

Editorial

Welcome to *set* 2016. Issue 1 paints a picture of students and teachers as capable thinkers, inquirers, and creators. Its backdrop is the times we live in and the futures that may be unfolding. At the centre of this picture are the citizens and professionals who students *and* teachers may want to be and become.

Several of the articles focus on building students' capabilities to use the tools and thinking conventions of different disciplines. One message is that it is important to identify and preserve the essence of a given subject's unique set of capabilities and thinking skills. A concurrent message is that it is equally important to rub different subjects together in creative ways. Doing this gives students a deeper understanding of each subject involved while also enabling more authentic approaches to knowledge consumption and creation. A third message is that we need to strategically shed subject content in order to allow space (and tuition) for students to think more deeply, more metacognitively, more freely, and more purposefully. These three messages apply to primary and secondary schools, but how they might play out in practice can be different for students of different ages.

Across the various year levels the authors of the articles in this issue advocate for more inquiry-based, participatory, and student-directed learning opportunities. However several authors also warn strongly against an anything-goes mentality. The collection encourages teachers to inquire into their practice, making changes on the basis of their discoveries, in combination with a vision of who they hope young people can become. The focus section, introduced below, is dedicated to what inquiry has looked like for the teachers and educators represented in this collection.

The first two articles explore computational thinking. For the first article I interviewed Tim Bell. I wanted to get my head around what computational thinking really is, how it relates to digital literacy, and where its value lies in relation to everything else on the learning agenda. If these are also questions for you, the answers should be illuminating. Next, Garry Falloon and team translate some of this big-picture thinking into practice. Their research on teaching coding in junior primary

makes a case that learning to code can cultivate students' mathematical and higher order thinking skills.

Student capabilities are teased out in relation to subject science in the next two articles. Dayle Anderson and Delia Baskerville offer a companion piece to their previous *set* article on an integrated drama–science inquiry process (Baskerville & Anderson, 2015). This sequel demonstrates how their inquiry process supported primary students to develop aspects of the following science capabilities: Gather and interpret data; Use evidence to support ideas; Critique evidence; Interpret and use scientific representations; and Engage with science. Sabina Cleary and Judith Bennetts also discuss the idea of science capabilities, noting that these ideas were “developed to help nurture in students the types of thinking, questioning and actions they need to be informed citizens in a changing world” (p. 25). A key point is that capabilities are about dispositions to use new knowledge and skills.

As I worked with these articles I realised that I had come to think about capability building in terms of being attentive to convention and creativity *at the same time*. Becoming conscious of, and competent in using, the tools of the trade (be they physical instruments or particular ways of thinking) is a necessary foundation that allows students to mix and match between learning areas to enrich their understanding and, ideally, generate something new.

Cleary and Bennett's article provides insight into how secondary school teachers have come to think about the science capabilities and alter their teaching in response. These insights were recorded as part of the authors' inquiry designed to strengthen their own practice as secondary curriculum and learning facilitators. As such, their work sits within our focus section on inquiry and helps to convey *set's* touchstone that research and inquiry supports effective practice at all levels of our education system, including teaching, leadership, and advisory work.

Two articles on teacher-led inquiries feature in the focus section. Deputy Principal Gail Colby and Mary Hill acquaint us with a primary school that embedded

inquiry “as an everyday practice” (p. 31) over 4 years. All teachers (individually or collaboratively) undertook annual impact research projects in areas of personal strength. The aim was to deepen their pedagogical understanding and move towards innovation in a research-informed manner. The outcome of this appreciative inquiry approach was a more reflective and responsive group of teachers, along with improved student achievement. These experiences have implications for schools engaging with the Teacher Learning Research Initiative (TLRI) and Teacher Led Innovation Fund (TLIF).

Teacher Martyn Davison and his co-authors next introduce us to their secondary school where all the teachers undertake inquiries within faculty based professional learning groups. Their article demonstrates how a teaching as inquiry approach can situate student voice at its centre. They present two inquiry case studies where teachers began with an area of personal challenge or concern and sought student input to help them to evaluate their creative teaching solutions. As a result the teachers gained new insight into their practice and built stronger relationships with students. These experiences gave them a greater appreciation for what students can offer to teaching. The school sees further room to involve students as co-creators in teaching inquiries. They are also learning to be more discerning about which students’ voices are tapped and how.

It is evident that the primary and the secondary school featured in this focus section have carefully set up internal structures and systems to support teacher-led inquiries and spread results school-wide. The research and inquiry culture at both schools is upheld by an informed leadership team and access to external expertise.

In He Whakaaro Anō, Deputy Principal Claire Amos shares what is effectively her long-range inquiry into future-focused teaching and learning. Blue Sky High is an imaginary secondary school that melds research literature with elements of what Claire and her colleagues have trialled and tested over the recent past. She presents five specific suggestions for transforming teaching and learning: one-to-one devices with an open internet; students spending more time doing less; connected interdisciplinary learning; large-scale, long-term project learning; and home rooms with real academic coaching. Claire’s strong rationale and creative voice transition smoothly into Deborah Fraser’s spirited, clear and convincing arguments about what we might learn for teaching today from reading a new book by Margaret MacDonald titled *Elwyn Richardson and the Early World of Creative Education in New Zealand* (2016). Elwyn was a teacher future-builder of his time and, as Deborah shows, can continue to inspire the future-builders of

today. In fact there are some uncanny parallels between Blue Sky High and Oruaiti School in rural Northland in the 1950s. There Elwyn was committed to cross-curricular student-led inquiry and project-based learning that harnessed the essential qualities of the arts, sciences, and other disciplines. Students’ deep learning, mastery, and creativity were of utmost importance to Elwyn. His pedagogy, Deborah says, should remind us that: “For educators to claim new furniture and devices creates a quality learning environment misses the point. It is the quality of the teaching that takes place in any space that is the litmus test for whether an environment is conducive to learning or not” (p. 54).

We end with Assessment News. Teacher-turned-resource developer Teresa Maguire takes us on a tour of Assessment Resource Banks (ARBs), showing how individual teachers can curate their own assessment collections free of charge. Teresa’s practical guide builds on earlier *set* coverage of the research-informed thinking that has underpinned the ARBs development process over time. Two important principles have been for the ARBs to embody Assessment for Learning and to enable students to participate in assessment tasks reflectively and collaboratively. Teresa introduces readers to several new interactive online resources in English, mathematics and science that have been designed in response to a capability-focused challenge that the resource developers initially set out to address:

If we want our students to be actively involved citizens both now and in the future, the interest is on students’ thinking processes, being able to use their understandings, and working with others to share their ideas and build new knowledge. This is a challenge for assessment because these kinds of capabilities are not necessarily associated with right or wrong answers (Joyce and Fisher, 2014, p. 52).

The demands on teachers to hold capability, convention and creativity together are huge. Huge *and* exciting. I hope that you gain inspiration and traction from reading the articles in this collection.

Josie Roberts
Editor

References

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