Linking Research to the Practice of Education

une University of New England

Linking Research to the Practice of Education is a publication of the School of Education (SoE), UNE, for all educators: early childhood, primary and secondary. It introduces research, conducted by SoE staff, applicable to educational settings.

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Editorial

In our second bumper edition for 2024, we start with an article by Dr Sally Larsen about the Government and media reporting on NAPLAN results. In the second article, Trish Donald explores the benefits of visual arts learning and practical ways to teach illustration. In our third article, Associate Professor Marianne Knaus guides us through the way early childhood philosophy is being used in primary schools. Our fourth article explores crisis leadership in schools during natural disasters and climate emergencies by Professor Jennifer Charteris, Dr Adele Nye and Stafford Cameron. In the fifth article, our Higher Degree Research graduate, Amanda Roberts, and her supervisors, Dr Zuocheng Zhang and Dr Frances Quinn, discuss ways to improve Asia engagement in Australian schools. In the sixth article, Associate Professor Eveline Chan lays out tried and tested ways to improve literacy and numeracy in the middle years of school. The seventh article, by Dr Rose Mutuota, explores cultural influences and ways to develop culturally responsive teaching. In the eighth article, Hannah Collett interviews one of our education scholarship recipients describing how the scholarship has helped her studies. In the ninth article, Marty Levins discusses the topical challenges of digital technology in schools. The last article explores the research-based resources for STEM teachers developed by Associate Professor Brendan Jacobs and Solina Quinton.

Lead Editor

Dr Marg Rogers
soenewsletter@une.edu.au

Assistant Editors

Dr Leonardo Veliz
Dr Cat Volpe Johnston

Newsletter available at: https://bit.ly/SoEresearchnews

School of Education
University of New England
Armidale, NSW, 2351, Australia
education@une.edu.au

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une University of New England | School of Education

Are the latest NAPLAN results really an 'epic fail'?

Sally Larsen | slarsen3@une.edu.au | Leadership, Pedagogy, Diversity and Inclusion, (UNE)

On Wednesday, Australia woke up to a barrage of reports about the latest NAPLAN results. Media coverage described an "epic fail", "plummeting" performances and a "bleak picture".

Education experts spoke of "grim reading", and Prime Minister Anthony Albanese called the results "alarming".

But many of these analyses are misguided and unhelpful.

What were the results?

NAPLAN tests Year 3, 5, 7 and 9 students each year in literacy and numeracy. There are four possible achievement bands: "needs additional support," "developing," "strong" and "exceeding".

In 2024 about one in three school students were into the bottom two proficiency bands, with the remaining two thirds were in the top two. About one in ten students were rated as needing additional support.

These are very similar to last year's results. The number of students identified as needing additional support also mirrors the proportions of students falling into the bottom band in the previous NAPLAN reporting system used from 2008 to 2022. Around 10% of students (or fewer) were categorised as below the national minimum standard in every NAPLAN test year to 2022.

If we look at average results, some 2024 results in some year groups are slightly above those reported in 2023, and others are slightly below. As the national report notes, differences from 2023 are "either not statistically significant or negligible in size".

None of the differences were more than four points (on a 1,000-point scale), with the exception of Year 7 and Year 9 writing which both improved in 2024 (by 6.5 and 7.3 scale scores respectively).

> These results reflect normal population variability and are what you would expect if you administered the same test to different groups of children from year to year, as NAPLAN does.

There's no long-term decline

As I have written previously, we need to be cautious about narratives that Australian students' performances in NAPLAN and other standardised tests are getting worse.

My study published earlier this year clearly shows no long-term decline in NAPLAN results from 2008 through to 2022. It even shows some considerable gains. In particular, Year 3 and Year 5 reading showed good progress at the population level over the 14 years of NAPLAN to 2022.

In 2023, some of the processes around NAPLAN changed. This included reporting results in four

proficiency levels within each year, rather than the ten bands used from 2008 to 2022.

Because there are fewer categories in the new reporting of proficiency, there are now higher percentages of students in each category. As is clearly evident from the news reporting, categorising students into fewer proficiency levels can be misinterpreted.

What does this mean?

Do the 2024 results mean Australian students' literacy and numeracy proficiency have precipitously declined in since 2022?

The answer is no – it means the test developers changed the way students are categorised. Importantly, in 2024 the proportions of students falling into the four proficiency levels for each test was no different from those reported for 2023.

There are, of course, enduring differences between different groups of the Australian population, for example students from Indigenous backgrounds and remote areas are much more likely to be in the lower categories on NAPLAN. These, unfortunately, are not new problems.

Fixation on NAPLAN, with the relentless annual reports of crises and catastrophes in our schools, and accompanying criticisms about teacher quality, is not healthy or helpful for our schools.

Of course, improvements can be made to students' literacy and numeracy achievement and progression. However, this is unlikely to happen in a school system that is inequitably funded and struggling to retain experienced professionals.

If state and federal governments are serious about resolving the problems in Australian schooling, a first step will be to accurately interpret the evidence about students' literacy and numeracy.

This article has been reprinted from The Conversation. You can read the original article here.

Figure 1: Working with pre-service teachers to create characters

Breaking down the traditional ways of teaching in Bhutan

Trish Donald | tdonald@une.edu.au | Learning Media Producer (UNE)

I had the recent pleasure of immersing myself in the unique cultural and educational landscape of Bhutan for a month as part of the *Artist in Residence Education Program* at the Paro College of Education, Royal University of Bhutan. I was paired with a collaborating teacher from the Faculty of English.

This proved a perfect match as my creative, project-based learning activities became a mini capstone course complementing her theory-based content. I taught one hundred students who were about to finish their Bachelor of Education (Primary) along with a small class of Master of Education Students.

The artist in residence education program

The residency is new to Bhutan and was set up by Associate Professor Margaret Brooks, (former UNE staff member). It was developed so artists and arts educators could "develop their own work, creative skills and facilitate the exchange of ideas, practices and knowledge" and provide opportunities for "meaningful approaches to education" as Margaret communicated during her mentoring of this project. The program requires artists and teachers to link their teaching to one of the 13 traditional arts of Bhutan along with the university curriculum.

In this article, I share four two-hour lessons I used with the pre-service teachers.

Teaching activities

Purpose

Teaching delivery in Bhutan is very traditional, with teacher focused learning, such as rote learning, so I wanted to model a more creative and engaging project-based way of learning.

The activities were designed for school students of all ages; however, these Bachelor students, by experiencing them, were learning how they could apply these activities in their own classrooms. Activities focused on:

- Exploring creative practices;
- Building understanding around visual literacy and other types of literacy;
- Identify elements of storytelling, narrative devices and genre;
- Exploring strategies to strengthen vocabulary, writing skills, expression, imagination, comprehension, and identifying emotion;
- Experiencing the power of play and experimentation in learning to develop a love of learning;
- Developing essential skills in oral communication, working with others, and critical thinking; and
- Empowering students to find their own voice and grow self-confidence.

Resources

Resources were minimal: paper, pens, scissors, cardboard and string.

Setting

The lessons were delivered in a standard classroom with wooden furniture and a whiteboard.

Lesson 1: Understanding picture book illustrating and creating characters

As an introduction, I read one of my picture books to the class, then showed students some of the original working drawings, talking through the decisions I made, and the techniques I used. We discussed the portrayal of characters, and elements such as contrast, colour, textures and layout. This opened their eyes to the process of illustrating and helped them understand how visual literacy helps to support the text.

Figure 2: Students share and discuss their creations

Students then created their own characters through a collaborative process, with paper folded into thirds passed around so different students drew the head, body and legs to reveal a unique and quirky creature. These were spread out on the ground and discussed with a lot of laughing and chatter taking place as we discussed the variety of characters and their features, teasing out how they might talk and move. The students could not wait to make more.

The final part of the activity was to choose a drawing and adapt it to create their own character, developing its personality, hobbies, likes and dislikes, friends, family, pets and environment. In other words, they invented a world.

Figure 3: A collaborative drawing is adapted to develop a character and story

Lesson 2: Exploring genre and story development

We discussed as a class motifs and archetypes associated with each genre and why these distinctions were important. Then, through their characters, students worked their way through each genre, exploring how their story shifted depending on that genre. The same attention was brought to different types of audiences, with discussion around appropriate themes and language used for different age groups. Students then chose one genre and their target audience to develop a short story. The lesson concluded with the sharing of their stories and ideas; the variety was delightful.

Lesson 3: Mask making and performance

Students made masks of their characters, and in pairs explored ways to bring them to life through voice and movement to tell their story.

Figure 4: Students, proud of their masks that brought their characters to life

Lesson 4: Expanding stories and learning through games

The final lesson focused on how students could turn their stories into different games, such as board games, puzzles, maps, and word games. We explored how games could help tease out an understanding of the story's themes and also find ways of linking back to vocabulary building and other literary devices needed to develop writing and reading skills.

The response

Overwhelmingly, the students loved these activities. In fact, they loved them so much they requested extra lessons. What was rewarding about this experience was seeing the shift in how students not only saw themselves but also who they could be as teachers in their own classrooms. For the first time, many of the students realised they could be creative and also imaginative in a way that supported valid ways of teaching and learning.

Figure 1: Play based construction

Why all the fuss about preschools?

Marianne Knaus | mknaus2@une.edu.au | Early Childhood Education (UNE)

The Productivity Commission's Final Report has reinforced the call for free preschool services. This article explains how various Australian state and territory governments have proposed to transform early education and some states are taking this opportunity to use early childhood philosophies and practices in their primary schools

What is preschool?

Preschools are coordinated play-based learning programs delivered by a qualified teacher. They are non-compulsory and designed for children in the year (or two years) before they start formal schooling. Preschools can be delivered in a long day care centre or in a stand-alone capacity.

Falling enrolments

Of serious concern for Governments and schools is the drop in enrolments of children attending preschool services. According to the Australian Institute of Health and Welfare (AIHW), in 2017, around three in five children aged 0-4 attended preschool programs. Enrolments in preschool programs, however, are declining. The Australian Bureau of Statistics (ABS) details 4,575 fewer children were enrolled in programs in 2022 compared to 2021.

There are many complex reasons why there is a decline:

- Firstly, all of regional, rural and remote Australia and almost all lower socio-economic metro suburbs are part of a 'childcare desert'. This means that three or (many) more families are competing for one space in a service;
- Secondly, finding enough educators was difficult before the pandemic, but by 2021, staff vacancies had doubled during the pandemic. This meant some services closed or reduced their services;
- Thirdly, some services are not economically viable in small communities struggling with young families moving to larger towns and cities;
- Fourthly, many parents struggle to afford the fees for their children's early learning.

All of these reasons mean many families, especially those in 'childcare deserts' are 'choiceless', according to parent advocacy group *The Parenthood*. During a cost-of-living crisis, this impacts family income.

Affordability of early education

Preschool services are unaffordable for many Australian families due to the current systems in place. Information from the ABS state only one in four children were accessing free services. Economist Angela Jackson reported that a proposed universal childcare system would be an 'absolute gamechanger' for low-income Australian families. This is especially the case if means testing on family incomes is abolished. For many women, it is not beneficial for them to work as they lose the childcare subsidy depending on their family income. Investing in children in the early years before school sets them up for the future.

Benefits of early education

There is a plethora of evidence that quality preschool programs provide children with improved learning and developmental outcomes. The Effective Preschool, Primary and Secondary Education (EPPSE) study revealed the significance of attendance at preschool to enhance children's emotional, physical, social and intellectual capabilities and help address the effects of disadvantage toward sound learning trajectories. Recognising this, the Australian Education Research Organisation's (AERO) professional development

videos demonstrate ways to support young children's learning trajectories in key domains. Neuroscience has shown the early years, particularly birth to eight years, are critical for optimal learning and development. Additionally, the Longitudinal Study of Australia found a significant positive association between attendance at preschool programs and Year 3 NAPLAN results.

Figure 2: Play based creative mathematics

Different state responses

Starting from this year, the Victorian Government is investing $14 Billion to include free kindergarten for five hours per week for 3- and 4-year-old children across Victoria. This will increase to 15 hours per week by 2029.

Also in 2024, Queensland introduced free kindy for 4-year-olds for 15 hours per week. The ACT, as part of its quality early childhood education for 3-year-olds initiative, are investing 300 hours free preschool per year with the 3-year-old preschool program.

In 2022, NSW continued the Start Strong Free Preschool Program of free preschool for 600 hours in the two years before school. Funding is provided to community and mobile preschools for eligible children aged three years and above. This is approximately 15 hours or two days per week in the majority of preschool settings.

In WA, the Preschool Reform Agreement will provide up to $190 million of funding in WA from 2022 to 2025 to provide 15 hours per week preschool in kindergartens in WA schools.

In WA, preschool is under the care of the Education Department and is referred to as kindergarten, a non-compulsory year of school. Kindergartens are located on a primary school site and administered by the school's principal. WA is unique in that from 1999, all children turning four were eligible to attend free Government school kindergarten programs of two half-day sessions per week (School Education Bill, 1997). This has since been increased to 2.5 days a week.

N.B. Figures 1 and 2 are the author's own and are used with parental and publisher consent.

Extending ECEC philosophies and practices into primary school

Furthermore, in 2013, the then Minister for Education in Western Australia informed primary school principals that the *'Belonging, Being & Becoming:* Early Years Learning Framework (EYLF) would be relevant to school-based early childhood programs and practice. This provided for the extension of the EYLF pedagogical practices, including play-based learning to Year 2 (children aged 6-7 years) (Department of Education, 2015).

This new mandate signified the overlapping of the EYLF and the Australian Curriculum requirements in the early years of schooling (Australian Curriculum, Assessment and Reporting Authority, 2012). WA recognises the continuity of the NQS and EYLF from the Early Years to the School Sector which is significant to an effective transition from preschool to school.

Figure 3 demonstrates the connection to the EYLF Learning Outcomes for the before school sector and the overlapping WA Curriculum and Assessment Outline for Foundation (PP) and above. However, the Principles and Practices of the EYLF apply from Birth to Year 2 of school.

Figure 3: Integrated model of philosophy and practice (Source: WA School Curriculum and Standards Authority)

In 2023, new Kindergarten Curriculum Guidelines were developed for WA in sync with the revised EYLF. As a result, a set of resources has been developed by the School Curriculum and Standards Authority to support teachers and educators about the Vision, Principles and Practices of the EYLF and the Learning Outcomes from the Kindergarten Curriculum Guidelines. The set of resources can be accessed on this link.

It will be interesting to see whether other States and Territories will follow WA's lead by intersecting preschool pedagogical practices and play-based learning within the early years of school. The inclusion of the principles and practices of the EYLF in primary schools will provide children with continuity of learning in the transition to school.

Leading for empowerment and empathy during crisis events

Jennifer Charteris | jcharte5@une.edu.au | Leadership, Pedagogy, Diversity and Inclusion (UNE)

Adele Nye | anye@une.edu.au | Leadership, Pedagogy, Diversity and Inclusion (UNE)

Stafford Cameron | scamer21@une.edu.au | Leadership, Pedagogy, Diversity and Inclusion (UNE)

Due to the increasing frequency and intensity of natural, climatic, and other emergencies, more schools are experiencing educational crises. An educational crisis, (in this context), is any traumatic event that impacts on educational process and disrupts the operation of schools (Mutch, 2015a). The findings of our research with leaders in Australia and Aotearoa, New Zealand, who have experienced crisis events -floods, fires, and bereavements are summarised in this article. We also illustrate crisis leadership and make recommendations for leading practice in this article.

We interviewed principals and did a scoping review of articles to explore the practices of primary and secondary school leaders.

Four themes were identified:

1. demonstrating agility and flexibility;
2. mobilising others;
3. being visible and connected; and
4. adapting systems.

These encompass a suite of practices that are illustrated in figures one to four. These have been generated primarily from these authors with the themes reinforced by other articles: Alanezi (2021), Arar et al. (2021), Bishop et al. (2015), Brion (2021), Grissom & Condon, (2021), Lien et al. (2023), McLeod and Dulsky (2021), Mutch (2015a, 2015b), Neelakantan et al., (2022).

Demonstrating agility and flexibility

In handling traumatic incidents within schools, effective leaders promptly adapt plans, roles and strategies (see Figure 1). They anticipate and adapt to evolving conditions.

Figure 1. Adaptive and flexible leading practices

Mobilising others

To mitigate the impacts of the crisis on the school, there is a need to rapidly deploy resources and personnel (see Figure 2). Leaders need strong collaborative networks to mobilise action among various stakeholders, including teachers, parents, and external organisations (e.g., fire crew, ambulance staff, police, Departments of Education, Insurance companies).

Figure 2. Practices that mobilise others

Being visible and fostering connections

Crisis leadership requires emotional intelligence. Leaders need to responsively and effectively communicate messages which are confident, optimistic and foster resilience in the face of adversity (Mutch, 2015a). Being accessible and visible to the community is vital, as it helps build trust and ensure smooth operations (see Figure 3).

Figure 3. Being visible and fostering connections

Leading through systems

Traumatic events are characterised by high levels of uncertainty, risk, and a sense of urgency. It follows that systems and procedures are important at this time (see Figure 4).

Figure 4. Using and developing systems

Crisis leadership requires considerable presence of mind and empathy. Principals, Malcolm and Roslyn (pseudonyms), demonstrated agility, flexibility, and a profound connection with people which enabled them to navigate trauma.

Roslyn, a newly appointed rural principal, faced the devastation of her school due to a series of flood events. She had to locate premises and distribute the school across multiple temporary locations, then relocate to a local church, which was also subsequently flooded. Roslyn's leadership extended beyond logistical arrangements. She was deeply committed to the emotional well-being of staff who were repeatedly traumatised by the flooding. She fostered a sense of shared responsibility and empowerment among her team. Roslyn said:

> The flooding affected so many people in so many different ways. These teachers just kept on coming. I tried to monitor that well-being and shared with them everything I could, so they were never in the dark. I would be really honest and say, 'This is what I'm thinking, what have you got?' None of this was ever 'done to' them -we were victims, but we had to be victims who had some control somehow. I reminded them that we had choices about how we got through this.

Roslyn also modelled self-care and vulnerability, demonstrating to teachers the importance of acknowledging their limits.

> Good leadership is to be vulnerable as well as to be strong. There is strength in vulnerability. It gives [teachers] permission as well. If I don't go home when I'm falling apart, how do I expect them to [go home] when they need to go and take care of themselves?

Malcom, a principal for 40 years, led his school community through an event where six students and a teacher lost their lives in an outdoor education tragedy. Agile and adaptable, he mobilised staff and a bus to travel in the night to retrieve stranded students, planned a trauma response with his leadership team, and planned communication for parents and the media. Providing reassurance during a period of intense grief, Malcom was visible and in tune with the emotions of the community. He fronted the media on the day after, processed grief with students at a whole school assembly, and with parents and teachers in the days and weeks after. Acknowledging the enduring impact of the tragedy, he ensured it was embedded into the school's collective memory.

> I needed a system, structure, ways of responding, policies, my understanding of community and whatever. But those things only take you so far. If you rely on that, I think it will shut you down. You then have to say – 'well, that's my launch pad to be the most authentic understanding, empathetic person I can be in situation which I know nothing about'. A system will only get you so far, and you need that. But at the end of the day, it's the people factor that will get us through, no matter what.

Crisis leadership involves leaders responding dynamically to changing conditions, managing the immediate impacts on the school community and the external perceptions shaped by media coverage. These cases highlight the crucial importance of being a visible and empathetic leader. Leaders like Malcolm and Roslyn highlight that the true essence of leadership lies in a profound ability to connect with people and guide them through the darkest of times with empathy and integrity.

If you would like to discuss crisis leadership with us, please contact: Jennifer Charteris, jcharte5@une.edu.au

Enhancing Asia engagement in Australian schools

Amanda Roberts | Master of Education graduate, University of New England
Zuocheng Zhang | zzhang26@une.edu.au | Curriculum, University of New England
Frances Quinn | fquinn@une.edu.au | STEM Education, University of New England

In a world where cultures continuously interact (and sometimes clash), it is essential for students to embrace diverse perspectives to thrive in our rapidly evolving society. Following the release of the Australian Curriculum in 2010 (ACARA, 2010), schools initially excelled in the implementation of Asia engagement programs that promoted intercultural understanding (Curry, 2021). However, these programs have since become less prevalent and less integrated into the curriculum and school culture (Henderson, 2021). The remaining programs often fall short in terms of students' global preparedness (Hassim, 2013; Salter, 2015). However, some schools have succeeded in their Asia engagement efforts because their programs allow teachers to make decisions and take action within their existing school systems. This involves teachers aligning their goals with those of the school system (Roberts, 2024). Understanding how this balance between teacher and system can influence Asia engagement programs and provide valuable insight for other teachers and schools wanting to improve their Asia engagement practices.

The influence of structural factors

Structure is a key factor in any human activities (Archer, 2007). In education settings, structural factors include the policies, resources and organisational aspects of schools that impact how Asia engagement programs are delivered.

For instance:

1. *Curriculum Requirements:* The national curriculum outlines what students should learn. While there is room for flexibility, teachers often feel overwhelmed by curriculum requirements and the limited time available to meet them;
2. *Professional Development:* The curriculum also does not necessarily offer guidance on integrating effective Asia-related content, and therefore, teachers may struggle to incorporate these important topics into their lessons. Ongoing training and development are crucial for teachers to stay updated on best practices and resources. Without it, teachers may lack the understanding, resources, and strategies needed to implement these programs effectively;
3. *Resource Availability:* Engaging Asia-focused resources—such as books, multimedia materials and cultural artefacts—can enhance students' learning experiences. However, schools with limited budgets or resources may find it difficult to provide these materials, which may impact the quality of Asia engagement programs;
4. *Support Structures:* Schools need supportive leadership and clear policies to foster the effective implementation of Asia engagement programs. If school leaders do not prioritise these programs or fail to provide adequate support, staff may feel undervalued and under resourced and therefore less motivated to integrate Asia-related content into their teaching.

Understanding staff agency

In Archer's (2007) realist social theory, agency means understanding your own thoughts, values, goals and ideas and acting on these within your system or situation. Staff play a vital role in integrating Asia perspectives and understanding into their classrooms, whether through dedicated programs like High School Preparation (HSP) or Languages Other Than English (LOTE) or by incorporating Asia-focused content into their regular curriculum. This requires agency in terms of being able to make decisions and take action by working within the existing school systems and structures and negotiating their own goals and values with those structures.

Balancing staff agency and structural factors

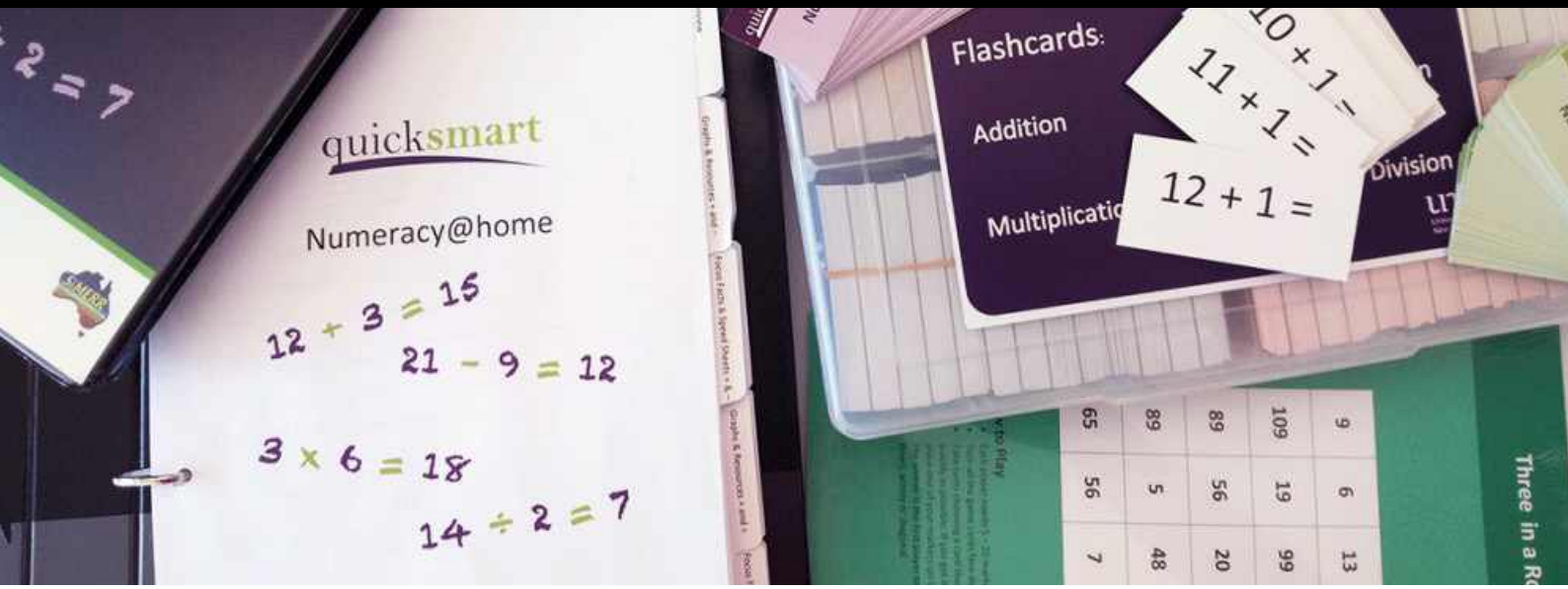
The interplay between structure and agency significantly influences the outcomes of Asia engagement programs. To make these programs more effective, it is important to strike a balance between empowering staff agency and addressing structural factors. Several Australian schools have successfully integrated Asia engagement programs that have stood the test of time by effectively balancing staff agency and structural factors (Roberts, 2024). Their success is characterised by four practices:

1. *Enhancing Flexibility:* Allowing teachers more flexibility in how they meet curriculum requirements means giving teachers the freedom to include Asia-focused content in ways that resonate with their students and fit their teaching style;
2. *Investing in Professional Development:* Providing teachers with relevant training and resources is crucial. Professional development is in place to help teachers feel confident and informed about incorporating Asia engagement into their lessons to align with curriculum goals;
3. *Strengthening Support Structures:* Leaders advocate for and support Asia engagement programs by setting clear policies that prioritise teachers' strengths, interests and initiatives. This also includes providing time for teachers to plan and collaborate and recognising the efforts of staff who contribute to these programs;
4. *Fostering genuine cultural interactions to achieve meaningful outcomes:* Genuine cultural interactions are achieved through immersive experiences that promote deep and mutual understanding. These experiences focus on building strong intercultural skills and a better appreciation of different global viewpoints.

Moving forward

The success of Asia engagement programs in Australian schools largely depends on how well staff agency is supported and how structural factors are managed. For example, schools that offered strong leadership, flexible curriculum guidelines and targeted professional development have seen greater staff enthusiasm and success in their Asia-focused teaching. Moving forward, it is essential for schools to continuously evaluate and adjust their approaches to Asia engagement.

By supporting teachers, investing in resources and creating a positive environment to implement programs, schools can enhance their students' understanding of Asia and better prepare them for the global stage.



Twenty-four years of QuickSmart Literacy making a difference

Eveline Chan | echan4@une.edu.au | Literacy (Research) SiMERR National Research Centre, (UNE)

With almost a third of Australian students in the middle years needing support to meet minimum standards in literacy (ACARA, 2024), what kind of intervention can make a difference?

This year (2024), marks the 20th anniversary of the SiMERR National Centre at the University of New England, Armidale, and 24 years since Professors John Pegg and Lorraine Graham gained Commonwealth Government funding to develop the *QuickSmart* intervention programs for students with persistent difficulties in numeracy and literacy. Since 2001, *QuickSmart* has been implemented in 1,650 schools across Australia. Over 72,000 students have demonstrated substantial learning gains as a result of the programs.

QuickSmart targets students in Years 4 to 9 whose basic skills in Literacy and Numeracy are below the national minimum standard. In this brief article, I focus on the literacy program, and how it offers struggling readers a second chance to become active and confident learners in the classroom.

Figure 1: Literacy games to consolidate learning

An evidence-based, small group intervention

QuickSmart Literacy is a small group intervention program (Tier 2) designed to:

- improve students' speed and accuracy in decoding words, build their vocabulary, support them to read fluently and read learning area texts;
- help students to actively engage and participate in class and build a sound foundation for further classroom instruction; and
- enable students to perform at levels comparable with their average-achieving peers on state-wide or standardised tests.

The program aims to improve students' automatic processing of basic information to free up the working memory for more complex tasks such as comprehension and reading to learn.

QuickSmart applies insights from educational research and neuroscience (Dehaene, 2020) on how students learn. Lessons are structured around short segments with clear goals to enable success in small steps. Students typically work in pairs with an instructor who has completed six days of *QuickSmart* training. Lessons activities include: word study, timed flashcard exercises, repeated reading of text, explicit teaching of comprehension and word games to consolidate learning. Feedback is built into every lesson cycle. The activities provide regular practice so that learners can:

1. recognise words and their meanings quickly and accurately;
2. develop fluency in reading stage-appropriate texts; and
3. apply strategies for comprehending text (Fisher et al., 2016).

Results and impact

After completing 30 weeks of instruction for 30 minutes, 3 times per week, *QuickSmart* Literacy students improve substantially in their in word recognition, vocabulary knowledge, and comprehension. We compare students' results before and after the intervention using the internal *QuickSmart* assessment tools. We also compare their results on external standardised tests such as the Progressive Achievement Tests in Reading (PAT-R) developed by the Australian Council of Educational Research (ACER). Results on the PAT-R Vocabulary and Comprehension tests show students achieve learning gains equivalent to 2-3 years of schooling within one year[1]. They also display an increase in self-confidence and positive learning behaviours. Such results have been demonstrated consistently in the data collected from 2011-2021.

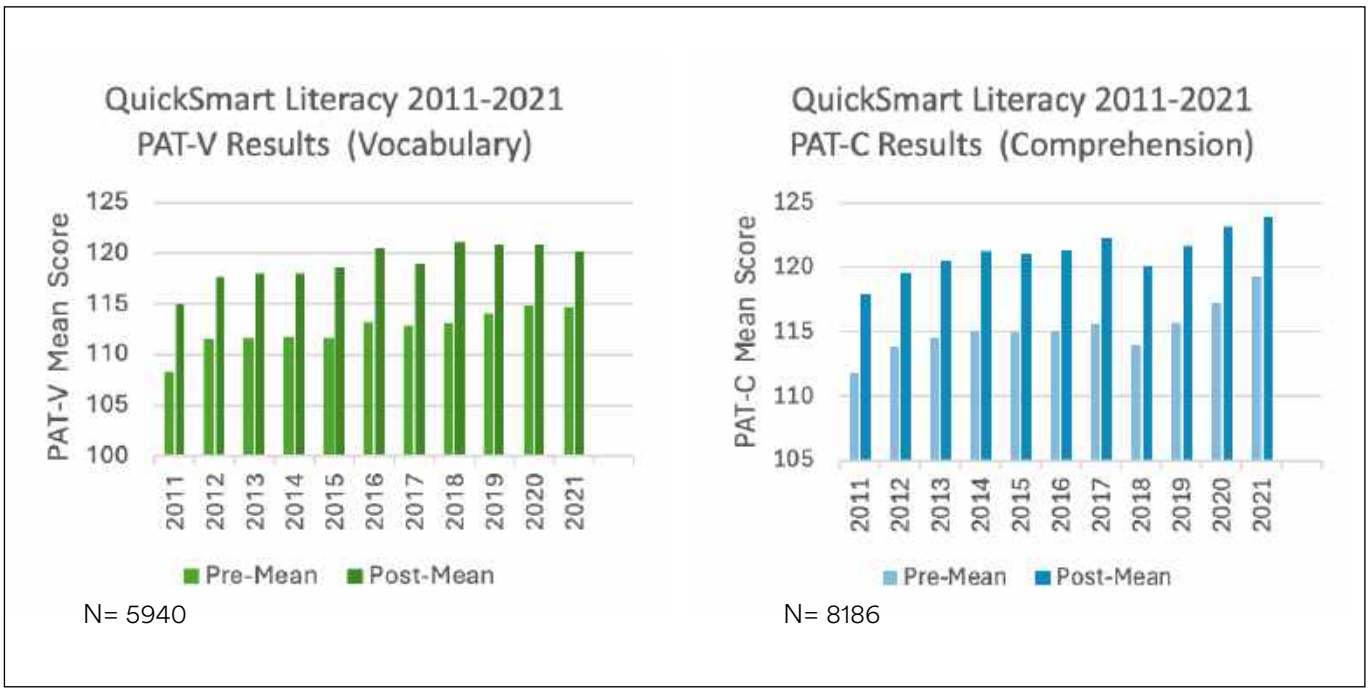


Figure 2. Pre- and post-intervention vocabulary and comprehension test results (PAT-R)

Benefits for students

QuickSmart assessment data show student progress in learning, and indicate areas for improvement. This information can then used to fine-tune instruction to meet individual student's specific learning needs.

Students learn positive behaviours, develop transferable skills and strategies for further learning, and grow in confidence and self-esteem.

Benefits for instructors and school communities

SiMERR provides a wide range of physical and electronic resources as well as ongoing support for schools that implement *QuickSmart*. The professional learning program builds capacity for individual instructors and school communities. It also raises the quality of instruction in the intervention settings. This has positive flow-on effects on classroom learning and student outcomes. It also leads to improved teaching and learning experiences and school performance overall. Where appropriate, *QuickSmart* data can be used by schools to seek funding for specialised learning support for students with learning difficulties.

[1]The effectiveness of the intervention is measured by 'effect-size'. Effect sizes of 0.60 to 0.80 translate into growth of two- to three-years within one year when compared to the learning gains made by average-achieving students.

Figure 3. QuickSmart Literacy Kit and print resources

Awards and recognition

QuickSmart was recognised by The Australian Research Council (2018) for its impact on addressing "critical factors that can improve the life potential of students at risk, leading to enhancements in social inclusion and ameliorating systemic disadvantage". In 2020, the Australian College of Educators awarded *QuickSmart* the HTB Harris Memorial Award for a Significant Educational Program – "an innovative program proven to successfully fulfil an educational need or problem over time."

What's new?

From 2024, new online tools are used to assess student progress in *QuickSmart* and to collect research data. Professional development workshops for school personnel have been offered online since 2020. As part of a long-term program of research, SiMERR engages in evaluation and continuous improvement to ensure the quality and effectiveness of the program and its adaptations. If your school is interested in participating in the current phase of the research, please email quicksmart@une.edu.au.

Acknowledgements

The author would like to acknowledge the *QuickSmart* research team: Professor John Pegg (Principal Researcher) and Professor Lorraine Graham, who co-developed the original QuickSmart program, Co-researchers Dr Maree Lake (Numeracy), Martin Trotman (Social Inclusion), Dr Stefan Horarik (Data analysis), Alwaleed Alssamani (IT research and development), June Billings; and the project administration and IT support team - Ambrose McDermott, Rajitha Kunduru, Sean Rodden and Joshua Buan.

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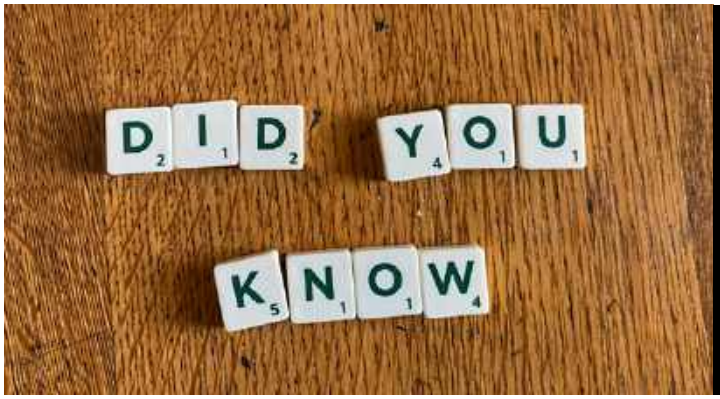

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Understanding cultural influences on student learning and behaviour

Rose Mutuota | nmutuota@une.edu.au | Leadership, Pedagogy, Diversity and Inclusion (UNE)

Diversity in the classroom is to be celebrated. Students come to classrooms from different cultures and bring with them their values and practices. The teacher also brings their own culture, which is described as a people's way of life, which includes their norms, values and practices. Researchers describe the knowledge and experiences that students and teachers bring into the classroom gained from their families and communities as funds of knowledge.

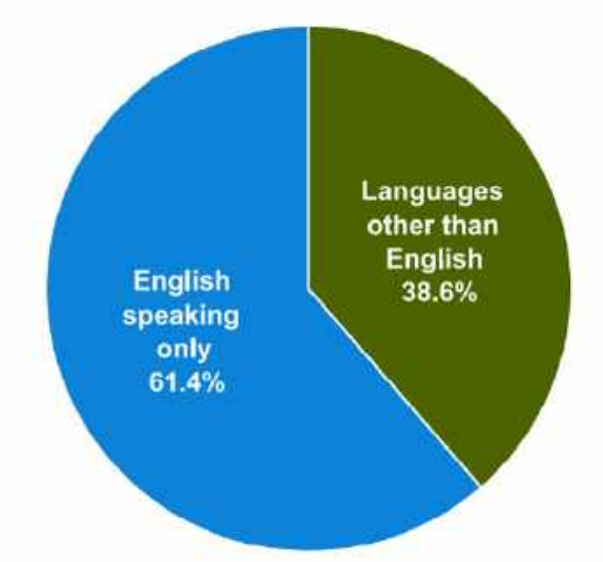

Figure 1: Language background of students in NSW Government schools, March 2023
(Source - Department of Education Schools: Language diversity in NSW, 2023)

It is important for teachers to keep in mind that culture influences learning and behaviour in the classroom, and tapping into students' culture will improve student outcomes.

Hammond (2014) explains that there are better student outcomes in classrooms where teachers draw on students' lived experiences and link students' knowledge to what they already know. Recognising and valuing students' cultures and lived experiences also contributes to better relationships between teachers and students and among students (Osher & Berg, 2017).

Classrooms where diversity is valued provides students with a sense of belonging (Shizha & Makuvaza, 2017).

Practical examples

There are many ways we can draw on students' lived experiences, for example, by reading story books, extracts, and poetry from other cultures. Another way is to allow students the choice to include heroes, places, and stories from their communities or cultural backgrounds in class activities such as storytelling and narrative writing.

Teachers should encourage students to switch from English to their community languages and vice versa when they speak with peers who speak the same language as them to support learning. This is referred to as code-switching, and it helps students' comprehension and is especially helpful for newly arrived migrants. Researchers argue that allowing code-switching (and translingual practices) in school enables students to start their learning journey from what they already know (Mutuota & Kigotho, 2024).

United Nations Educational, Scientific and Cultural Organisation (UNESCO) supports valuing people's cultures and languages because languages are carriers of people's identity and history. Teachers can use greetings, games and songs from communities represented in their classroom. Teachers can also invite parents of students from various cultural groups to speak about their communities. This gives agency and voice to the linguistically diverse families to tell their stories and shows the school's commitment to valuing diversity.

Flint et al. (2020) provide examples of literacy teaching from a culturally responsive perspective. Teachers should aim to use differentiation, which is proactively planning different ways of teaching, engaging, and assessing students to be inclusive of student diversity (Tomlinson, 2017). Differentiation enables teachers to align teaching with students' lived experiences.

Misunderstandings

When teachers disregard different cultures and practices, they may misunderstand students' behaviours and view them as disrespectful or challenging. Teachers may also misunderstand parents' actions. An example is when parents of Culturally and Linguistically Diverse (CALD) students seem reluctant to respond to the teacher during parent-teacher interviews. This is often seen by teachers as disinterest when in fact, the parents are showing the utmost respect in accordance to their cultural practices. Teachers in many CALD communities are viewed as community elders.

Teachers must keep in mind that the CALD students are still in the process of learning English and misunderstanding may occur due to the way a teacher's instructions are given. When a teacher gives direction in the form of a question such as, "Will you all gather at the front?", it may be understood by the CALD students to mean they have a choice to move to the front or not. Students may display social behaviours, such as getting very close to the teacher or not responding to the teacher when spoken. These are behaviours that are accepted in their communities. They demonstrate a close relationship with the speaker and respect for elders respectively. Students from African and Asian backgrounds, for instance, have been brought up to show respect to their elders in their cultures by speaking only when spoken to. Teachers may view this as disengagement in classrooms and/or a dislike of school. These are examples of what is referred to as a cultural gap.

A cultural gap exists where the teacher has a different perspective, values and expectations from the students. Cultural misunderstandings cause teachers to misjudge students' behaviours. Using culturally responsive teaching means viewing cultures, languages and student identities as a strength rather than as a barrier to learning (Shizha & Makuvaza, 2017). This is an important step in closing the cultural gap.

Culturally responsive teaching

Culturally responsive teaching enhances learning and cohesion in the classroom. Culturally responsive teachers know their students and explicitly teach expectations, rules and etiquette as a starting point. They allow all students to ask questions and have their voices heard during class discussions. Departments of education in Australia offer workshops and seminars on culturally responsive teaching. I would encourage teachers in all sectors to familiarise themselves with culturally responsive teaching to enable them to include multiple perspectives in their teaching and view students' cultures as a strength.

Reference

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UNE Education scholarship aids teaching dream

Hannah Collett | hcollett@une.edu.au | Communication & Engagement Officer, UNE (HASSE Faculty)

Life is busy for single mother-of-three and fulltime worker Tarryn Noble, from Gunnedah NSW. So when it came to choosing a place to study, she kept it simple: it had to be close to home, and tried and tested.

Tarryn has just commenced a Bachelor of Education (Early Childhood and Primary) online at UNE, with the help of a UNE Foundation Tamworth Scholarship.

"All of my friends that have gone through university attended UNE," says Tarryn. "They have always had positive things to say about their experience there.

"Studying a degree can feel daunting and I felt more comfortable knowing that the university isn't too far away."

And the scholarship, which Tarryn found on the UNE website, "made it all possible".

"The scholarship has opened the door for me to begin my studies. Growing up, I never thought I would be eligible for a scholarship let alone be able to study at university! I am so very, very grateful!"

Choosing an education degree was easy: teaching is what Tarryn has loved to do since high school.

"I first discovered my passion for working with children in high school as a dance teacher. I began working in early childhood education in 2019 and fell in love with helping our little friends navigate their way through their early years and preparing for 'big school'. I found that I particularly enjoy the school readiness side of early childhood education and wanted to pursue teaching from preschool onwards.

"I'm looking forward to learning what goes on behind the scenes in the classroom beyond preschool, lesson planning, and learning new strategies to support the children toward quality education from an education perspective. I'm also looking forward to stepping out of my comfort zone and experiencing new things!"

Though just starting out, Tarryn says maintaining a balance will be important to her.

"During my spare time, I enjoy playing the piano and guitar, caravanning with my children and spending time connecting with nature. I always make sure to allocate time to myself and the kids."

"Keeping to a study schedule makes this possible. Self-discipline, organisation and time management is so important!"

Tarryn says as well as looking forward to the day she will graduate – and hoping for some great marks along the way – she's looking forward to using her degree to support her community.

"I love the idea of helping shape little members of the community," she says.

"The harsh reality is that there are many children from high-risk homes. School may be the only place where they are feeling safe, secure and supported. I endeavour to support all children, so they are aware of their resilience and their importance, and with a little hard work, are capable of absolutely anything."

* There are many other scholarships, prizes and awards on the UNE site, many of which go unused each year. The UNE Foundation Tamworth Scholarship was developed by stakeholders including the UNE Foundation, Tamworth Regional Council and generous donors to assist students living in the Tamworth, Gunnedah and Liverpool Plains local government areas.

Information technology: What did you learn today?

Martin Levins | martin.levins@une.edu.au | STEM Education (UNE)

What have you learnt online today? Perhaps, by engaging with information technology you learnt that a political movement's claim had been challenged by a fact checker, maybe you learnt a new recipe for a chicken dish, or you learnt that the universe is stranger than was originally thought.

Did anyone set the curriculum for this learning? Did anyone set out learning outcomes or assess your learning?

This is an example of an information technology transformation that has radically changed our lives within several decades. This is something that I have been researching with a colleague.

The history of internet use

In 1995, less than 1% of the world's population had Internet but by the close of 2023, nearly three quarters of the world's population with most families in the high, upper middle and lower middle income nations and a significant number in the low income nations are digitally connected.

The world had moved in less than 30 years from being analogue to digital, transitioned from paper to the screen and had become connected. In early 2020, at the outbreak of Covid-19, around 90% of students in the high income countries were able to undertake their schooling wholly online. The majority of children in these countries had digital devices and broadband connectivity and critically had grown to being digital to the extent that they could readily participate in virtual schooling. Importantly, the digital divide caused exacerbated disadvantage for those children who did not have such access. The figures within the upper middle and lower middle income nations world would have been less, but UNICEF suggestion in 2017 that youth (ages 15–24) is the most connected age group, with 71% online compared with 48% of the total population.

Figure 1: Desktop, mobile and tablet share worldwide (Source: Statcounter)

iPads and tablet technologies

That transformation can be primarily attributed to one key technological breakthrough, the release of the iPad in 2010. The iPad provided all, but particularly the very young, with a simple to use, image-controlled, highly reliable, attractive, smart, highly sophisticated mobile device they could make their own.

Within a few years, the world's pre-teens moved from dabbling with computers to over 90% of those aged 4–7 years in the developed world owning or having ready access to, and being competent with tablets, marking an increasing trend of access rather than with desktops or laptops.

In 2014, families worldwide bought millions of touchscreen tablets and, in 2017, identified that the world had never witnessed such a vast and rapid technological uptake, nor an age cohort become so proficient in its use so rapidly.

Importantly, studies by early childhood researchers found children as young as three years old adopting the same approach to digital learning as the teens in the 1990s. The European studies are significant in that they affirm that eleven European nations naturally employed the same informal learning approach and developed the same core competencies as those that had been adopted globally.

The same study affirms what parents and grandparents have long noted, that children grew up being digital by playing with the devices, by being innately curious, by taking charge of their own learning, wanting to self-discover and enjoyed what they were doing.

Adult responses to children's digital learning

Of course, the reaction to children using digital devices to learn is echoed by Jason Clare, Federal Minister for Education who said in a doorstop interview last year:

> If you're in the playground and you've got a mobile phone, you're probably going to do what we do here in Parliament House, which is scrolling through your phone.

In answer to this, I ask "Why is this acceptable in Parliament?" Why isn't there education about digital use?

Instead, some schools take a Pontius Pilate approach, thinking that removing a phone for 7 hours is exercising duty of care, when the same students have access to their devices for the other 17 hours. Some schools argue that removing phones improves student behaviour.

The evidence

There are a range of different findings on whether mobile phones in schools harm student performance, including studies showing no difference. When you consider the just-in-time knowledge and skills learned by even the very young, are we denying our children the ability to determine their own, "outside school", learning? Have we made the decision that anything learnt on the internet is unworthy?

Many will argue that learning is better in a controlled classroom where the teacher controls the access to information. If this were the case, then we should expect to see worse results when access was not controlled by removing access to the internet during school time.

Not so. When New Zealand students had to work from home after the Christchurch earthquakes, schools were concerned that students would be disadvantaged and that results would drop significantly.

According to Professor John Hattie, Laureate Professor at the Melbourne Graduate School of Education, University of Melbourne, and, until recently, Chair of the Australian Institute for Teachers and School Leaders:

> "The students' performance actually went up in the final exams."

So, do we measure what we value, or value what we can measure?

What do you remember from your schooling? The illustrious philosopher, Fred Dagg, can assist in this enlightening video 'What did you learn today?'.

SHAPE-ing STEM education in the construction zone

Solina Quinton | Undergraduate student (BASc in Environmental Engineering), (University of Waterloo)
Brendan Jacobs | bjacobs7@une.edu.au | STEM Education, (UNE)

Children are more engaged when they can see the relevance of their learning. Although shapes are mainly taught as geometry, their application to engineering has been understood since ancient times. Students first need to understand the progression from defining basic shapes to identifying their uses. This important STEM concept is being trialled as research into Scientifically Integrated Learning Outcomes (The SILO Project). To help engage students, each shape has been given a 'superpower' to appeal to children's love of superhero characters.

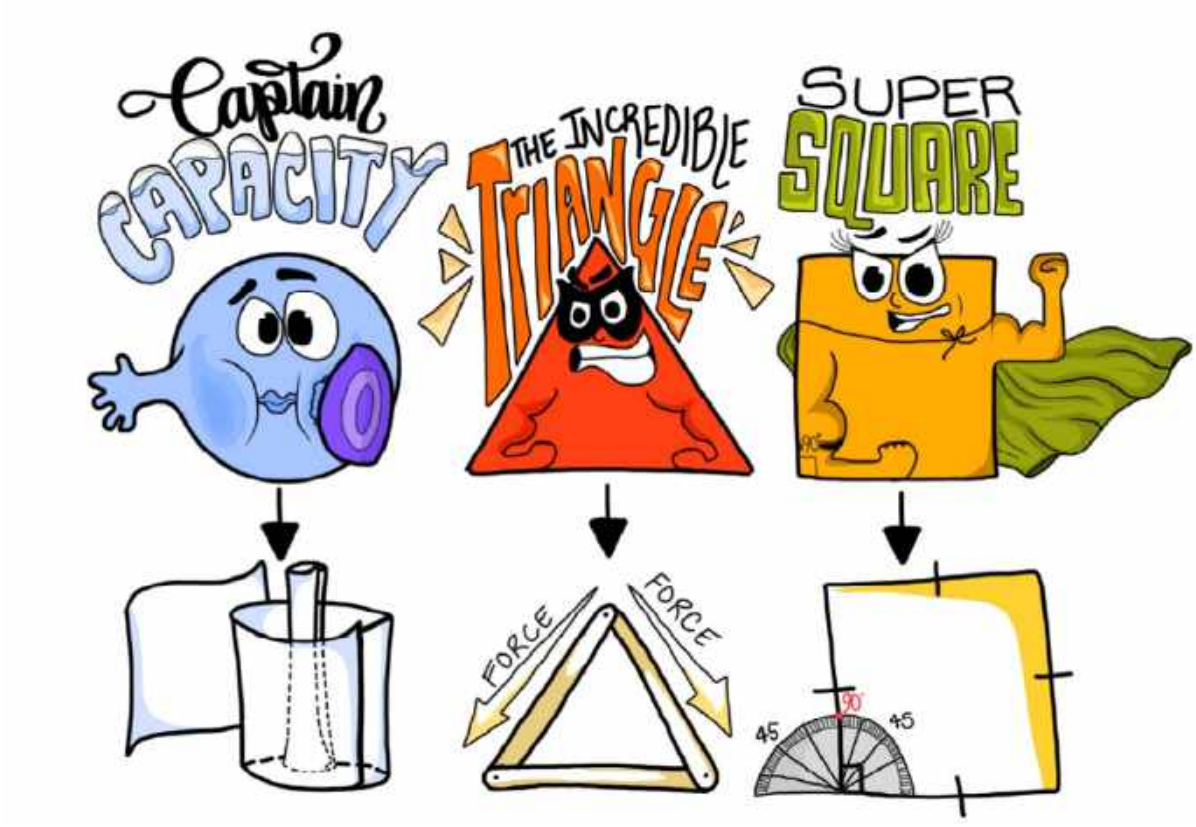

Figure 1 outlines the superpowers possessed by three common shapes.

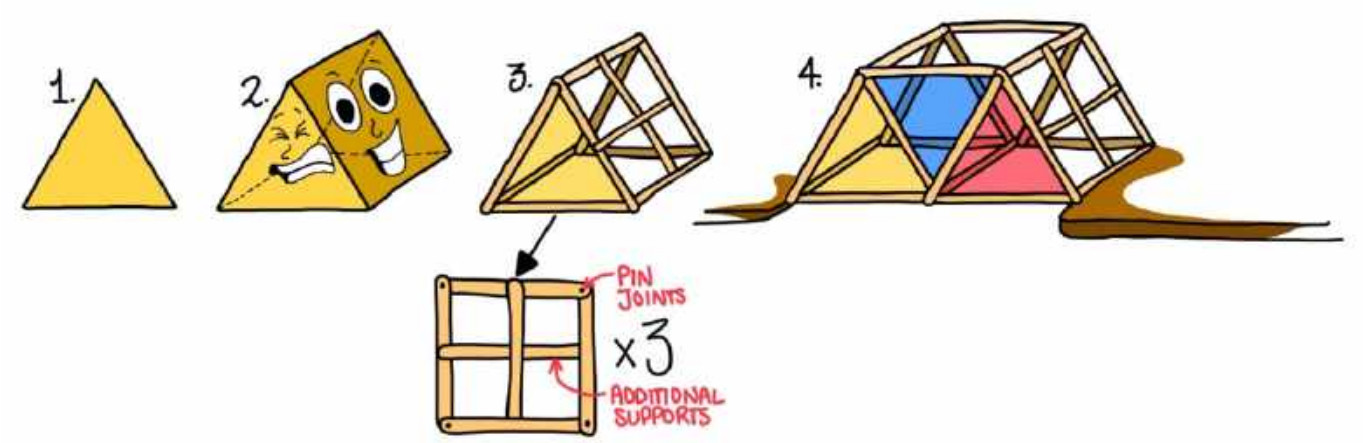

Figure 2: Extending 2D-shapes into 3D-objects (Source: The SILO Project)

Captain Capacity

A circle is unique in that no other shape can beat it for the ratio of surface area to perimeter. Bruner's (1960) spiral curriculum tells us that complex ideas can be introduced early as they will be revisited throughout a child's education.

In the case of circles, the concept of pi and the exponents involved in the formula for the area of a circle is not part of the curriculum until high school. However, educators could still introduce it briefly during this activity to open children's minds to further learning.

When this principle is extended to three dimensions, cylinders share in this superpower in relation to capacity. A simple classroom activity to introduce this requires each student to have a piece of paper. Educators can ask students to construct the greatest possible capacity. In this activity, tops are not required, and tables can provide the base.

A cylinder will trump all other configurations, but an extension question for students is: Should the paper be portrait or landscape? You can test this by filling each cylinder with MAB units or similar fillers and then transferring them from one cylinder to the other without the need for counting as a quick visual comparison.

The Incredible Triangle

A triangle is the strongest of all the shapes. This is because when you apply force to the top of the shape, its two arms evenly distribute the force down either side, while the third arm keeps the shape intact. A quick search for images of bridges, towers, and even play equipment will show how this superpower is all around us.

Super Square

Although a square does not have the same structural strength as a triangle, squares are everywhere in classrooms, tables and even boxes thanks to the symmetrical properties of the 90-degree angle. The idea of a building being 'square' is a fundamental concept in the construction industry.

Ongoing research through The SILO Project (Jacobs, 2024) has found that students find it difficult to make the jump from 2D to 3D shapes without the aid of hands-on activities. Figure 2 shows how 2D-shapes can be extended into 3D-objects.

Using the idea of support and stability, students weave popsicle sticks through a square connected by pin joints (i.e., paper fasteners or cable ties), reinforcing the shape and allowing it to better distribute the force.

The activities from this article, as well as those from all 28 STEM units (i.e., 4 terms over 7 years), can be found at silo.edu.au.

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Are your students or staff interested in studying early childhood?

Explore the UNE Course Handbook

Studying early childhood education has many benefits, including:

- making a difference in the most important years of a child's life,
- the ability to build on children's interests and strengths,
- being able to place children at the centre of their education,
- being part of a growing and important field,
- being in demand (there is a shortage of degree-qualified early childhood teachers in Australia),
- working closely with families to support children's learning, and access to a variety of work options

There are two different early childhood education courses offered at UNE.

Bachelor of Education (Early Childhood and Primary)

This is a unique teacher education course that offers two career options for graduates. The course allows employment flexibility across schools and early childhood services to suit graduates' opportunities and circumstances.

It is an initial-teacher education qualification that encompasses working with children from birth to age 12 in both early childhood and primary school settings.

This course is available:

- full time or part time,
- on-campus or online,
- with a Trimester 1 and 2 start each year.

Bachelor of Education (Early Childhood Education and Care)

Graduates are qualified to teach children aged birth to 5 years and there are multiple entry pathways.

Students commencing in Year 1 of the degree choose four subjects from a wide range of options relevant to contemporary early childhood teaching, leadership and business such as Dinosaurs!, Introduction to Literature: Children's Books, Learning Difficulties and Disabilities, Introduction to Legal Studies, and Introduction to Management Accounting and more. The four electives are completed in the first two years of the course. Students starting in Year 1 will also have more professional placement days than the minimum requirement.

Students with a diploma in early childhood education and care (or equivalent) will start at Year 3 of the degree. In Years 3 and 4, students complete subjects, with flexibility in terms of the order subjects are completed. Most placements can be completed in a student's own workplace allowing for new knowledge to be put into practice.

This course is available:

- full-time or part-time,
- online
- with a Trimester 1, 2 and 3 start each year.

School of Education
University of New England
Armidale, NSW, 2351, Australia
education@une.edu.au

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School of Education

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PhD

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Discover our wide range of undergraduate pre-service teaching degrees (early childhood, primary, secondary) and conversion degrees here.

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Are you wanting to become a teacher?

The career opportunities for education graduates are increasing every year, especially in regional, rural and remote areas of Australia.

By studying at UNE, you will be well equipped to perform in these often-demanding contexts, plus you'll be more likely to obtain a permanent teaching position if you work in an area of teacher shortage. The NSW Government even offers a variety of targeted scholarships to help you study and gain employment: www.teach.nsw.edu.au/getpaidtostudy

UNE has developed undergraduate courses in Early Childhood, Primary, Early Childhood/Primary, and K-12 Teaching to expand employment prospects by qualifying you to teach across two sectors.

What Teaching Courses are Available?

UNE offers a number of undergraduate Education courses including:

- Bachelor of Education
  - Early Childhood Education and Care
  - Early Childhood and Primary
  - K-6 Teaching
  - K-12 Teaching
  - Secondary Arts
  - Secondary STEM
  - In-service conversion (for teachers who might be thinking of retraining)
- Bachelor of Special and Inclusive Education (Primary)
- Master of Teaching (Primary)
- Master of Teaching (Secondary)

Worried About the "Three Band Five" Requirements?

Many of our Initial Teacher Education courses are structured to include one year of "discipline studies" (i.e. subject/s that you will go on to teach in schools) in the first year of study. Successful completion of this first year also gives all students, irrespective of their educational backgrounds, the opportunity to demonstrate they meet the Government's academic standards for studying teaching.

Try our online 'Teaching Solution Finder' at www.becomeateacher.com.au, which makes it easy to understand the entry requirements of our Early Childhood Education and Initial Teacher Education degrees, and design a study pathway based on your personal circumstances.

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Acknowledgement of Country

The University of New England respects and acknowledges that its people, courses and facilities are built on land, and surrounded by a sense of belonging, both ancient and contemporary, of the world's oldest living culture. In doing so, UNE values and respects Indigenous knowledge systems as a vital part of the knowledge capital of Australia. We recognise the strength, resilience and capacity of the Aboriginal community and pay our respects to the Elders past, present and future.

Artwork: Warwick Keen "Always was, always will be" 2008. Gifted by the artist to UNE in 2008