

➤ **POCKETS OF POVERTY**
Youth unemployment rate up to 26%

➤ **CLOSE TO HOME**
Engaging parents in schooling

➤ **GENDER AND SEXUALITY**
Nationwide survey on schools' role

FUTURE-MAKERS

EDUCATION & WORK

**EDUCATION
FOR ALL**

Supporting an inclusive
experience



WESTERN SYDNEY
UNIVERSITY



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Have you considered a career in research? Have you ever thought about studying a PhD? Do you have skills and experience that you could apply to an impactful research project?

Western Sydney University provides pathways for those interested in a career in research and looking to further their qualifications.

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names of people who have died.

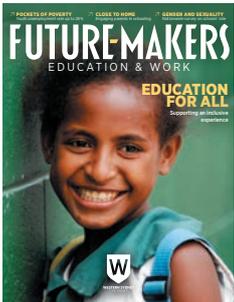
ABOUT

Western Sydney University is a large,
student-centred, research-led university,
embracing Australia's global city, Sydney.
Established in 1989, the University proudly
traces its history to 1891 through the
Hawkesbury Agricultural College. Today the
University has more than 200,000 alumni,
45,000 students and 3,300 staff.

The University is now ranked in all major
global university ranking systems, and is
in the top 2% of universities worldwide.
Through investment in its academic
strengths and facilities, the University
continues to build its profile as a research
leader in Australia and is nurturing
the next generation of researchers. Western
Sydney University graduates go on to
take up rewarding careers that make real
contributions to societal change, lifting the
pride of students, staff and the community.

A guiding principle for the University
is that there is no limit to potential success
for those with drive, talent, confidence
and ambition.
westernsydney.edu.au

ON THE COVER



➤ Education for all
page 12

Cover image:
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BUILDING STRONG FOUNDATIONS

Education and work are determinants and indicators of healthy growth for individuals, families, communities, and societies. Western Sydney University’s pioneering research in education and work emphasises how equity for our most disadvantaged people and communities can be achieved by understanding and challenging current discourse, practices and policies.

The importance of advancing knowledge in education and work cannot be understated. There are obvious links to the United Nations’ 2030 Sustainable Development Goals 4 (Quality Education) and 8 (Decent Work and Economic Growth). The ubiquitous nature of education and work, means it also influences other Sustainable Development Goals such as Reducing Poverty, Good Health and Wellbeing, and Reduced Inequalities.

Welcome to this special issue of *Future-Makers* where we proudly showcase our education and work research leading the way in exposing, and understanding, critical issues and advocating for the most disadvantaged — locally, nationally and internationally.

At Western Sydney University we champion an interdisciplinary approach where researchers drawn from across our many schools, institutes, and disciplines come together to tackle the most pressing problems and explore promising developments in the fields of education and work.

The stories featured in this issue illustrate the range of topics tackled under the umbrella of education and work at Western, while demonstrating a commitment to high-quality research that makes a positive difference to individuals, families, and communities.

For example, our researchers critique and promote pedagogical, curricula and relational practices that

foster: child-led education in nature (page 11); educational participation for all (page 12); and parental engagement in children’s education (page 4).

Similarly, access to employment opportunities for those most vulnerable (e.g. youth with disabilities or from disadvantaged backgrounds in Western Sydney) are championed by our researchers (pages 7, 10).

Finally, our researchers are leading the development of the early identification of risk factors for dyslexia (page 8), examining parental attitudes regarding sexuality and gender diversity education in schools (page 14), and assessing the communication skills of young Indigenous children which will culminate in improved early intervention practices and future outcomes (page 6).

At Western we are committed to mobilising our research expertise in education and work to cultivate thriving societies. Genuine partnerships with industry and community are a cornerstone of our research, maximising the impact of our research to enact social change locally, nationally and internationally.

We hope you enjoy these stories of research excellence and real-world impact led by our accomplished Western Sydney University researchers. ♥

Associate Professor Danielle Tracey
Research Theme Champion

Associate Professor Maria Estela Varua
Research Theme Champion

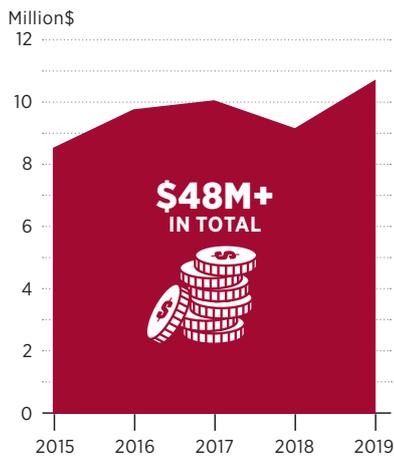
Dr Lyn Tieu
Research Theme Fellow

WESTERN SYDNEY UNIVERSITY IN NUMBERS

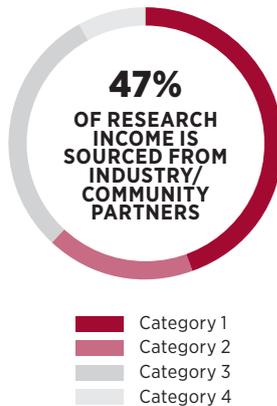
Located in Greater Western Sydney, one of the fastest growing regions in Australia, Western Sydney University is home to a vibrant and diverse community of staff and students.

EDUCATION & WORK RESEARCH

RESEARCH INCOME



SOURCE OF RESEARCH INCOME



EDUCATION & WORK 2018 EXCELLENCE IN RESEARCH FOR AUSTRALIA DISCIPLINES ABOVE WORLD STANDARD



• Cultural Studies



• Communication and Media Studies
• Linguistics

• Performing Arts and Creative Writing
• Psychology
• Sociology

RANKINGS

2020 Times Higher Education World University Rankings **TOP 2%**

THE WORLD UNIVERSITY RANKINGS 2020 YOUNG **36th** in the THE Young University Rankings

THE IMPACT RANKINGS 2020 TOP 10 **2nd** in Australia **3rd** in the world

NATIONAL RANKINGS FOR INDIVIDUAL SUSTAINABLE DEVELOPMENT GOALS

1st **6** Clean Water and Sanitation
14 Life Below Water
15 Life on Land



2nd **5** Gender Equality
10 Reduced Inequalities
12 Responsible Consumption and Production
16 Peace, Justice and Strong Institutions
17 Partnerships

QS WORLD UNIVERSITY RANKINGS TOP 100 2020 Communication & Media Studies, Nursing, and Sociology

ACADEMIC RANKING OF WORLD UNIVERSITIES (ARWU) 2020

23rd Ecology
TOP 75 Agricultural Sciences, Automation and Control, Civil Engineering, and Nursing

2019 LEIDEN RANKINGS FOR RESEARCH COLLABORATION



80th in the world
3rd in Australia

10 REDUCED INEQUALITIES



OPENING SCHOOL GATES FOR PARENTS

A Western Sydney University team is examining the barriers to parental participation in their child's education.

Children tend to achieve more when their parents are involved with schooling. Western Sydney University researchers have now published recommendations for improving how schools

and parents from diverse communities interact. Parent engagement encompasses everything from active participation in learning activities to attendance at school events or simply being up to

date on their child's progress. "With growing awareness that parents' contributions make a difference, there has been interest at the government level to strengthen engagement," explains study lead, Associate

Professor Christine Woodrow, from Western's Centre for Educational Research.

The government, in partnership with the Australian Research Alliance for Children and Youth (ARACY), commissioned researchers from Western's Centre for Educational Research to conduct focus groups on parental engagement. Woodrow focused on low socioeconomic families whereas Associate Professor Loshini Naidoo focused on culturally and linguistically diverse families, and Professor

This research was funded by the Australian Research Alliance for Children and Youth.



NEED TO KNOW

- Children achieve more when parents are involved in their schooling.
- Western researchers investigated obstacles to parental engagement for those of low socioeconomic, culturally and linguistically diverse (CALD), or Indigenous backgrounds.
- They released recommendations aimed at increasing engagement.

The lack of a common language can be a hurdle for parents from CALD backgrounds engaging in their child's education.

Margaret Somerville focused on Aboriginal families.

The team found that parents of low socioeconomic status frequently felt insecure about being involved in their child's education, especially if they had been unsuccessful in school themselves. "Schools have a tendency to reinforce the insecurity. The research indicated that the only interaction that some parents have with schools are phone calls for their children's bad behaviour," Woodrow explains. "The implication here is that

schools should establish rapport with the parents as soon as the children progress into primary school, so that they have grounds for better communication."

The challenges differed considerably for culturally and linguistically diverse (CALD) families. "Most parents from CALD backgrounds felt that there was a cultural mismatch between the teachers and students, and a lack of effort to develop intercultural sensitivity," says Naidoo. The lack of a common language was also a hurdle.

On the other hand, for Aboriginal parents, there was a discord with schools in the understanding about learning, one issue was the loss of cultural authority. "For Aboriginal parents, the framework for learning must be based in Aboriginal culture, with land, language, history and story playing an integral role. They also regard learning as lifelong and themselves as the child's first teachers," says Somerville.

The team translated their findings into a series

of recommendations at the policy level, including the need for professional learning, training and resources for parents and educators that support children from low socioeconomic, cultural and linguistically diverse, and Aboriginal backgrounds. "A clear message from the study was that school administrators are genuinely interested in getting parents involved," says Woodrow. "A challenge now is overcoming the lack of school resources to foster relationships with parents." ♥



A CHECKLIST FOR SPEECH SUCCESS

A new tool can assess communication skills in young Indigenous children in the languages they speak at home.

Spoken language difficulties are one of the most common developmental hindrances in early childhood, with about 10-20% of children affected across the world's many cultures. In Australia, Aboriginal children also have relatively high rates of middle ear infections (otitis media) leading to hearing loss. But there are few tools that are culturally and linguistically appropriate for assessing early communication for Aboriginal and Torres Strait Islander children.

At Western Sydney University's MARCS Institute for Brain, Behaviour & Development, Professor Caroline Jones and her team have designed a checklist guided by Indigenous families who speak more than one language or dialect. Available as an app or a hardcopy list, the Early Language Inventory (ERLI) is designed to be a conversation starter between parents and professionals, to help spot children who might have speech, language or hearing difficulties, and promote joint decision-making and early intervention when needed.

The checklist can be used by parents in collaboration with speech pathologists, early childhood educators, health workers, or researchers, to assess children aged between 8 and 36 months, or older if the child has special needs. It includes 112 early acquired words and 8 hand signs, and asks the parent how they say each item at home, respecting the diversity of Indigenous languages and cultures in Australia.

NEED TO KNOW

- MARCS researchers have designed a checklist to help identify children with speaking, language or hearing difficulties.
- The ERLI checklist was developed in consultation with Indigenous families.
- It is now being used by speech pathologists in urban, regional and remote areas of Australia.

"ERLI is a new local, short-form adaptation of the internationally known MacArthur-Bates Communicative Development Inventories," says Jones. "We know that early support is vital in speech, language and hearing. This checklist can help professionals accurately assess children's communication in partnership with the parent, so the parents can get support for their kids if

needed, before communication difficulties affect their social and academic success."

ERLI was first developed in 2014 through interviews with Aboriginal parents from the Katherine region in the Northern Territory in partnership with Sunrise Health Service and The Smith Family, and funding from the Australian Research Council (ARC).

Jones and her group have teamed up with Hearing Australia and National Acoustic Laboratories (NAL) to explore how ERLI can complement NAL's Parent-evaluated Listening & Understanding Measure (PLUM) and Hear and Talk Scale (HATS), which are short parent-checklists that can be used by early childhood education and health professionals to assess whether a child may need a referral for hearing or speech-language support.

In partnership with Wurli-Wurlinjang Aboriginal Health Service in Katherine, Northern Territory and Tharawal

Aboriginal Corporation in Campbelltown,

New South Wales, in 2018-19 the three tools were trialled, with full hearing and language assessments to cross-validate their accuracy.

The large research team also ran co-design workshops with Aboriginal health and education professionals across New South Wales, Northern Territory and Queensland to fine-tune training materials. The project has received funding, through NAL, from the Department of the Prime Minister and Cabinet.

Jones and her team, together with health services, early childhood centres, and speech pathologists, are exploring how families and professionals from across Australia may benefit from the assessment tool. The project is currently funded with the ARC Centre of Excellence for the Dynamics of Language.

Chantelle Khamchuang, an Aboriginal woman and an honours student within the project, is working with Aboriginal families living in Sydney to investigate how ERLI can be used by families who use Aboriginal ways of speaking English, at home.

Eugenie Collyer (left) and Jaidine Fejo (right) presenting the Early Language Inventory to the Speech Pathology Australia Darwin branch.





10 REDUCED INEQUALITIES



SUPPORTING CHANGE

Navigating the transition from school to adult life with a disability.

In research with Aboriginal communities it is important to ask permission and listen to the advice and input from the elders. “Parents are still speaking home language, so children are speaking home language. This is how our children talk,” says Aunty Pat Field. “There’s a need for a culturally appropriate tool.”

In June 2019, Jones and her project team members, Jaidine Fejo and Eugenie Collyer, presented the ERLI tool at the Speech Pathology Australia National Conference. Since then, speech pathologists in remote, regional and urban areas of Australia have started using the tool to assess communication skills in young Indigenous children, by asking the parent about the local home language words that their child knows, such as ‘tidda’ for ‘sister’.

“One immediate positive outcome of the collaborative project was that some children who had been on waitlists for audiology received a hearing test and follow-up,” says Jones.

Laura Doig, speech pathologist at Sydney Children’s Hospital Randwick says that the ERLI tool has helped spark conversations with parents about their child’s communication development.

“Some families have said that they had not realised how many words their child can understand,” says Doig. “It is great to have a tool that values the parents as the experts on their child’s communication.”

More than four million people in Australia

have some form of disability, according to the Australian Network on Disability. The unemployment rate for working-age Australians with disabilities (9.4%) is almost twice that of those without (4.9%).

Bridget found it very difficult to find a job after she left school. She wanted to get into childcare, but was not able to receive the help she expected to make her ambition come true. Bridget has an intellectual disability. “I don’t comprehend properly and I muddle my words,” she explains.

Bridget went from one adult disability service to another, until she settled at Alive4Life, a community and disability organisation where she is both a client and an employee. At Alive4Life, she gets help with reading and building her self-confidence. She also supports others.

Bridget found communication especially difficult during her transition from school to adult life. She also struggled to find someone who really understands people with disabilities, she says.

Bridget, now 24, is part of a five-member advisory group for a Western Sydney University research study funded by the Endeavour Foundation. All five members of the advisory group are between 16 and 25 years old and have an intellectual disability.

The study aims to understand how young people with intellectual disabilities experience the transition from school to adult services.

“I’m interested in finding the best research approaches and methods to include the views of children, young people, and people with a disability who might have different means of communication,” says Lise Mogensen, a senior lecturer in medical education at Western and the principal investigator of the study.

Mogensen and her team, including community child health specialist and Western medical education senior lecturer, Jenny McDonald, are interviewing young people with intellectual disabilities, their carers, educators, and service providers to understand their experiences six to 12 months before and after the

transition from school to adult life. An online survey aims to reach around 100 young people with intellectual disabilities and to explore their experiences two to five years after leaving school. Survey participants who opt in also receive an invitation to participate in more in-depth interviews about their experiences.

In 2015, the Australian government began rolling out its National Disability Insurance Scheme, which should be fully operational in 2020. The scheme aims to address problems with the country’s earlier model, in which funding went directly to organisations. The new scheme’s consumer model aims to provide personally tailored support for those who need it. But there have been teething problems. Mogensen and her colleagues hope their research will provide the scheme with information about the gaps that still need to be addressed and will identify the necessary factors for a good transition process from school to adult disability services, training or employment.

Western researchers are asking young people with disabilities about their transition to adult life.

This research was funded by the Endeavour Foundation Disability Research Fund. © proksima/Stock / Getty Images Plus



3 GOOD HEALTH AND WELL-BEING



READING BETWEEN THE LINES

The connection between mothers and babies may provide important clues for early identification of dyslexia.

A BabyLab participant.



This research was supported by the Australian Government through the Australian Research Council.

Western Sydney University research

is trying to get a jump on dyslexia, identifying tell-tale signs before a child can even read.

“Dyslexia is commonly thought of as a learning disability, but it is really a different way of processing information,” says Professor Denis Burnham, founder of the MARCS BabyLab at Western.



Child interacting with audio-visual input at BabyLab.

Around 8% of the population has dyslexia, but if a baby has a parent with dyslexia, the likelihood of their developing dyslexia increases to 60%.

It has always been necessary to wait until a child starts to read before dyslexia can be diagnosed, but Burnham and his colleagues hope to change this by investigating the earliest signs of the onset of dyslexia in babies for the first time.

“We are not looking at literacy skills. Instead we are investigating auditory processing and perception abilities, starting with babies at five months. We follow them until they turn five to see if their early abilities can predict their eventual literacy skills,” says Maria Christou-Ergos, research assistant on the project.

In this study, babies were regarded as ‘at risk’ if they had one parent with dyslexia. The

researchers have found that these babies process auditory information differently. The auditory index they use is called ‘rise time’ and this is the time it takes for sounds to reach maximum loudness. Consider, for example the sounds ‘baa’ and ‘wah’. The time it takes to get to maximum loudness is short for ‘baa’, but it takes much longer for ‘wah’.

“Rise time had never been tested in infants. In our study we found that babies at risk for dyslexia don’t discriminate very well between rise-time differences, but other babies do,” says Burnham.

In addition, they found that rise-time discrimination ability is related to the degree to which parents exaggerate vowels when they speak to their baby (called vowel hyperarticulation). Parents naturally use hyperarticulation when speaking to babies. According to detailed measurements, the greater the vowel articulation by the parent, the better the baby is at differentiating rise times.

This is interesting because the researchers also found mothers interacting with babies at risk of dyslexia don’t use vowel hyperarticulation.

Burnham, along with another Western researcher who also works at the Basque Center on Cognition, Brain and Language, Dr Marina Kalashnikova, conducted a study in which mothers of at-risk infants and mothers whose infants were not at risk, talked to their own or another baby.

They found that mothers of at-risk babies did not hyperarticulate to any babies in the study.

Meanwhile, mothers whose babies were not at risk did hyperarticulate to their own baby, but, surprisingly,

DYSLEXIA
affects up to
8%
OF THE
POPULATION

Fellow researcher at Cambridge University, Professor Usha Goswami, had previously found that children with dyslexia are worse at noticing differences in rise-time than children without dyslexia. Having trouble mapping auditory information to visual cues later affects the child’s ability to learn to read.

“If babies don’t have all the auditory information worked out, then when they start to learn to read, they can’t map the sounds they already know to these new squiggles on the page, squiggles that we know as letters,” says Burnham.

NEED TO KNOW

- Children at risk of dyslexia process auditory information differently.
- Mothers also speak differently to babies who are at risk of dyslexia.
- Babies at risk of dyslexia may convey cues about tone.

did not hyperarticulate to an at-risk baby. The researchers believe infants must provide some cue that prompts the adult’s hyperarticulating. “This evidence suggests that babies are ‘telling’ their mothers to make the vowels nice and clear, and that at-risk babies appear to be conveying different information.

“The next research question is to find out what these babies want. Maybe there is something else they are ‘asking for’ but we don’t know yet,” says Burnham.

Fortunately, they have many willing participants to help answer this question. Research at the MARCS BabyLab has involved hundreds of children, including Nathan and Daniel. Their mother, Alix Madden says “I think it’s important to contribute to these things. This research benefits many people.”



8 DECENT WORK AND ECONOMIC GROWTH



SLIPPING THROUGH THE CRACKS

A report identifies areas in western Sydney where youth unemployment is double the national average.

Western Sydney is

Australia's most significant urban growth corridor, but this is not reflected in job opportunities for young people in the region.

Through detailed cross-analysis of census, education, and labour-force participation data, a Western Sydney University study has found geographic clusters in western Sydney where cohorts of young people, aged 15-24 years, have disengaged from further education and the labour force.

Written by the Centre for Western Sydney, the *Youth Unemployment in Western Sydney* report was commissioned by Youth Action, the overseeing body for youth services in NSW, which represents 1.25 million young people in the state.

Lead author, Professor Phillip O'Neill, says the report points to a compounding set of problems behind the growing number of 'disengaged' young people in western Sydney.

This includes a marked deterioration in the labour market for young people since the global financial crisis; unsuccessful education outcomes; and government approaches to welfare assistance.

He says official statistics fail to capture this 'not earning or learning' group, yet when they are taken into account, as in this report, there are areas in western Sydney where youth unemployment is double the official rate.

For example, average youth unemployment for central western Sydney is 13.8%. But this average figure obscures significant sub-regional variations — two neighbouring suburb groups in that area, Lethbridge Park-Tregear and Bidwell-Hebersham-Emerton, have youth unemployment rates of 26% and 24% respectively.

In collaboration with .id — their report partners and

NEED TO KNOW

- A group of 15-24 year olds in western Sydney who are not 'earning or learning' can be overlooked in official statistics.
- Western is studying this group
- The decline in full-time jobs for youth in western Sydney is one of the main issues.

demographers, the team identified a further 23 areas in western Sydney with high levels of young people 'not earning or learning'.

"Typically these areas involved a collection of two or three adjoining neighbourhoods where we found around 500 15-24-year-olds that are officially unemployed,

meaning they qualify for unemployment benefits and pass work-ready tests. We identified another 500 young people who have dropped out of the system all together," he says.

"It is very difficult to find this 'not earning or learning' group in the statistics. You have to do a lot of cross tabulation between welfare, education and labour market data."

In many of these clusters of disengaged youth, there were also high rates of young mothers, low rates of car and home ownership, low rates of school completion, low English language proficiency, and high levels of intergenerational welfare.

One of the main issues identified in the report was the long-term decline in the availability of full-time jobs for youth in western Sydney.

"Sydney is constructing a geographical imbalance where the growth in the young labour

© OcusFocus/Stock/Getty Images Plus. This report was funded by Youth Action.





COURSE OF NATURE

Child-led activities with animals and the outdoors can broaden the scope of learning in unexpected ways.



A drawing from one of the children in the project.

force in many neighbourhoods isn't matched by growth in accessible jobs. Getting people to work involves a very expensive public transport system and highly congested road systems," he said.

"To a certain extent the problem has been hidden because we collect data in ways that don't pick up this 'not earning or learning' group, but now we have developed ways of tracking them, the pressure to be doing something is growing."

"Predictive models tell us the most likely outcome for this group is a lifetime of welfare support. The effect on the public purse is enormous, approaching \$1 million per person over a lifetime.

"Poor education and work outcomes are not only undesirable from an individual point of view, they are unsustainable from a taxpayer point of view." ▀

Through an open-ended project observing children's interaction with nature, researchers are taking leads for a new style of education.

The project is about broadening literacy skills and fostering a sustainability mindset in early-childhood education. "The children of the 21st century live in the time of climate change – the question is, how can we develop powerful teaching methods that prepare these children for the unexpected?" asks chief investigator, Professor Margaret Somerville, of Western Sydney University's School of Education.

In the earliest phase of the project, the researchers — Somerville, Tessa McGavock from the WSU Early Learning Centre, and Dr Sarah Powell from Macquarie University — took photos and videos of children during their everyday play with nature. Unlike the adults children would usually encounter, the researchers did not instruct or educate. Instead, the adults participated in child-directed play and closely observed the children. "The process was child-led and very much about making

discoveries along the way," says Powell.

Through this, the researchers identified seven categories of child's play which they named: 1) becoming animal; 2) movement, gesture, mime and performance; 3) artefacts and imaginative play; 4) naming bodies, naming self; 5) drumming, singing, dancing, rhythm; 6) bodily immersion in elements; and 7) becoming plant.

Educators at a day-care centre in western Sydney then brainstormed how they might develop creative pedagogical responses to these

categories. One such project, *What we can see outside*, based a range of learning experiences around the observation of "birdies" by zero to three-year-old children. The toddlers learned songs, colours, textures, movement, co-operation, communication, reading, painting, among other skills, through their construction of a bird-bath and repeated engagement with the birds who visited.

The project improved important developmental skills for the children, while deepening their understanding of sustainability and nature more generally.

The idea has expanded to find global connections with a project that involved exchanging regular stories about nature with a Finnish school. This served to deepen the children's mutual understanding of national differences and exposed them to novelty. "There's so much potential to recreate the terms that young children learn under. They learn so much when we just let them be," says Somerville. ▀

NEED TO KNOW

- Western researchers sought to broaden literacy skills and foster a sustainability mindset in early childhood education.
- They identified seven categories of child's play, and brainstormed pedagogical responses.

This research was supported by the Australian Government through the Australian Research Council.



EDUCATION FOR ALL

An Australian-led research project is helping teacher-educators in Papua New Guinea promote inclusive education for students with disabilities.

This research was supported by an Australia Awards Fellowship funded by the Australian Government.
© Stockbyte/Stockbyte/Getty Images

The 'UN Convention on the Rights of Persons with Disabilities (CRPD):

recognises the universal right to inclusive education. This can be difficult to facilitate, especially in countries like Papua New Guinea, where 85% of the population lives in remote and rural areas.

“Children with disabilities in these areas are often refused entry to formal schooling,” says Genevieve Nelson, the chief executive officer of Kokoda Track Foundation (KTF). “Sometimes teachers and schools are the ones who refuse entry because they do not have the specialist skills to support children with disabilities to engage meaningfully in learning. Sometimes it’s the parents who refuse to send them to school.”

KTF, a not-for-profit organisation that aims to establish the right to “an inclusive, equitable and quality education” for all, was a major partner in a project led by Western Sydney University researchers, Danielle Tracey and Katrina Barker. The project provided specialist training to 10 teacher-educators to develop their capabilities to promote inclusive education at Papua New Guinea teacher colleges.

“We wanted to explore the level of understanding among officials within the National Department of Education, the Papua New Guinea (PNG) Education Institute, and various teachers’ colleges, and to support them to strengthen policy and practices related to inclusive education, especially in remote and rural areas,” says Nelson.

RESEARCH SKILLS

The teacher-educator fellows received four weeks of training at Western followed by a week of further training, several months

later, back in Papua New Guinea. At the end of the project, they reported that one of the most highly valued outcomes of their training was learning to conduct ‘action research’. In other words, the fellows learned how to use research methodologies to critique and improve specific areas of teaching practice.

“IT HAS BEEN AMAZING FOR OUR TRAINERS AND EDUCATORS.”

One of the fellows, Cathy Sowi, a curriculum officer of inclusive education at Papua New Guinea’s National Inclusive Education Unit, used focus group interviews and surveys to investigate the inclusive education program carried out in a school in the National Capital District of Port Moresby. Her research aimed at understanding the program’s context,

NEED TO KNOW

- Children with disabilities in rural areas of Papua New Guinea (PNG) have trouble accessing inclusive education.
- Researchers from Western led a project that helped PNG teacher-educator fellows promote inclusive education.
- The fellows’ experiences will help inform PNG education policy.



Cathy Sowi at the National Inclusive Education Unit.

effectiveness, and the implications for teaching and learning. After the project conclusion, she expanded her research to cover schools in three other provinces. “The recommendations that emerged from the fellows’ action research will contribute significantly to the developments of inclusive education in Papua New Guinea,” says Sowi.

The fellows presented their findings to the directors of Papua New Guinea’s Department of Education, which is in the process of restructuring the country’s schooling system. “We have an exciting opportunity to ensure that inclusive education and education for all is front and centre of this new agenda,” says KTF’s Nelson.

CONTINUOUS LEARNING AND TRAINING

The fellows also helped put together a manual that provides teachers in remote and rural areas with practical strategies, skills and techniques to engage parents and communities with the aim of improving access to education for children with disabilities.

They also learned how to improve curricula, assess

students’ learning needs, use assistive technologies, and received teaching on the sociocultural construct of disability and on models of leadership.

Tracey and Barker, along with the ten fellows, are working collaboratively to disseminate the results of the research project. “Disseminating the results in collaboration with the Fellows is important to developing their capacity and ensuring the findings are meaningful to educators in Papua New Guinea,” says Tracey. Additionally, following Tracey and Barker’s initiative of offering Western’s Master of Inclusive Education internationally, several fellows and their institutes have already expressed interest in joining the program. They have also hosted shorter training sessions at Western for 26 Papua New Guinea teacher-educators in collaboration with KTF.

“It has been amazing for our trainers and educators to experience first-hand the professional university life at Western and to have access to their resources,” says Nelson. ■



GENDER AND SEXUALITY IN THE CLASSROOM



When it comes to gender and sexuality, classroom education can be contentious. A new survey aims to advance the conversation.

When debate about the 'Safe Schools Coalition Australia' programme

raged in late 2017 and early 2018, many mainstream media outlets reported that parents didn't want their children taught about sexuality and gender diversity in the classroom. But research suggested the contrary. Western researchers are now surveying parents across the nation to establish a clearer picture of their views.

"Studies have indicated that parents overwhelmingly feel there should be some education around these issues in schools," says Associate Professor Tania Ferfolja, from the Centre for Educational Research in Western Sydney University's School of Education. She explains, however, that those studies, including those she performed with her colleague, Associate Professor Jacqueline Ullman, were small and limited: "Because nothing has been done on a large scale in Australia, we really don't know what parents want."

Intent on rectifying this, Ferfolja and Ullman have embarked on the country's largest and most detailed exploration of sexuality and gender diversity education to clarify exactly what parents would like to see their children taught in schools and when. Funded by the Australian Research Council, data collection for the first part of the project — a nationwide parent survey — was completed at the end of 2019. The survey was advertised via Facebook to the parents of children who attend any public school in Australia, from kindergarten to the final year of high school.

"The second phase involves contacting parents whose children are gender and sexuality diverse to ask about their experiences of the schooling system, for themselves and their children," Ferfolja says. "This is to get a sense of where they have been best supported, and where more support is required."

This is seen as critical because research shows that young

sexuality diverse, transgender and gender diverse people are extremely vulnerable to mental health concerns. Their rate of depression and anxiety is considerably higher than for

adolescents in the general population and they experience extraordinarily high levels of self-harm and suicide attempts.

"Part of the reason we wanted to do this work is that from existing research we are aware that a number of gender diverse or same-sex attracted students have quite a hard time, for a variety of reasons, but primarily to do with their experiences at school," Ullman confirms.

The third major component of the research project by Ferfolja and Ullman is the development of a "performed ethnography". This involves collating the voices of the research participants and creating a play for the purposes of instruction and education. Professor Tara Goldstein, who is an academic and a playwright from the Ontario Institute for Studies in Education at the University of Toronto, in Canada is collaborating on the work. "We are working with her to develop a performance piece that can be used for the professional development of teachers and

NEED TO KNOW

- There was heated political debate about the Safe Schools Coalition Australia programme in 2017-2018.
- Preliminary studies suggested that parents feel there should be some education about sexuality and gender diversity in schools.
- Western Sydney University researchers are now conducting a nationwide survey of parental attitudes regarding sexuality and gender diversity education.

This research was supported by the Australian Government through the Australian Research Council.



Studies have shown parents believe there should be curricula related to sexuality and gender in the classroom.

other interested people working in support services in this area,” Ferfolja says.

Recommendations for practice and policy are also expected to come out of the research, suggesting that the findings will help guide and streamline curriculum development, possibly nationwide. “We will be working with an advisory committee, which helped refine the survey content, to really feed results back into every state and territory,” Ullman says. Because there will be location data from participants, it may be possible to provide tailored feedback to states and territories about what parents in different locations want taught at school and for what age groups.

One of the major stakeholders in the advisory committee has

been the Australian Council of State School Organisations. The council’s chief executive, Dianne Giblin, says the main reason for her organisation’s keen interest and support, is to ensure that school curricula are able to properly represent and reflect diversity across the Australian community.

“Not only do we need to give a window into sexuality and gender issues for all young people but particularly for young people who are gender diverse,” she says. “The diversity of sexuality in our community needs to be mirrored in our curriculum, so all young people have that broader perspective. It’s also needed for the mental health and wellbeing of our young people who may be transgender or

same sex attracted. That needs to be reflected so that they feel comfortable about who they are.”

“THE DIVERSITY OF SEXUALITY IN OUR COMMUNITY NEEDS TO BE MIRRORED IN OUR CURRICULUM.”

MORAL CODE

“We are delving more deeply into the reasons why parents might support [particular classroom] inclusions and

reasons why parents might be opposed to them,” Ullman says. “This is really intertwined with people’s sense of morals and values and their code of ethics. We’re trying to take something really complex and distil it down into a measurable set of items.”

This sort of information will also help teachers better navigate what is for many of them a potential minefield. “Teachers themselves are very uncertain about what they can actually say in the classroom; what might or might not get them into ‘trouble,’” Ferfolja says. “So, we really do need to know and, whatever the outcomes actually are, use them to inform policy and curriculum and syllabus documents, so teachers have some sort of guidance.”

RESEARCH FOR A BETTER FUTURE

KYLIE BUDGE >>
Research Theme Fellow
- Urban Living Futures
and Society

SEBASTIAN PFAUTSCH
Research Theme Fellow -
Environment and Sustainability
>>

>>
LYN TIEU
Research Theme Fellow
- Education and Work

>>
**JENNIFER
MACRITCHIE**
Research Theme Fellow
- Health and Wellbeing

Western Sydney University Research Theme Fellows discuss their work's impact.

Dr Kylie Budge, a creative arts researcher, Dr Lyn Tieu, a linguist, Dr Jennifer MacRitchie, a cognitive scientist, and Dr Sebastian Pfautsch, a tree physiologist, are among Western Sydney University's best and brightest academics. Their work is helping to shape a greener, smarter, healthier, inclusive, and creative future. These researchers recently came together to share their thoughts on their work's potential for creating impact in the world.

FUTURE COMMUNICATORS

Linguistics wasn't at the front of Lyn Tieu's mind when she began her university studies, but she quickly became fascinated by what the scientific study of language could reveal about society. Her work focuses on how children acquire meaning, and how they interpret a particular feature of language called linguistic inferences — the messages we sometimes don't even realise we're conveying through our choice of words and phrasing.

For example, the sentence 'girls are as good as boys at maths' seems to be an equitable statement. But Tieu, Research Theme Fellow in Education and Work, says some studies have shown that the implicit inference that comes from the way that statement is ordered is that girls are not as naturally gifted as boys are at maths. "So if teachers are saying things that convey additional messages

beyond what they're attempting to convey, that could have an impact on how children are interpreting the content that we're delivering," she says.

In seeking to understand how children interpret these linguistic inferences, Tieu is hoping her research can help "bridge that gap between our scientific understanding and children's actual educational experiences."

**"POLICY-
MAKERS AND
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INNOVATION
OCCURS IN
AN ABSTRACT
VACUUM."**

She also believes that linguistics has much to offer in terms of moving society towards greater equality, because it recognises that all languages are equal. "Prescriptive authorities will have you believe that there is some standard version of a language that you must attain, but the danger with that is that people then use that to create prejudices, to marginalise," she says. "In linguistics we learn that that's not true — different languages and dialects are equally important and valid, and can offer rich

insights into the mind. If linguistics could actually be taught earlier in the curriculum, not only would you get the scientific benefit of learning about scientific inquiry and hypothesis testing through linguistic studies, it could actually change attitudes."

FUTURE SPACES

Changing attitudes is something that Kylie Budge is working hard to do in the creative arts field; in particular, antagonism towards selfies and Instagram culture in museums.

"People like myself are arguing there is some kind of benefit to this Instagram culture because it's a platform where people can creatively express their experience, their engagement with the space, and with the artefacts that are on display," says Budge, Research Theme Fellow in Urban Living Futures and Society. "It's a way to upend the power balance that has perhaps existed for too long, where museums have told people what they should think, what they should look at and how they should think about certain exhibits or space."

"There are still a lot of people who won't go to a museum or gallery, and feel like that's not a place for them," says Budge. But she argues that allowing digital expression in these traditionally non-digital spaces can open these spaces up to new audiences who might otherwise not experience them.

(Left) © Anna Kucer; Photo of Jennifer MacRitchie taken by Monica Pronk. (Background) © oxygen/moment/Getty Images

Another area where attitudes are changing, but not always for the better, is around the concept of maker spaces. These communal spaces with shared equipment are popping up in cities around the world – and particularly in China, where they are viewed as hothouses of creativity and innovation.

There is growing awareness of the importance that these spaces have in encouraging innovation. “These are about participating, making, and contributing to society, rather than just consuming.”

“I think policy-makers and governments sometimes presume that somehow innovation occurs in an abstract vacuum,” Budge says. “Different support mechanisms and spaces need to be provided and created to allow innovation to flourish. It doesn’t just happen.”

Creativity and divergent thinking are nourished in maker spaces, but the spaces themselves need protection and support. Australia has a few maker spaces — one of the most well-known in Sydney is in light industrial estate land in Marrickville — but, many are under threat from development pressure. Budge hopes that her work will contribute towards greater understanding and appreciation of and access to these spaces in Australian cities, particularly outside metropolitan regions.

FUTURE CREATIVITY

Music is a familiar expression of creativity, but Dr Jennifer MacRitchie, Research Theme Fellow in Health and Wellbeing, believes it also could have significant health and wellbeing benefits, particularly in the elderly. Having studied electrical

engineering and music, she was working on motion capture technology to study the movement of pianists’ fingers when she became interested in the processes by which we acquire musical skills.

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“Your brain has to process symbols on a page if you’re reading music notation, decide on an action, a set of fine-motor commands that you use to manipulate the musical instrument, listen to the sound being produced, and then refine the next set of actions accordingly and you’re doing that at such minute time scales,” she says. “Playing a musical instrument is such a beneficial task for your brain, so we started wondering, why is it not something more people can have access to and benefit from.”

It has long been established that these skills have to be acquired early in life, but MacRitchie and her colleagues have recently published research results that show that the elderly

are just as capable of taking up music for the first time, and there are significant benefits in doing that.

But some older people can face additional challenges in learning music; for example, having restricted movement due to stroke or arthritis, or cognitive decline experienced as part of dementia. Practical and economic concerns to accessing a musical instrument may be enough to put off potential learners. This is another area where technology is breaking down barriers; MacRitchie gives the example of new musical interfaces that can be used on an iPad.

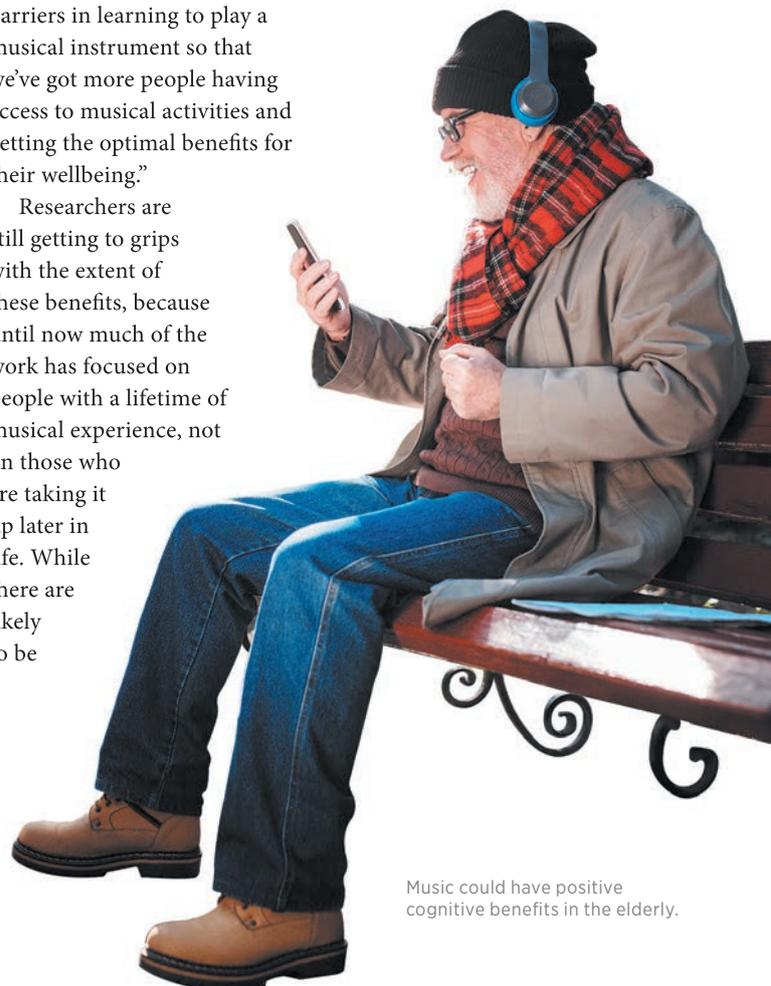
“A lot of my research is trying to devise ways to reduce some of those cognitive and physical barriers in learning to play a musical instrument so that we’ve got more people having access to musical activities and getting the optimal benefits for their wellbeing.”

Researchers are still getting to grips with the extent of these benefits, because until now much of the work has focused on people with a lifetime of musical experience, not on those who are taking it up later in life. While there are likely to be

physical and cognitive benefits, MacRitchie is also interested in the emotional and social benefits. “By doing a lot of group musical activities, you’re giving people avenues to share something together and identify as part of a group,” she says. “That helps reduce loneliness, for which older adults tend to be at risk.”

FUTURE CITIES

The elderly, immobile and very young are more vulnerable than most to the effects of heat, and that’s where Dr Sebastian Pfautsch’s research comes in. As Research Theme Fellow in Environment and Sustainability, he’s looking at how urban green



Music could have positive cognitive benefits in the elderly.



(Left) yacobchuk/Stock /Getty Images Plus; (Right) © Anna Kucera

Budge, Pfautsch and Tieu at Western's Parramatta South Campus.



(left to right) Kylie Budge, Sebastian Pfautsch, Lyn Tieu, and panel moderator Bianca Nogrady at the Research Theme Fellow Panel.

infrastructure could help address the growing issue of urban heat.

Urban green infrastructure describes anything green in an urban space; from the grass, shrubs and trees along roads and in parks, to living walls and rooftop gardens. It's increasingly recognised that urban green infrastructure plays a vital role in cooling the urban environment.

Pfautsch and colleagues deployed temperature data loggers across several western

Sydney councils, and found that a street with just 10% canopy cover experienced 12 days above 40°C in summer, while a street with 30% canopy cover had fewer than half that — experiencing just five days of summer above 40 degrees. “It’s a huge difference that not only impacts the wellbeing of people living in tree-lined streets but also impacts power consumption for air conditioning in their houses,” he says. “You have

add-on effects once you start increasing urban canopy, where you reduce heat and energy bills in households.”

But there are other benefits to increasing urban green infrastructure, Pfautsch says. “While green infrastructure helps make cities liveable, it also has benefits in biodiversity, liveability, public health, and even helps with reducing crime, and increasing property values,” he says.

The challenge is how, where and what to plant to best combat the urban heat island effect combined with the climate crisis that is already seeing temperatures in Australia’s major cities approach dangerous levels during summer months. But there’s only so much that urban green infrastructure can do.

“If western Sydney gets hit by a heatwave, trees won’t help cooling these very hot air masses, especially if they have no access to water that supports transpiration,” he says. “We have to look at other ways to cope with these new conditions of repeated heat waves and low rainfalls. We’re exploring how thermal benefits can be generated by different surface materials and colours used in urban design.”

Pfautsch hopes his work can help guide local and state governments towards creating more liveable cities in the face of a heating climate. “We urgently need to expand green infrastructure, but we have to be smart about it if we want maximum cooling benefits in times of rapid urbanisation and a heating climate.”

(Top) © Anna Kucera; (Bottom) © zetter/istock/Getty Images Plus





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