.23)	85	(6.38)	12.69	(4.24)	14.63	(4.06)
Average readers	113	(3.23)	112	(11.77)	15.36	(4.01)	15.36	(2.98)

Note. [a]Wide Range Achievement Test. [b]Woodcock-Johnson. [c] Peabody Individual Achievement Test.

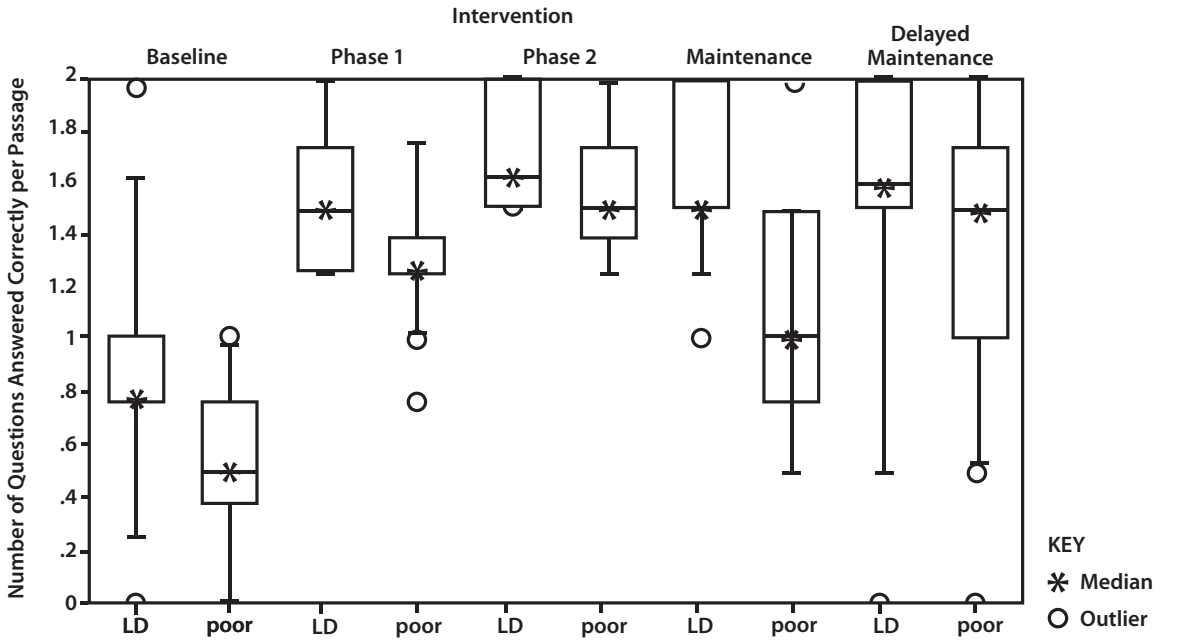

Figure 2. Results of the second 3H strategy study.

In this second study, the groups of LD and poor readers changed from being outperformed by their average peers at baseline, to outperforming the average students during training (see Figure 2). On maintenance and delayed maintenance testing, the trained students recorded scores similar to those of their average peers. The 10 LD students did better than the 16 poor readers throughout. Not only was their comprehension performance higher, so were also their metacognitive scores overall.

When it came to an examination of inferencing skills, in particular, successful inference making was dependent on strategy use (see Table 2). Components of the strategy and the students' actual use of these parts of the strategy were investigated using conditional probabilities. Across Phase 1 and Phase 2 and then the maintenance and delayed maintenance sections of the study, traces of strategy use were examined. A trace score of 0 meant that there was no evidence in the students' work about whether they had used the classification of the question and its answer as Here, Hidden, or in my Head, or any evidence of whether students had underlined appropriate information from the text when answering Here (text explicit) or Hidden (text implicit) question-answer relationships (QARs). A trace score of 0 was associated with only a .28 conditional probability of getting the comprehension answer correct. In contrast, if students had a trace score of 2, meaning that they identified the QAR and underlined appropriate text information, their likelihood of getting the answer right was 92%. Most interesting, however, the students who showed evidence of underlining the correct information where appropriate were almost as likely to have answered correctly on the delayed posttest, with a conditional probability of .91, as the students who had a trace score of 2. No wonder students made comments such as the following about the most useful features of the 3H Strategy to them:

- "With the 3H Strategy, I could understand the question more. And, with the underlining whenever I answered, I could check my answers. It's right there for some and I can see that clearly now."
- "The 3H Strategy helped me with the underlining. It helps with the information. I used to find an answer and then, you know, I lost it, and I lost it again. Now I find the answers and underline them, and I go back and check."

These comments give an insight into the students' modifications of the strategy they were taught, specifically the part they thought was most

Table 2
Conditional Probabilities of Trace Scores for Strategy Use

	Phase of the Intervention			
Trace Score	Phase 1	Phase 2	Maintenance	Delayed
0	0.43	0.42	0.21	0.28
2	0.86	0.89	0.93	0.92
1	0.90	0.86	1.00	0.91

Note. 0 = no evidence of either question categorisation or underlining. 2 = evidence of both categorisation and underlining. 1 = evidence of underlining only.

efficient for them in terms of energy and effort cost and outcome benefit.

Exactly this kind of research about students' modifications of an inculcated strategy was called for in the long version of Bernice Wong's 1985 paper that explored issues in cognitive-behavioural interventions in academic skill areas (Wong, 1985). Looking at the personalisation of strategies remains very relevant to intervention research today as we work with issues of implementation, evaluation, fidelity, scale, student agency, and sustainability.

Automaticity and *QuickSmart*

The kinds of comments made by the middle school students who learned the 3H Strategy also remind us, as John Elkins (2001) wrote in his essay in honour of William M. Cruickshank that,

> Reading, writing, calculating and other mathematical skills are examples of culturally created tools that can themselves scaffold further learning. Thus those students who experience learning difficulties are doubly disadvantaged because they find it difficult to use these tools and are usually reliant on individual assistance. In most cases, students will need to be supported in an apprenticeship mode, often requiring individual attention till they can perform independently. However, practice is needed to consolidate newly learned skills. Lack of automaticity limits the ability to apply high-level thinking in literacy or Mathematics. (p. 190)

This echoes what William Cruickshank wrote in 1976 when describing the problems experienced by some students with learning disabilities and their solutions:

> Research is required of a long-term nature. We do not need more studies of six or eight heterogeneously characterized children for three weeks for a few minutes a day in two learning climates to determine whether or not a cubicle is satisfactory or unsatisfactory! (p. 158)

In terms of my career, an opportunity to take what I had learned about learning intervention so far (that is, that a minimum number of sessions should be about three a week for 30 minutes; how to structure activities for success; the importance of outcome measures of near and far transfer and teaching for generalization) took shape at the University of New England (UNE) in partnership with Professor John Pegg, a mathematics educator and the director of the National Centre of Science, Information and Communication Technology and Mathematics Education in Rural and Regional Australia; and Dr. Anne Bellert, now at Southern Cross University (see, e.g., Graham & Bellert, 2005; Graham & Pegg, 2013; Graham, Bellert, & Pegg, 2007; Graham, Pegg, & Alder, 2007; Graham, Bellert, Thomas, & Pegg, 2007; Pegg & Graham, 2013).

Our work together was sparked by a visiting professor, Mike Royer, from the University of Massachusetts, Amherst, who spent six months at UNE in 1999. Mike showcased his computer-based academic assessment system (CAAS) in a seminar. He was using this system and a series of tasks to "diagnose" attention deficit hyperactivity disorder (ADHD), dyslexia, and garden-variety poor readers, but John and I saw the potential of this tool for monitoring performance during intervention.

Using the CAAS, a student responds verbally to a stimulus that appears on the computer screen (either a number sentence, 5 x 3, for example; or a word like *table*). The CAAS records the students' response time, and then an instructor scores the response as either correct or incorrect. Finally, the CAAS automatically generates a progress graph.

Together, Anne, John, and I developed two interventions in basic academic skills for middle school students from Years 4 to 10 – one for literacy, focusing on word recognition and building to comprehension, and one for numeracy that emphasized number facts across all four operations and extended to problem solving. We received funding from a series of grants, including an Australian Research Council Discovery grant, to pilot these interventions, known as *QuickSmart*. (We chose the name *QuickSmart* to denote the aim of developing quick and confident skills alongside smart strategy use.) We began the intervention with 24 students in local Armidale, New South Wales, schools in the early 2000s.

When Anne took a consultant's position at a relatively nearby Catholic diocese in 2003, she took the continuing trial of *QuickSmart* with her. In 2005, we had the opportunity to start work in Northern Territory schools, then with National Partnerships funding throughout New South Wales, and gradually across all Australian states and territories. At present, *QuickSmart* Central at UNE calculates that the program has involved over 30,000 students from more than 1,200 schools across the country.

QuickSmart is a Tier 2 intervention in terms of multilevel systems of support. It works with pairs of students who are showing difficulty with basic literacy or numeracy learning, who need extra practice to consolidate their skills and build confidence, or who may have gaps in their understanding for various reasons. Before commencing the program, all students complete a standardized test with Australian norms, the Progressive Achievement Tests (PAT), in mathematics or in vocabulary and comprehension. Test results, alongside teacher judgment, help inform selection for the program.

QuickSmart pairs work through a structured lesson format consisting of six 5-minute components led by an instructor, who ideally would be a teacher, but most often is a teaching assistant. Schools that adopt the program must have a *QuickSmart* coordinator, whose job is to troubleshoot difficulties and support instructors. Participating students participate in three 30-minute *QuickSmart* lessons every week for up to 30 weeks. The basic lessons in the literacy and numeracy programs mirror one another. However, the literacy program also includes two other lesson types: an initial lesson to introduce the focus passage and a culminating comprehension lesson to complete the lesson cycle.

There is a professional learning framework around the *QuickSmart* programs that is particularly important because of the large number of teaching assistants who run QS programs. When we started offering workshops to teachers, teaching assistants, and members of school leadership teams, few opportunities for professional learning were available to teaching assistants, so the professional development of paraprofessionals has been on our agenda for many years. Two-day workshops are offered on three occasions during the first year of a school's involvement with the *QuickSmart* program, followed by other workshops in Year 2 and Year 3, as well as refresher workshops.

Except on the very first occasion, schools are asked to participate in all of the workshops by sharing data about their *QuickSmart* program and their *QuickSmart* kids. In the early stages of establishing the program and its robustness in schools, we also did a followup with students after one year and then five years. Every school involved in *QuickSmart* is considered a research site. Schools are encouraged to share the results of their *QuickSmart* students and comparison students, who are average achievers, with the staff at the SiMERR Research Centre. In return, they receive a report for their cohort alongside the scores of other anonymous schools in their cluster. The report also provides effect sizes for the growth of students using both computer-based assessment system data and the results from the PAT standardized texts administered at pre- and posttest.

A summary of data from the years 2011 to 2016 (see Table 3) shows the kind of results that students have earned through engagement with *QuickSmart* lessons and assessments. We have used the scores of average comparison students as a measure of the kind of gain scores *QuickSmart* students need to attain as a minimum. It is important to remember though that lower-achieving students need accelerated growth to narrow the achievement gap. Our results indicate that these students are recording at least a year's growth for a year's instruction, on average. The literacy graphs, for example, show the movement of students' performance, measured in stanines, to be indicative of the movement of the curve to the right, reflecting improved performance, based on pre- and posttest standardized scores (see Figure 3).

For some students in the *QuickSmart* cohort, we have also been able to obtain NAPLAN data (see Table 4). NAPLAN data refers to the information collected from our nationwide testing of literacy and numeracy achievement for students in Years 3, 5, 7, and 9. As an example, the results from 135 middle school students from an unnamed diocese indicate that *QuickSmart* students' gain score was 67.7 points over two years compared to 45.9 points for comparison students.

Working with so many schools over the years has led to some insights about what supports this particular intervention at the school level. Our current *QuickSmart* literacy leader within SiMERR, Lyn Alder, investigated the characteristics of high-performing schools and found that, not surprisingly, these were the schools that had:

- a stable staff of instructors who had attended the professional learning on offer;
- a dedicated *QuickSmart* room or space;
- a *QuickSmart* coordinator who was an experienced teacher, and often a member of the senior leadership group;
- clear criteria for students included into the *QuickSmart* program; and
- mechanisms for communicating to classroom teachers and parents about what students were doing, how well they were

Table 3
Example QuickSmart *Literacy Summary Results From 2015*

Group	Students with paired data	Average gain score	Significance	Effect size
All *QuickSmart* vocabulary	715	6.931	<0.001	0.690
All comparison vocabulary	201	4.304	<0.001	0.399
All *QuickSmart* comp	1039	6.033	<0.001	0.572
All comparison comp	278	4.200	<0.001	0.377

Note. Summary scale score results on the Progressive Achievement Test – Vocabulary – and Progressive Achievement Test – Comprehension.

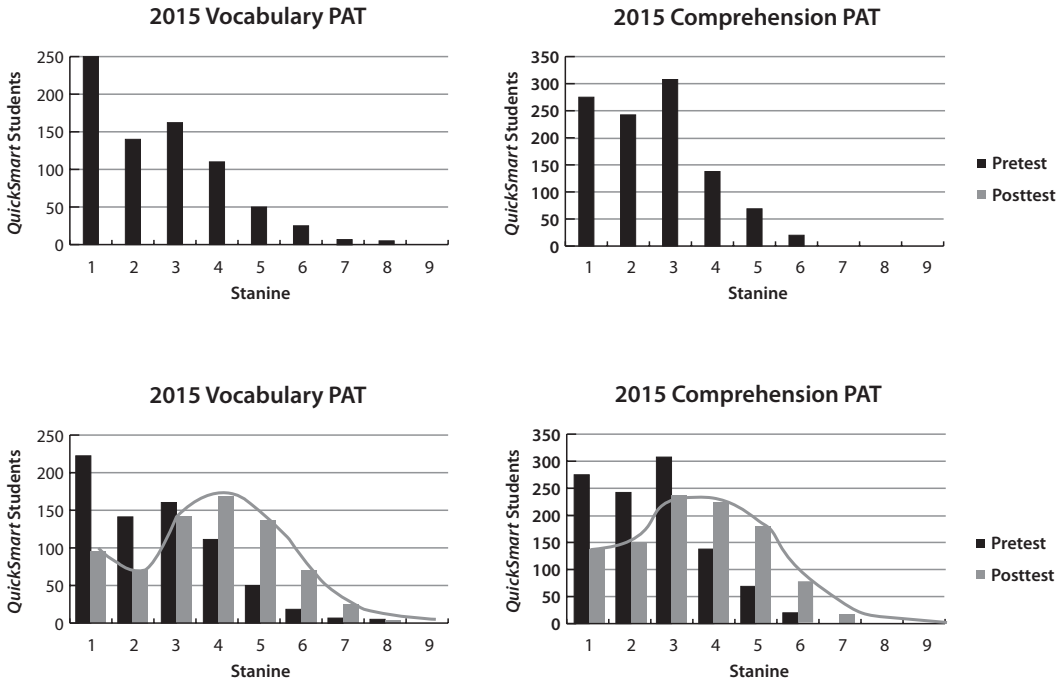

Figure 3. Summary results of *Quicksmart* literacy in 2015.

Table 4
NAPLAN Results From a Sample of QuickSmart *Students*

NAPLAN Scores	N	Pre-QS NAPLAN Score	Pre-QS SD	Post-QS NAPLAN Score	Post-QS SD	Gain	Effect Size
QuickSmart students	135	418.80	66.81	486.50	52.52	67.70	1.13
Comparison students	85	493.90	61.04	539.80	57.55	45.90	0.77

Note. Combined NAPLAN results (scaled scores) for students who completed the *QuickSmart* (QS) program in 2013 and 2014 and their average-achieving comparison peers. The effect size represents improvement over a period of two years.

> doing, and how this improvement stood to contribute to the students' classroom learning lives – the "main game" for the students and their teachers.

One example of the kinds of mechanisms for connecting *QuickSmart* sessions to students' classrooms came from a Queensland school early in 2017. The school arranged a "Showcase Morning Tea" for the teachers whose students participated in the program. It ran over two days to allow all teachers to attend, with the *QuickSmart* students in charge of demonstrating to their teachers what they did in *QuickSmart* lessons, how their results were recorded, and how what they were learning was useful in all classrooms. The principal of this high school also participated in and supported the showcase sessions.

Lastly, with regard to *QuickSmart*, we were successful in receiving a grant from Social Ventures Australia in 2016 to complete a randomized control effectiveness trial for the numeracy program. This is important for securing the evidence base of the program. The trial has begun with schools in a Sydney diocese using a waitlist control design. We have 480 Year 4 and Year 8 students involved from 12 primary schools and 11 secondary schools.

Teacher Education and Professional Learning

In terms of *learning about learning intervention,* this brings me to my current role within the Melbourne Graduate School of Education and the importance of the first quote I cited from Bill Cruickshank:

> In considering certain of the major issues regarding exceptional children in contemporary education, two problems immediately come to the fore. The first of these is concerned with the education of the specialist teacher, the second with the education of general classroom teachers at all levels. (Cruikshank, 1952, pp. 1-2)

I have been a teacher educator since June 1994 when I returned to Australia from Canada. 1994 was also the first year that a special education course became mandatory for all preservice teacher candidates in New South Wales. I have been involved in developing, planning, and teaching such courses ever since.

One of the most noticeable trends throughout my career has been the blurring of special education and general classroom instruction (see Fuchs, Fuchs, & Stecker, 2010). Inclusive education in our schools necessitates that all teachers learn to respond to the needs of their learners through quality instructional practices and collaboration with colleagues and specialists. The students with learning difficulties who make up 20% (some say 30%) of the school-age population have much to gain from (a) teachers who are aware of universal design for learning approaches; (b) schools that adopt multitier systems of support (like response to intervention (RtI)); and (c) assessment that is used to identify students' learning needs, track their progress, and investigate the effectiveness of attempts to address these needs.

With the challenges of inclusive education in mind, my colleagues Jeanette Berman and Anne Bellert and I published *Sustainable Learning* in 2015. *Sustainable Learning: Inclusive Practices for 21st Century Classrooms* unpacks practices that facilitate implementation of teaching that matters and learning that lasts. It also introduces the responsive teaching framework – eight questions that guide inclusive

teacher practice as shown in Figure 4. Bill Cruickshank would have approved, as he was a true believer in clinical experience and the importance of teacher skill. He wrote that, in his opinion, "It is possible to speak definitively from the point of view of theory that has grown out of more than four decades of contact with these children" (Cruickshank, 1982, p. 337).

Since the beginning of 2016 to the end of June 2017, my colleague Jeanette Berman and I have been at Melbourne Graduate School of Education *learning about learning intervention* together. In reorienting our Master of Learning Intervention program for practising teachers, we have had cause to unpack what we mean by learning intervention and how it relates to responsive teaching and the more intense and targeted notion of educational casework (see Figure 5).

To bring these ideas together: Learning intervention is everything that effective teachers do to lead and support the learning of their students in the classroom and the school. Learning intervention is supported by the different layers of intervention that we have conceptualized akin to response to intervention, but with every aspect of students' learning programs – whether implemented individually, in small groups, in the classroom, or elsewhere – linked to classroom learning, aimed towards classroom success and, ultimately, lifelong sustainable learning. In our model of layered learning intervention (Figure 6), the focus remains on the learning needs of students.

In my current role, it is also necessary to focus on the needs of preservice teacher candidates, and our inservice teachers enrolled in the Master of Learning Intervention. The inservice teachers who are working with us are looking to lead and coordinate processes of student support in their schools. Indeed, I believe that it is the coordination of support, the use of evidence to justify programs offered to all students, including students with learning difficulties, and the harmonization of approaches across schools and systems, that is our most salient challenge in the field of learning difficulties at present. As school funding models change, many systems will be looking for creative and coordinated ways to support students beyond the usual deployment of teaching assistants to assist individual students.

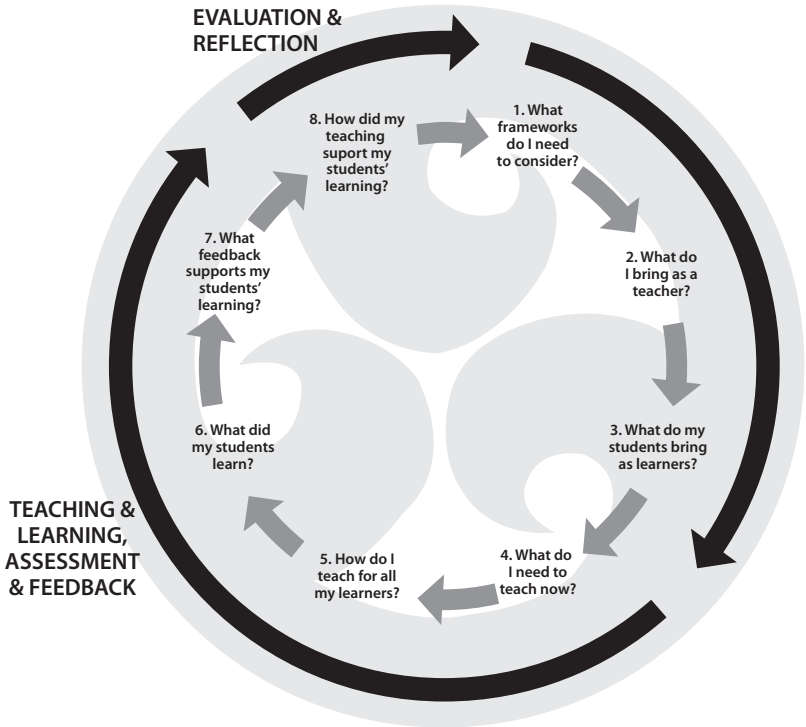

Figure 4. The responsive teaching framework (RTF).
From Graham, L., Berman, J., & Bellert, A. (2015). *Sustainable learning*. Port Melbourne, Vic, Australia: Cambridge University Press. Reprinted with permission.

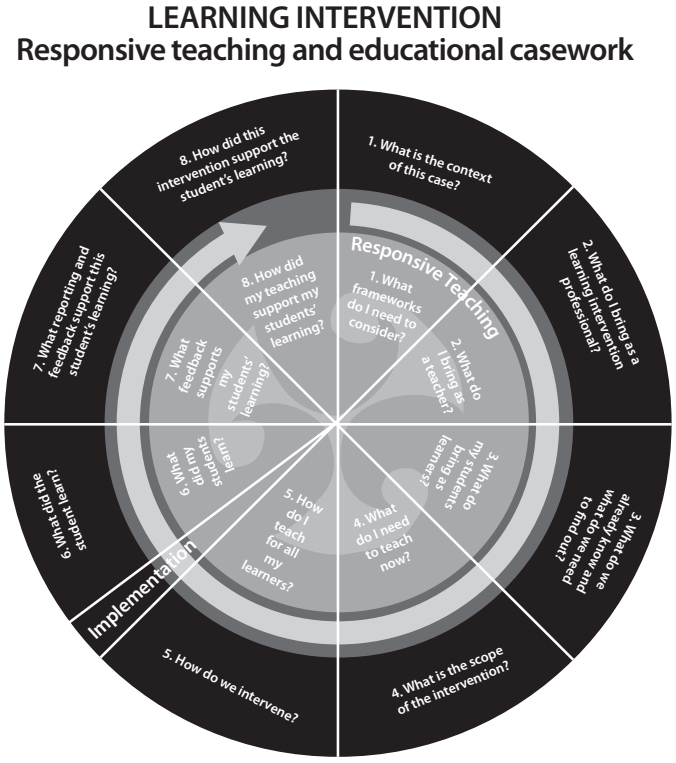

Figure 5. Responsive teaching and educational casework.
From Berman, J., & Graham, L. (2018). *Learning intervention: Educational casework and responsive teaching for sustainable learning in inclusive schools.* Melbourne, Australia: Routledge. Reprinted with permission.

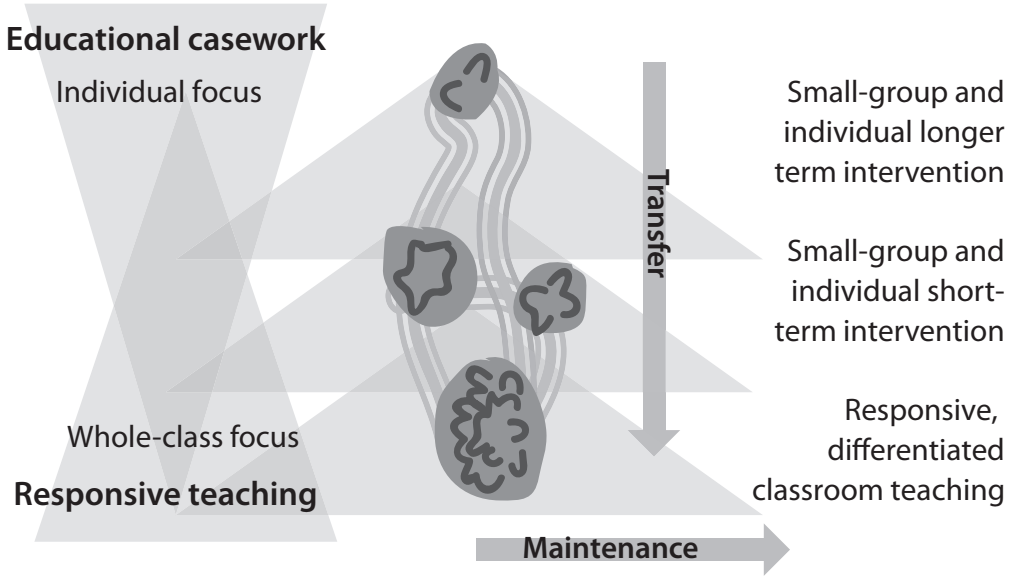

Figure 6. Berman and Graham's (2018) model of layers of learning intervention.
From Berman, J., & Graham, L. (2018). *Learning intervention: Educational casework and responsive teaching for sustainable learning in inclusive schools.* Melbourne, Australia: Routledge. Reprinted with permission.

As past Cruickshank addresses have established (I am thinking here particularly of the lecture delivered by Tom Scruggs on learning disabilities and instructional programming), we know a great deal about what we should be doing for students with learning difficulties. Students who have learning difficulties (and concomitant behaviour difficulties and/or social difficulties) need teachers. They need systematic, explicit teaching, practice to establish automaticity – and intervention. The challenge of the future lies in structuring, implementing, and evaluating this work in schools, and throughout systems, to ensure that evidence-based learning intervention is available as a matter of course to all those who need it.

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