National Partnerships schools across the country are currently working out ways to enhance student outcomes and improve the quality of literacy instruction. In many of our most challenged communities discussions often turn to how to collect, analyse and reflect on student data in ways that will help accelerate student learning.

One of these projects operates in the Logan region of south-east Queensland. Known as Literacy Lessons for Logan Learners (LL4LL), it focuses on literacy innovation in the middle years of schooling, involving students from diverse cultural, linguistic and low socio-economic backgrounds. The project is also building teacher capacity, establishing professional learning communities, and developing a process for school improvement that can inform policies and processes in many Australian schools that serve socially disadvantaged communities.

The project is a partnership between Griffith University, Queensland's Department of Education and Training's South-East Region, and two clusters of schools. It is funded by an Australian Research Council (ARC) Linkage Grant entitled Smart Education Partnerships.

An article in Curriculum Leadership October 2010 described the background to LL4LL, its processes and early outcomes. Participating students were found to have made impressive gains in their scores on NAPLAN and Tests of Reading Comprehension (TORCH) assessments, and there were simultaneous gains in terms of building teacher capacity and establishing professional learning communities.

The current article reports on further lessons learned as teachers and principals develop their capacity to interrogate data and reflect on their current instructional practices. It also suggests ways that schools might use data visualisations to focus collective attention on instructional problem solving at the school level.

Lesson One: Working effectively with data is more complex than it looks on the surface.

Researchers working on schooling improvement around the world, tell us that working with data for improving outcomes is a necessary but challenging and complex component of any school change process. To help schools engage in the change process, this project has specialist staff known as School-based Researchers who are assigned to individual schools. The School-based Researchers have had extensive experience as school teachers, with particular expertise in literacy learning. Now employed by Griffith University, they are active researchers, trained in the use of data to inform teaching and learning. They work collaboratively with teachers and principals, providing each school access to in-depth knowledge about how to collect, analyse and use student achievement data to plan instruction and enhance student literacy outcomes.
As part of their work, they use inquiry tools to promote professional learning and engagement. One of these is data visualisation, which is a graphic representation of data. It is used to develop teachers’ understanding of student test results, and support collective problem solving in response to students’ demonstrated strengths and needs.

In LL4LL schools, two forms of data visualisation are in use. The first is the ‘class-map’. In one-on-one coaching meetings three times a year, the teacher spends an hour talking with a School-based Researcher and the school’s Lead Literacy Teacher/Coach to develop a visual representation of his/her class data. Each student’s performance is mapped on a scale that shows national expectations derived from norming data and diagnostic descriptions of student learning profiles. Students with similar needs are identified and possible grouping options thought through. A major part of this meeting is to discuss current instructional practices and possible innovations on them that will help move students forward. Teachers and the School-based Researcher also discuss any professional learning that the teacher feels is appropriate.

The second tool is the school-wide ‘TORCH wall’. The TORCH wall is a large black felt construction (2m x 3m) that represents a horizontal scale divided into 13 bands, based on students’ reading scores. The score bands make 13 columns on the black felt wall. Each year level in a school has a row on which student identification tiles are placed. Each child’s tile is attached to the wall in the row for their year level, and the LL4LL TORCH score band column that their score allows. National norms for the mean and the range of the distribution are marked and give teachers immediate visual information about how their student scores compare to those of national cohorts. The wall is displayed in a place accessible to teachers, such as a work area or the staffroom.

Three times each year, teachers attend whole-staff meetings where they map their own students onto the large TORCH wall. The resultant scatter plot allows the professional learning community to see the achievement profile of the school as a whole, of each year level overall and of each class. The meeting identifies groups of students who may need additional support, and discusses potential solutions that could meet their needs.

Collective professional reflection around the wall creates the ground for a strong and proactive professional community in each school. The meetings provide time for teachers to share instructional know-how with one another: decades of teaching experiences and professional reflection are made collectively available for everyone.

We have found in some schools that teachers also meet informally around the wall, discussing progress and achievement and sharing teaching and learning ideas with each other. Several principals report that these informal sharing sessions often precipitate whole-school discussions about professional learning needs and resourcing issues.

Feedback is that teachers find these inquiry tools valuable. In project surveys, over 90 per cent of LL4LL teachers rated data mapping processes as very useful or useful. And 87 per cent of LL4LL teachers rated these school-wide collaboration meetings as either very useful or useful in helping them link assessment to instruction.

We feel it important to emphasise, however, that the visualisation tools we use are a means to an end. They are not magic bullets that will improve student outcomes. Rather, they focus attention on the main game of teacher collaboration for developing literacy innovations. There is great interest outside the project in using these tools as a potential solution, but setting up data displays is indeed the simplest part of this work. The more complex work comes in guiding the conversations towards inquiry, hypothesis testing, goal setting, engaging a range of possibilities for student learning, developing instructional innovations and enhancing the collaborative professional learning culture in the school. Our School-based Researchers facilitate these conversations, keeping the focus on problem solving both student and teacher learning.

Success in the process of using data to improve learning requires the presence of skilled coaches with high levels of expertise in both data inquiry and instruction.

**Lesson Two: Be sure that all teachers and students understand that this is about achieving 'Personal Bests' rather than being in competition with others.**
The idea of publicly displaying each student's achievement initially met with some resistance. Teachers were concerned about how struggling students would feel seeing their scores graphically represented on a public data chart. In the wider regional schooling community the idea of the LL4LL wall process was sometimes seen as running the risk of naming and shaming underachievers. There was also suspicion that the wall might be misused as a teacher accountability tool.

In response to teachers' concerns, the initial data displays concealed individual students' identities by using blank (anonymous) tiles. Students' initials were recorded on the back of a tile and that student's score placed on the front.

Having made these initial concessions, however, project staff continued to encourage teachers to see the wall's real purpose: to focus attention on each student's individual performance over time and to discuss critical issues in teaching and learning for each and every child.

As the project progressed through its first year and into its second, teachers at many of the schools began to use the data walls in new ways. In one-on-one meetings with their students, teachers referred to the student's position on the data wall as a starting point from which to set achievement goals with the student. They then encouraged the student to strive for personal bests, improving their skills and scores rather than competing with peers. Students recorded these goals and worked towards them during the next instructional period.

Teachers reported that student attitudes to the TORCH testing shifted to align with their new understanding. While earlier in the project, students had been reluctant to engage in the assessment rounds, they now wanted to be assessed so that they could show how much they had grown and celebrate their progress.

As student attitudes changed, teachers changed their attitudes to the anonymity issue, too. In all schools, we saw a shift to using school photographs as tiles. Within 18 months student faces looked out at us from the assessment walls. Teachers now said that they wanted to be able to look at their school assessment wall and immediately see where each student was and what he or she needed to learn next.

Most inspiring was that teachers began looking at their classes on the wall as an opportunity to develop their own professional goals, and to challenge themselves to meet targets for instructional excellence. As they examined improved student progress and achievement, they also identified their own professional learning needs related to what their students needed to learn and be able to do. They too became committed to personal bests.

**Conclusion**

Results so far are very promising. The LL4LL collective of schools continues to show accelerated progress in reading comprehension achievement levels both on TORCH and on NAPLAN measures. In terms of professional learning outcomes for teachers, 75–99 per cent of teachers agreed or strongly agreed that in the course of engaging in this project they 1) had become more skilled at providing needs-based instruction to students in their classes, 2) were now providing more challenging and engaging work for students, and 3) had increased their understanding of how children think and learn as readers.

We believe that the effective use of data visualisations as tools for collaboration and inquiry has been central to these successes.