Charles Sturt University



ECV2024

Early Childhood Voices 2024 Conference Proceedings

Charles Sturt University
Early Childhood Interdisciplinary Research Group

Edited by
Sharynne McLeod, Carolyn Gregoric, Helen L. Blake,
Suzanne C. Hopf, Leanne Gibbs and Belinda Downey

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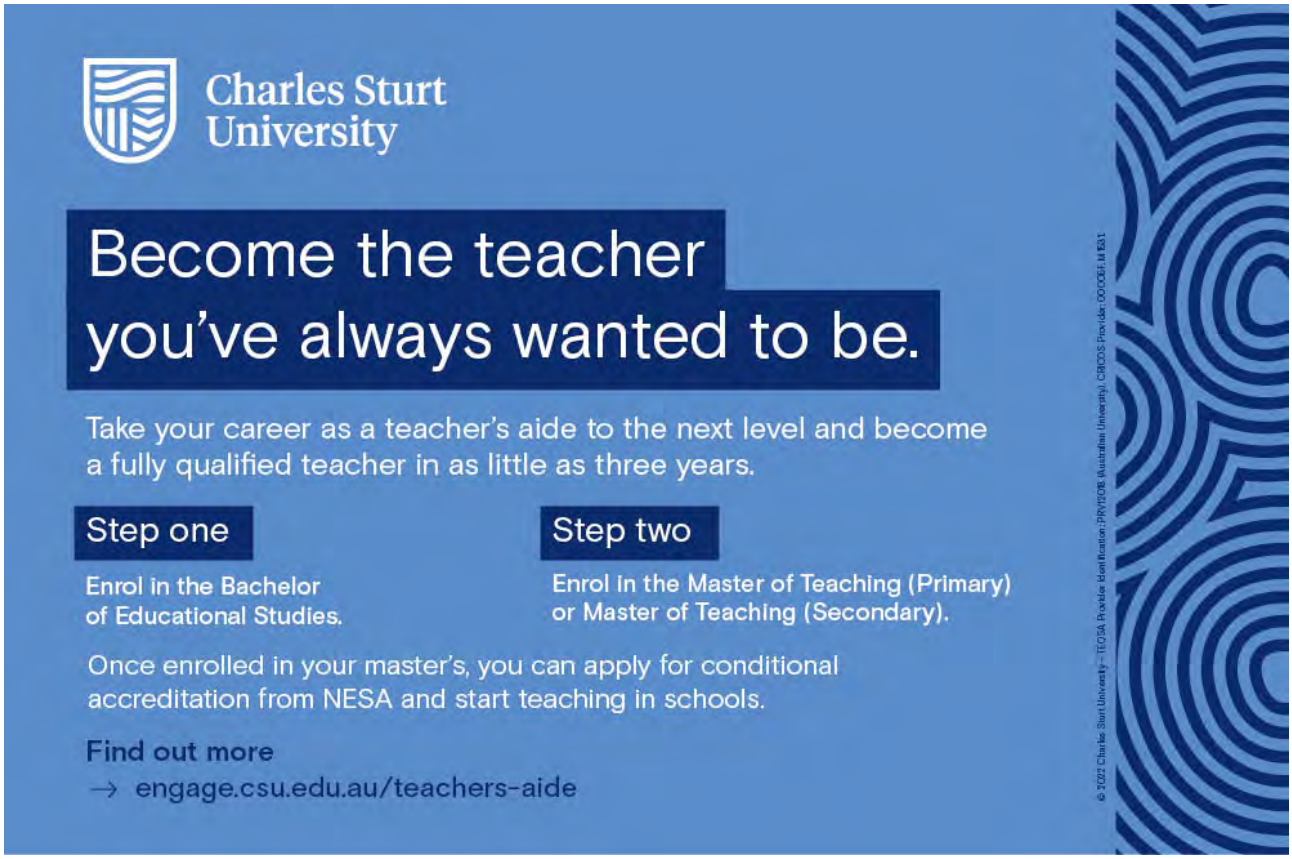
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https://earlychildhoodresearch.csu.domains/early-childhood-voices-conference-2024/

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Welcome

Welcome to the Early Childhood Voices 2024 Conference (ECV2024).

ECV2024 is an interdisciplinary international conference that provides a platform to share research about innovative methods, theories and partnerships with children, families and practitioners that supports social justice during early childhood or within the early childhood sector.

ECV2024 is organised by the Charles Sturt University Early Childhood Interdisciplinary Research Group and is an opportunity to present research in a virtual online space. ECV2024 showcases the work of four outstanding keynote presentations as well as 147 oral presentations in two streams.

- STREAM 1: Early childhood voices: International interdisciplinary research (ECV2024-401-472)
- STREAM 2: Multilingual children's speech development (ECV2024-500-575)
- STREAM 3: Children draw playing global online gallery

ECV2024 is held entirely online and asynchronously from 25–28 November 2024. There is no registration fee and no fees to present or view the presentations.

https://earlychildhoodresearch.csu.domains/early-childhood-voices-conference-2024/

At the time of finalising this book (mid-November, 2024) we had 1100 registrations from 56 countries/regions!

Papers are aligned with the United Nations' Sustainable Development Goals, especially SDG 3, SDG 4, SDG 8, SDG 10, and SDG 17.



Our hope is that this conference supports social justice during early childhood or within the early childhood sector across the world. Thank you to everyone who has been involved in organising, presenting, and participating in ECV2024. We particularly thank Professor Mark Evans, (Deputy Vice Chancellor – Research) who has championed our endeavours. Thank you everyone.

Distinguished Professor Sharynne McLeod and Dr Belinda Downey
Charles Sturt University Early Childhood Voices 2024 Conference Chairs

Dr Carolyn Gregoric
Charles Sturt University Early Childhood Voices 2024 Conference Secretary

Acknowledgment of Country

We acknowledge and pay our respects to the traditional custodians of all the lands on which we meet today. We also pay respect to Elders past, present and emerging, and extend that respect to other Indigenous people who are present.

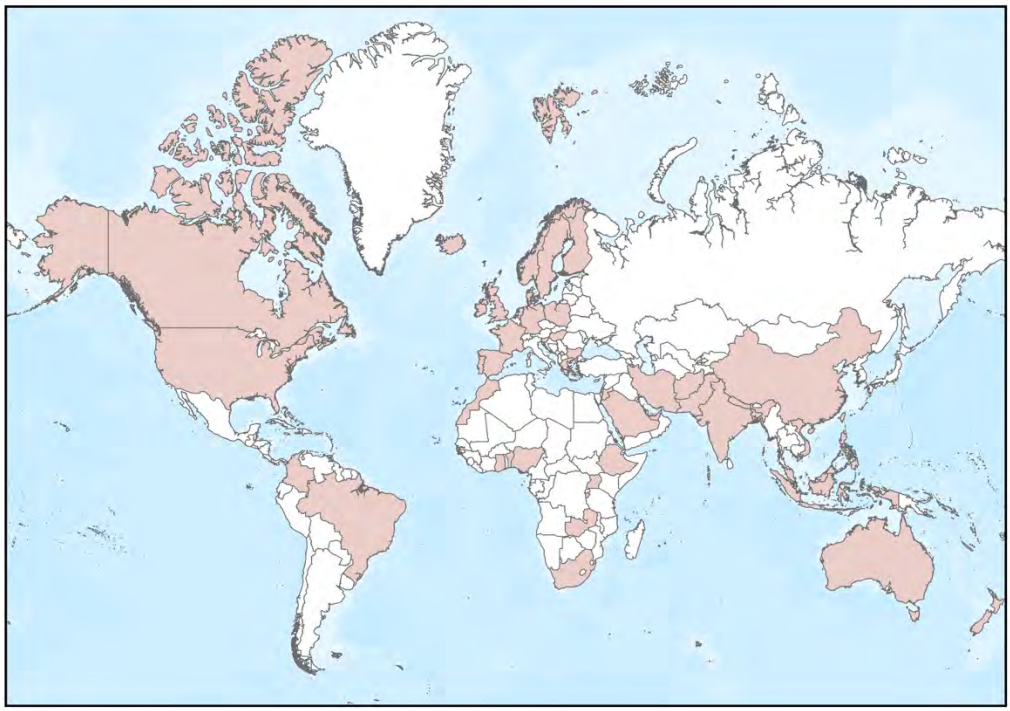
We acknowledge the Wiradjuri, Ngunawal, Gundungurra and Biripai (or Biripi) peoples of Australia, who are the traditional owners and custodians of the lands on which Charles Sturt University's campuses are located and pay respect to past, present and emerging Elders.

The children at Towri MACS Centre in Bathurst, NSW Australia have shared their acknowledgment of country with us and gave permission to use it for ECV2024: https://youtu.be/cEg2ga0VYus
Thank you Towri MACS children, families and staff.

Welcome to Everyone

The ECV2024 Conference Organising Committee are delighted to welcome our keynote speakers, presenters. At the time of finalising this book over 1100 people had registered from 56 countries/regions:

Afghanistan, Australia, Bangladesh, Benin, Brazil, Bulgaria, Burundi, Canada, China, Colombia, Denmark, Ethiopia, Fiji, Finland, France, Germany, Ghana, Greece, Hong Kong (SAR China), Hungary, Iceland, India, Indonesia, Iran, Ireland, Israel, Jordan, Kosovo, Kuwait, Malaysia, Malta, Morocco, Nepal, Netherlands, New Zealand, Nigeria, Norway, Pakistan, Philippines, Poland, Portugal, Qatar, Saudi Arabia, Scotland, Singapore, Slovenia, South Africa, Spain, Sweden, Uganda, United Arab Emirates, United Kingdom, United States Minor Outlying Islands, USA, Wales, Zambia



Map created by Simon McDonald, Spatial Analysis Network, Charles Sturt University
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Esri, USGS

Scientific Review

We invited researchers and postgraduate students from across the world to submit abstracts to share their work on innovations to improve the lives of children, families, and practitioners during early childhood or within the early childhood sector. Papers employing qualitative and/or quantitative methods, reviews (e.g., scoping and systematic reviews) and scholarly theoretical papers were welcomed. All abstracts have undergone peer review by the ECV2024 Scientific Committee. After review we accepted 147 oral presentations for ECV2024 and the revised abstracts are published in these proceedings. Most authors of accepted abstracts submitted presentations available online at the ECV2024 website (25–28 November 2024). Presenters agreed that their papers could remain online after the conference.



Khishigdelger (8 years) from Mongolia drew this picture for our Children Draw Playing Global Online Gallery and said “Playing with a dog fills my life with love and happiness”

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What are you playing? ID:
玩飛碟。玩個陣時會飛來飛去，但係有時會飛到上樹，同埋有時呢就會飛到要跑囉。其實係成日要跑嘅。飛得太犀利同埋有時我會飛得太大力，所以就要大家都要跑啦，飛得太犀利。

Where are you playing?
屋企樓下個嘅有個地方係有個場地，咁就我哋會喺嗰度玩囉。

Who are you playing with?
多數都係同媽媽玩

What are you talking about?
我叫媽媽要用多啲力，跟住媽媽會同我講："你唔好用咁大力囉。因為我大力，飛碟成日都會飛走咗，但追唔到。跟住有陣時如果我飛得太大力，飛碟就會飛咗去樹或者唔知邊度 。

How is playing good for the world?
會有啲嘢可以好好玩，同埋唔會成日都悶嘅，會覺得開心啲。其他人都開心啲，因為人哋鍾意見到其他人開心。

How do feel about playing?
☺ ☺ ☹ ? ☺ "Hah"

Language(s) spoken at home

Name	Cheng Ami	Age	8	Country	Hong Kong SAR China	Cantonese

Charles Sturt University | Children Draw Playing Global Online Gallery | Early Childhood Voices Conference 2024

Early Childhood Voices 2024 (ECV2024)

ECV2024 showcases the work of four outstanding keynote presentations, oral presentations, and children's drawings across three streams.

STREAM 1: Early childhood voices: International interdisciplinary research
Presentations ECV2024-401 to ECV2024-472
https://earlychildhoodresearch.csu.domains/early-childhood-voices-conference-2024/

You can learn about international interdisciplinary research by watching over 70 peer-reviewed presentations from across the world.

STREAM 2: Multilingual children's speech development
Presentations ECV2024-500 to ECV2024-575
https://www.csu.edu.au/research/multilingual-speech/speech-acquisition/multilingual-childrens-speech-development

You can discover how children learn to speak more than 45 home languages by watching over 70 presentations provided by international experts in each language. The experts explain where the language is spoken, the components of the language (vowels, consonants, tones), and the assessments and interventions available to support children learning to speak that language. Once you have listened to the presentations in English, you can listen to the same information presented in the language being spoken about. For example, you can hear how children learn to speak Kurdish in an English presentation and then listen again in Kurdish, or you can listen to a presentation about Greek in English and in Greek.

STREAM 3: Children draw playing global online gallery
https://earlychildhoodresearch.csu.domains/early-childhood-voices-conference-2024/children-draw-playing/

Children from across the world were invited to "draw (or create) a picture of you playing", then answer a few quick questions to describe their drawing.

More than 200 drawings, creations and photos from children across the world show us:

WHAT children do when they play
WHO children play with
WHERE children play
HOW children feel about playing
WHY children think playing is good for the world.

Making the most of ECV2024

ECV2024 is fully online, so you can view the presentations at any time during the conference (25–28 November 2024) in any order you choose. We have prepared this guide to help you make the most of your registration and attendance at ECV2024 – whether you are accessing the conference as part of a group or on your own.

Ideas for how to select which presentations to view

1. Listen to at least some of the keynote speakers, they are highly respected researchers and speakers – you will benefit from listening to any (and all) of them.
2. Choose a presentation according to a topic, keyword or SDG (Sustainable Development Goal).
3. Registered participants can join live sessions (Yarning Discussions) between 25–28 November.
4. Think about an issue you want to learn more about. Is there a presentation that might inform your understanding of or approach to that issue?
5. Think about how presentations could help inform your practice, your approach to documentation, supporting children's communication, or your service policies.
6. Look for names you recognise and you want to hear more about what they are working on now.
7. Look for research from a particular area or a particular country.
8. Think about what you could learn by watching a presentation from outside your immediate area – whether you come education, nursing, speech pathology, physiotherapy, psychology, libraries, or another area – you will find the others' perspectives fascinating and useful to your practice.
9. Choose something you know nothing about but that seems interesting – you never know what you might learn and what new possibilities it opens!

Ideas to prompt group discussion and personal reflection on the presentations

1. What new ideas did the presentation raise for you – about practice, theory or other approaches?
2. How might you alter your practice based on what you have learned?
3. What's your one 'gold nugget' from this presentation? What difference could this make to you?
4. What surprised you?
5. What didn't you understand? How could you find out more?
6. What did you learn about that could inform interprofessional work – especially between educators and other professionals?
7. What would you like to know more about? How could you follow up on that? Have a look at the websites of the presenters and any links that they provided.
8. What ideas or approaches could be applied to your work as a team?
9. What short-term goal/s could you develop arising from your learning from the presentation and conference as a whole?
10. Watch bilingual presentations in both languages. Did you gain other perspectives from watching both?

ECV2024 Keynote Speakers



1. Developing and retaining a workforce for high-quality early childhood education and care

Dr Elizabeth Shuey

Organisation for Economic Co-operation and Development



2. Neurodiversity-affirming approaches to play: Perspectives from research with autistic children and adults

Professor Jenny L. Gibson

University of Cambridge, United Kingdom



3. Giving voice to 'villages', listening to 'Country': It's time to unlock the power of 'place'

Professor Tony Dreise

Charles Sturt University, Australia



4. Embracing systems thinking to open conditions of possibility for the early childhood education workforce

Dr Tamara Cumming

Macquarie University, Australia

ECV2024 Keynote Speaker 1



Developing and retaining a workforce for high-quality early childhood education and care

Elizabeth Shuey, Organisation for Economic Co-operation and Development (elizabeth.shuey@oecd.org)

Biography: Elizabeth Shuey is a Policy Analyst in the Education and Skills Directorate at the Organisation for Economic Co-operation and Development (OECD) where she works on issues related to early childhood education and care. Previously, Elizabeth was a Society for Research in Child Development (SRCD) Policy Fellow within the U.S. Department of Health and Human Services. She has also worked at RTI International, the Federal Reserve Bank of Boston, and was a Doris Duke Fellow for the Promotion of Child Well-Being as well as a Learning Sciences Exchange (LSX) Fellow. She holds a Ph.D. from the Eliot-Pearson Department of Child Study and Human Development at Tufts University.

Background: Early childhood education and care (ECEC) can give a strong start to all children by providing equitable opportunities and experiences that support development. Despite growing ECEC enrolment and recognition of the value of high-quality ECEC, investments in this sector remain below public spending for later stages of education, with implications for ensuring quality environments.

ECEC staff – the teachers, pedagogues, assistants and other professionals who work directly with children daily – are at the core of ensuring that ECEC is of high quality for all children. These staff need strong initial preparation, opportunities to participate in ongoing professional development and supportive working conditions to engage in high-quality interactions with young children.

Method: This presentation will draw on ongoing policy research from the Organisation for Economic Co-operation and Development (OECD) as well as the OECD's Starting Strong Teaching and Learning Survey (TALIS Starting Strong). TALIS Starting Strong is an international survey of staff and leaders working in ECEC settings. In 2018, data were collected in nine countries.

Results: Education and training of ECEC staff is highly variable, both within and across countries. Across countries, ECEC staff satisfaction with their jobs is high, although large groups of staff do not feel valued by society. The main sources of work-related stress for ECEC staff are insufficient resources and work hours spent outside their time with children.

Conclusions: Governments can improve the quality of ECEC through investments in staff training and better recognition of and support for this important profession.

Implications for children and families: ECEC staff generally feel valued by the families with whom they work: You are a critical partner in helping to recognise and promote the status of the ECEC profession in society more broadly.

Implications for practitioners: You are the foundation of high-quality ECEC: Your daily interactions with children are essential for supporting their development, learning and well-being.

Key words: professionals' voices, education, international communities, policy, workforce issues

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 4: Quality Education

ECV2024 Keynote Speaker 2



Neurodiversity-affirming approaches to play: Perspectives from research with autistic children and adults

Jenny L. Gibson, University of Cambridge, United Kingdom

Biography: Jenny Gibson is Professor of Neurodiversity and Developmental Psychology at the University of Cambridge. She is a qualified Speech and Language Therapist and research psychologist. Since completing her PhD at the University of Manchester, Prof Gibson's research has focused on play and its links to social and communication development. Prof Gibson joined the University of Cambridge in 2014 and established the Play and Communication Lab, a team that investigates psycholinguistic development, flourishing and neurodiversity in children and young adults. Recently, Prof Gibson completed a secondment as Chief Scientist at the UK National Endowment for Science, Technology and the Arts (Nesta), investigating how multidisciplinary approaches can support innovation for social good.

Background: Play is a human right for all children, and an important aspect of child development and high-quality education. For neurodivergent children, however, play has often been considered from a deficit-based perspective, with interventions focusing on 'normalising' or suppressing authentic play behaviours.

Talk: I will present my team's latest research on play and the evidence supporting its inclusion as an essential part of a high-quality, child-centred education that promotes well-being for all. I will discuss disability related inequalities in access to play, focusing on autistic play and play for those with developmental language disorder (DLD). I will first present our emerging findings showing links between play and well-being, social development, and academic achievement in large cohort datasets. Following this, I will focus on our qualitative work on neurodivergent play and discuss how honouring different preferences in play can support inclusion for those with communication disabilities or differences. We will also discuss evidence gaps in this area from the perspective of practitioners and parents, and explore possibilities for future research.

Implications for children and families: Make time each day to provide authentic play opportunities for your child. Be curious, follow their interests, and have fun!

Implications for practitioners: Remember children have a human right to play and relax. Upholding equal rights to play for neurodivergent children will mean supporting play that might look different to the play of many other children, and that's OK.

Funding: LEGO Foundation, University of Cambridge.

Key words: autism, communication, developmental language disorder, early literacy, education, participatory methods, play, qualitative methods, quantitative methods, theory, well-being

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality

ECV2024 Keynote Speaker 3



Giving voice to 'villages', listening to 'Country': It's time to unlock the power of 'place'

Tony Dreise, Pro Vice-Chancellor First Nations,
Charles Sturt University, Australia (pvcfne@csu.edu.au)

Biography: Professor Tony Dreise (*drice*) is a proud member of the Guumilaroi and Euahlayi First Nations of north-west New South Wales and south-west Queensland. Professor Dreise has over 30 years' experience in education, public administration, and Indigenous policy. Internationally recognised as a First Nations leader in policy, evaluation, and research in education and Indigenous affairs, Tony has been at the forefront of several cutting-edge national reforms and regional innovations. He started his career as a teacher before moving into public policy (including obtaining an Executive Masters of Public Administration with the Australia and New Zealand School of Government) and later into research and tertiary education (including graduating with a PhD from the Australian National University). He served as the inaugural Professor of Indigenous Policy at ANU. Tony is a passionate advocate for lifelong and life-wide learning. He has volunteered as the Chair of the Indigenous Literacy Foundation and a Board Member of Adult Learning Australia. He currently serves as Pro Vice-Chancellor of First Nations Engagement at Charles Sturt University.

Abstract: With its deep origins in Africa, the wise proverb 'it takes a village to raise a child' is perhaps the most important tenet in thinking about positive change in early childhood development. Such an ethos has rung loud, long, and clear for First Nations peoples and cultures in Australia. Extended familial and communal approaches to child rearing and well-being in Indigenous communities are deeply rooted in traditional cultural practices. Children grow up in extended family, clan, and 'Country'. To illustrate, children in the Torres Strait will speak of having more than one 'mother'. While an 'Aunty' or an 'Uncle' in Aboriginal communities have a special and elevated status in raising children.

And yet familial models for 'growing up' children in post-colonial times have, by necessity, taken on new significance. The alarmingly high rates of child protection and incarceration among First Nations communities often mean that family or community members beyond parents, such as grandparents, are called upon to raise children. For instance, a study in 2017 found that an estimated 20 per cent of Indigenous children in Australia had at least one parent in prison at any time. This truly horrifying figure demonstrates that too many families are under pressure, which means children are too. AEDC and other data indicate that First Nations children are more likely to be developmentally vulnerable. Tough starts in life too often result in rough finishes.

These harsh realities highlight the critical importance of investing in young children to get them off to stronger starts. In Indigenous contexts, this means both access to universal opportunities (such as preschool) and the provision of unique services such as culturally responsive and joined-up early learning and holistic health and well-being services. Raising healthy and happy children who are ready to learn takes villages, which means policymakers need to invest wisely and heavily in place-based approaches. This means funding place strategies that support ECEC sector development, whole-child support infrastructure, First Nations voice in early childhood development and care, learning on 'Country', data sovereignty and collective impact thinking so

that parents, guardians, and providers alike are working from the same information, listening deeply to 'Country, and giving voice to the collective (institutional and informal) work in our shared villages.

Key words: First Nations, Indigenous, policy

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024 Keynote Speaker 4



Embracing systems thinking to open conditions of possibility for the early childhood education workforce

Tamara Cumming, Macquarie University, Australia
(tamara.cumming@mq.edu.au)

Biography: Tamara Cumming is a senior lecturer in the School of Education at Macquarie University, Australia. Tamara's research focuses on the well-being and sustainability of Australia's early childhood workforce, interprofessional practice, and the complexity of educators' practice and ways of making this complexity visible.

Abstract: The past five years have seen dramatic challenges for Australia's early childhood education workforce. At the same time, there are also signs that long-required structural changes are – at last – being seen as part of the responsibility of government rather than up to the mood of the market to decide. In this presentation, I discuss how systems thinking – the idea that all parts of a system are interconnected and interdependent – is evident in these moves, along with possibilities these moves have opened, and might continue to open. I also discuss ways that systems thinking challenges the emphasis of neo-liberal ideology on the individual, and the influence of dominant discourses and binary thinking, that can restrict rather than open possibilities. I will also draw on ways that systems thinking has influenced my own work on educators' well-being and the sustainability of the early childhood workforce.

Implications for children and families: Your experiences in early childhood education benefit from approaches that recognise how we are all connected to each other and the world, and why we need to consider and care about everyone.

Implications for practitioners: Thinking about how you, the children, their families and society are all interdependent helps everyone thrive now and into the future.

Key words: theory, well-being, workforce issues, sustainability

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 8: Decent Work and Economic Growth

ECV2024 Abstracts

No.	Presentation Title	Country	First Author
401	Children draw talking: Interdisciplinary insights into drawings from 200 children from 24 countries	Australia	McLeod
402	Teaching children a World of Words	Iceland	Crowe
403	Language use and exposure of preschool-aged Igbo-English bilingual children	Nigeria	Egenti
404	Inquire with children about their neighbourhood and school. Analysis of participatory methodologies with children.	Spain	Ceballos López
405	School Personnel Perspectives on an anti-bullying program: Gobi-Altai Province in Mongolia	Mongolia	Burnee
406	Transition to school in Australia: Whose voices are being heard?	Australia	Dealtry
407	“Absolutely cuddled out”: Building personal resources to build retention	Australia	Downey
408	Building foundations: Enhancing early childhood education through family-centric practices in Pakistan	Pakistan	Jumani
409	How good are parents at judging their children's speech intelligibility?	Israel	Paltiel-Gedalyovich
410	Children’s mathematical voices: Meanings, messages and memories.	Australia	Dwyer
411	Children on Australian university campuses: A rapid review of internal policies, guidelines, and procedures	Australia	Gregoric
412	Childhood Summit 2023: Strengthening community action through listening and supporting child voice	Australia	Branch
413	Indigenous children’s speech, language, and communication: Identifying and co-creating resources and services	Australia	McLeod
414	“Can I draw Peppa Pig?”: Using creative methods with parents to explore families’ everyday lives and interactions	UK	Holme
415	Adopting a strengths approach in early childhood education	Australia	Collins
416	Maximising the impact of speech and language therapy for children with speech sound disorder (MISLToe_SSD): Children and young people as patient and public involvement (PPI) members	UK	Burr
417	Voices and visions: Engaging children with childhood apraxia of speech in intervention research	Australia	Ireland
418	The index of phonetic complexity: Adaptation to Urdu	Hong Kong	Ambreen
419	The sound of silence: on the (a)typical nature of initial consonant omission in European Portuguese	Portugal	Castro

420	Characteristics of effective parent-mediated interventions for parents of children with neurodevelopmental disorders in rural areas	Australia	Cullenward
421	Early childhood educators talking about the strengths and needs of Aboriginal children during transition to school	Australia	Dealtry
422	Assessment at play: Championing the capacities of children and empowering the mathematical pedagogue	Australia	Grimmond
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455	Effectiveness of the ASD social communication group intervention in resource constraint context: Case study in Fiji	Fiji	Sewwandi
456	Understanding the needs of children from immigrant families when they serve as interpreters to develop a knowledge tool for healthcare providers	Canada	Shaikh
457	Integrating children's interests and educators'choices in teaching STEAM through play-based learning: A cultural-historical study	Australia	Sikder
458	Positive/successful community participation for children with communication support needs	Australia	Slaney
459	Revolutionising infant education: The benefits of group dynamics in early learning environments	Australia	Stapleton
460	The role of pre-service education in addressing barriers to nurses reporting child maltreatment	Australia	Stenson
461	Normalising partnership working between speech and language therapists and early childhood educators: What we learnt from listening to them	UK	Stringer
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463	Moral development in early years through religious education curriculum: A case study from a faith-based community	Pakistan	Surani
465	Kindergarten teachers' practices in addressing the encountered challenges of parents in teaching beginning reading skills during pandemic	Philippines	Tapadera
466	Phonological skills in Polish-speaking children with speech sound disorders: The diagnostic tool design	Poland	Trębacz-Ritter
467	Play-based early childhood science education: A scoping review	Australia	Zou
468	What does neurodiversity affirming practice look like in early childhood?	Australia	Verdon
469	Diagnostic accuracy of three speech productions tasks of childhood apraxia of speech in Cantonese-speaking preschool children	Hong Kong	Wong
470	Design and validation of a multisyllabic words test in preschool Persian-speaking children	Iran	Zarifian

471	Building The Treehouse: A physical and virtual children's research environment co-designed with children, colleagues, community	Australia	McLeod
472	Personal narrative coherence of school-age autistic children in response to the Global TALES protocol	Australia	Westerveld
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502	Children's speech development: Akan	Canada	Amoako
503	Children's speech development: Arabic (Egyptian)	Egypt	Elsaad
504	Children's speech development: Arabic (Kuwaiti)	Kuwait	Ayyad
505	Children's speech development: Arabic (Lebanese)	UK	Khattab
506	Children's speech development: Azerbaijani/Azeri	Iran	Zarifian
507	Children's speech development: Bulgarian	Bulgaria	Ignatova
508	Children's speech development: Cantonese	Hong Kong	To
509	Children's speech development: Danish	Denmark	Clausen
510	Children's speech development: Dutch	The Netherlands	Van Doornik
511	Children's speech development: English (African American)	USA	Stockman
512	Children's speech development: English (Appalachian)	USA	Flipson
513	Children's speech development: English (Australian)	Australia	McLeod
514	Children's speech development: English (Cajun)	USA	Chung
515	Children's speech development: English (Canadian)	Canada	Rvachew
516	Children's speech development: English (English)	UK	Mayr
517	Children's speech development: English (Fiji)	Australia	McAlister
518	Children's speech development: English (General American)	USA	Farquharson
519	Children's speech development: English (Irish)	UK	Rahilly
520	Children's speech development: English (New Zealand)	New Zealand	Macrae
521	Children's speech development: English (Scottish)	Scotland	Scobbie
522	Children's speech development: English (South African)	Australia	Mahura
523	Children's speech development: English + Cantonese	Hong Kong	To
524	Children's speech development: English + French	Canada	MacLeod
525	Children's speech development: English + Greek	USA	Babatsouli
526	Children's speech development: English + Spanish	USA	Goldstein
527	Children's speech development: English + Vietnamese	Australia	Margetson
528	Children's speech development: Finnish	Finland	Kunnari
529	Children's speech development: Flemish	Belgium	Alighieri
530	Children's speech development: French (Canadian)	Canada	MacLeod
531	Children's speech development: French (France)	Portugal	Almeida
532	Children's speech development: French (Swiss)	Switzerland	Kehoe

533	Children's speech development: German	Germany	Fox-Boyer
534	Children's speech development: Greek (Cypriot)	Cyprus	Petinou
535	Children's speech development: Greek (Standard)	Greece	Okalidou
536	Children's speech development: Hebrew (Israeli)	Israel	Ben-David
537	Children's speech development: Hungarian	Hungary	Zajdó
538	Children's speech development: Icelandic	Iceland	Másdóttir
539	Children's speech development: Irish	Ireland	O'Toole
540	Children's speech development: Italian	UK	Lavaggi
541	Children's speech development: Jamaican Creole	Canada	Washington
542	Children's speech development: Japanese	Japan	Ota
543	Children's speech development: Kurdish	Iran	Fatemi-Syadar
544	Children's speech development: Laki	Iran	Ahmadi
545	Children's speech development: Maltese	Malta	Grech
546	Children's speech development: Mandarin (Putonghua)	Canada	Zhao
547	Children's speech development: Māori	New Zealand	Ballard
548	Children's speech development: Norwegian	Norway	Kristoffersen
549	Children's speech development: Persian/Farsi	Iran	Zarifian
550	Children's speech development: Polish	Poland	Zydorowicz
551	Children's speech development: Portuguese (Brazilian)	Brazil	Ceron
552	Children's speech development: Portuguese (European)	Portugal	Freitas
553	Children's speech development: Samoan	New Zealand	Ballard
554	Children's speech development: Sesotho	Australia	Demuth
555	Children's speech development: Setswana	Australia	Mahura
556	Children's speech development: Slovak	Slovakia	Buntová
557	Children's speech development: Slovenian	Slovenia	Ozbič
558	Children's speech development: Spanish (Andalusian)	Spain	Ávila
559	Children's speech development: Spanish (Castilian)	Spain	Diez-Itza
560	Children's speech development: Spanish (Chilean)	Chile	Herrera
561	Children's speech development: Spanish (Mexican)	Mexico	Chávez-Peón
562	Children's speech development: Spanish (Peruvian)	USA	Sommer
563	Children's speech development: Swedish	Sweden	Strömbergsson
564	Children's speech development: Tagalog/Filipino	Canada	Bondoc
565	Children's speech development: Tamil	India	Venkatesh
566	Children's speech development: Thai	USA	Maroonroge
567	Children's speech development: Tok Pisin	Australia	Boer
568	Children's speech development: Turkish	USA	Zengin-Bolatkale
569	Children's speech development: Urdu	Hong Kong	Ambreen
570	Children's speech development: Vietnamese	Vietnam	Phạm
571	Children's speech development: Warlpiri	Australia	O'Shannessy

572	Children's speech development: Welsh	Wales	Mayr
573	Children's speech development: Xhosa	Australia	Mahura
574	Children's speech development: Zapotec	Canada	Stemberger
575	Children's speech development: Zulu	Australia	Mahura



Tori (5 years) from Australia drew this picture for our Children Draw Playing Global Online Gallery and said that she was "Flying kites, we're both flying different kites. One is a sunflower and one is a love heart…we can touch the clouds with our kites"

ECV2024 Topics

Topic	Presentation no.
Children's voices	401, 404, 405, 406, 408, 410, 411, 412, 415, 416, 418, 419, 422, 425, 426, 428, 429, 432, 433, 435, 436, 437, 441, 445, 446, 449, 451, 453, 454, 456, 459, 460, 467, 468, 469, 471, 472
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Indigenous voices	403, 413, 418, 421
Communication	401, 402, 409, 412, 413, 414, 416, 418, 419, 428, 432, 433, 434, 435, 437, 439, 440, 444, 445, 446, 448, 451, 454, 455, 456, 458, 459, 460, 468, 470, 471, 472, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575
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Rural communities	405, 406, 407, 413, 420, 440, 442, 454, 459, 471
Vulnerable communities	402, 406, 413, 417, 444, 456, 460, 462, 468, 471, 472
Well-being	405, 407, 408, 412, 418, 429, 435, 436, 438, 440, 444, 445, 454, 456, 460
Workforce	407, 413, 442, 460



Oli (7 years) from the Philippines drew this picture for our Children Draw Playing Global Online Gallery and said “I am playing on the swing and my cousin is playing in the slide.
We’re talking about how much we’re having fun”
Why is playing good for the world?
“Playing is sometimes a form of exercise. Playing makes kids happy”

ECV2024 and the United Nations' Sustainable Development Goals (SDGs)

SDG	Goal	Presentation no.
SDG 1	No poverty	405, 432, 445
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SDG 4	Quality education	401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 413, 414, 415, 419, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 436, 438, 440, 441, 442, 444, 445, 446, 447, 448, 449, 450, 452, 453, 454, 457, 459, 461, 462, 463, 465, 466, 467, 468, 469, 470, 471, 472, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575
SDG 5	Gender equality	450, 454, 457
SDG 8	Decent work and economic growth	405, 407, 411, 413
SDG 9	Industry, innovation and infrastructure	438, 441

SDG 10	Reduced inequalities	401, 402, 405, 406, 409, 413, 416, 420, 421, 424, 428, 431, 433, 434, 435, 438, 439, 440, 444, 445, 446, 447, 450, 451, 454, 455, 456, 457, 458, 459, 460, 461, 468, 471, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575
SDG 11	Sustainable cities and communities	412, 419, 442, 453, 454, 459
SDG 14	Life below water	402
SDG 15	Life on land	402
SDG 16	Peace, justice and strong institutions	405, 425, 429, 438, 447, 449, 450, 454, 456
SDG 17	Partnerships for the goals	401, 405, 406, 409, 411, 412, 413, 416, 418, 419, 421, 428, 433, 437, 438, 440, 441, 444, 449, 451, 457, 461, 462, 467, 471, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575



What are you playing? ID: 48560027
I am on a trampoline.

Where are you playing?
At my mum's house on the trampoline.

Who are you playing with?
I am with my sister (I am the boy)

What are you talking about?
Nothing

How is playing good for the world?
It makes kids active.

How do feel about playing?
Super happy

Name: Olly | Age: 10 | Country: Australia | Language(s) spoken at home: English

Charles Sturt University | Children Draw Playing Global Online Gallery | Early Childhood Voices Conference 2024

ECV2024-401

Children draw talking: Interdisciplinary insights into drawings from 200 children from 24 countries

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Background: Articles 12 and 13 of the Convention on the Rights of the Child (CRC; United Nations 1989) state children have the “freedom to seek, receive and impart information and ideas”. Drawing enables children to have open-ended expression; drawing can be used as a tool to help understand young children’s feelings and insights about talking.

Aim: The aim of this research was to consider how children draw themselves talking and to analyse the drawings using an interdisciplinary approach.

Method: During the 2022 Early Childhood Voices Conference (ECV2022), children were invited to submit a drawing of themselves talking to someone using the Early Childhood Voices Drawing Protocol. Drawings and explanations were submitted from 200 children from 24 countries, and after children gave assent and parents gave consent, these were uploaded to the Children Draw Talking Global Online Gallery https://earlychildhoodresearch.csu.domains/early-childhood-voices-conference-2022/children-draw-talking-gallery-1-the-world/. The participants were aged 2–12 years, spoke 23 different languages, and 28.5% of caregivers reported concerns about their children’s talking. Charles Sturt University Human Research Ethics Committee gave approval to analyse the drawings. The interdisciplinary research team consisted of 16 researchers who analysed the drawings using the following frameworks: descriptive, developmental, focal point, meaning making, and systemic functional linguistics transitivity analysis.

Results:

***Descriptive*.** Most participants (79.0%) reported they felt happy about talking. Most children (84.5%) drew themselves talking to at least one conversational partner including friends, mothers, fathers, animals, siblings, other family members, teachers, and a speech-language pathologist.

Developmental. A strong positive correlation was observed between the participants' age and their ability to draw a human figure.

Focal Point. Focal points included: body parts (head, mouth, eyes, ears, arms/hands) and facial expressions (30.2%); talking and listening (e.g., words, speech bubbles, open mouths) (53.3%); proximity to others (69.8%); relationships and connections (89.3%); and positivity and vibrancy (72.8%).

Meaning Making. The cultural-historical meaning making analysis identified 10 themes: relationships, places, actions, natural elements, human-made elements, cultural experiences, logical thinking, emotion, imagination, and concepts.

Systemic Functional Linguistics Transitivity Analysis. The systemic functional linguistics transitivity analysis identified 71 processes, 134 participants, and 48 circumstances across 50 drawings.

Conclusions: Children across the world use drawing to communicate who they talk to (friends, family, animals, professionals), when and where they talk (outside, at home), what they talk about (toys, animals, friends, family), and how they feel about talking (happy). Interdisciplinary insights enhance professionals' understanding of children's communication and can inform assessment and intervention practices.

Implications for children and families: Children have a lot of interesting things to say. Sometimes children can "talk" to adults by drawing them a picture instead of talking.

Implications for practitioners: The Early Childhood Voices Drawing Protocol can be used to invite children to draw themselves talking, providing a catalyst for further discussion with the children, their family, and others about their lives.

Funding: This research was undertaken by members of the Early Childhood Interdisciplinary Research Group funded by the Charles Sturt University Sturt Scheme.

Key words: children's voices, innovations, communication, international communities, qualitative methods, quantitative methods

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-402

Teaching children a World of Words

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Background: Many children in early childhood programs speak different language/s to their educators. To learn this new language, these children need sufficient exposure to the new language through high-quality language models in meaningful contexts in their daily lives. In Iceland, such children have been shown to experience challenges learning Icelandic effectively during their preschool years and beyond. These difficulties with the language of education can have long-term negative consequences for children's language, literacy, academic, social, and vocational outcomes. This paper will describe how an evidence-based intervention that was developed for English-language learners (*World of Words*) was culturally and linguistically adapted to support preschool-aged children's learning of Icelandic in Iceland (*Orðaheimurinn*).

Aim: Often, interventions are developed and tested in one context and then used in different contexts where they may not be appropriate or maintain their therapeutic effect. This paper aims to highlight the importance of using interventions that are culturally responsive. The iterative process of cultural and linguistic adaptation of the American-English intervention World of Words to the Icelandic intervention Orðaheimurinn is presented to illustrate this.

Method: The four-step method used will be described. Firstly, document translation, theme/unit adaptation, target vocabulary selection, and educator material development will be described. Secondly, Orðaheimurinn was examined in a feasibility study with materials and procedures modified following feedback from participants. Thirdly, Orðaheimurinn was examined in a cluster randomised-controlled trial involving 200 children at 15 preschools. Finally, further adaptions were made to the materials and procedures, based on studies of fidelity and social validity. Research involving participants was approved by Visindasidanefnd [Icelandic Scientific Ethics Committee] and all participants provided consent.

Results: Using an iterative process has led to *Orðheimurinn* being an intervention that is culturally responsive to the Icelandic context and is also socially valid and evidence-based.

Conclusions: Methods for adapting interventions in culturally-responsive ways are key to implementing evidence-based interventions in new contexts.

Implications for children and families: You will learn about how multilingual children's language development can be supported in early childhood education settings in ways that are culturally and linguistically responsive.

Implications for practitioners: You will gain insight into the things you need to think about when implementing evidence-based interventions in a context that is different to the context in which it was developed and tested.

Funding: Funding for this study was provided by the Education Research Fund [Mentarannsóknasiódur], grant number 219261-051, to Kathryn Crowe, Jóhanna T. Einarsdóttir, and Thora Másdóttir. Development of study materials was supported by Rannís Nýsköpunarsjóður Námsmanna grants [219779-1101, 2210660-1101] to Svava Heiðarsdóttir and Sædís Dúadóttir Landmark, University of Iceland. Styrktarsjóðs Áslaugar Hafliðadóttur grants to Svava Heiðarsdóttir, Sædís Dúadóttir Landmark, Jóhanna T. Einarsdóttir, and Þóra Másdóttir, and a Þróunarsjóður Námsgagna grant [222540-5011] to Sædís Dúadóttir Landmark and Svava Heiðarsdóttir. Both World of Words and Orðaheimurinn are freely available and there is no financial benefit to the authors.

Key words: innovations, communication, early literacy, education, vulnerable communities, international communities, quantitative methods, multilingual, Icelandic, language, vocabulary, shared reading, intervention, early intervention, early childhood education

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 14: Life Below Water
- SDG 15: Life on Land

ECV2024-403

Language use and exposure of preschool-aged Igbo-English bilingual children

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Background: Children who grow up learning more than one language can build ties across communities and feel connected to their cultures. Nigeria, being a multilingual nation, designates English as its official language – used in government, education, commerce, and communication. The dominance and impact of the official language on indigenous languages, such as the Igbo language, is of great concern to Igbo scholars and stakeholders, who consistently express their worries about the negligence and lack of transmission of the language. While some policies direct the teaching of Igbo in the early years, these are not effectively implemented. This neglect and negative attitudes towards Igbo have a profound influence on communication choices made by parents in the home, classroom, and social settings. The situation is even more worrisome when children are not exposed to Igbo during their early education.

Aim: This study aims to describe the language experience of preschool-aged Igbo-English bilingual children 2–5 years old. Specifically, the study identifies what language(s) an Igbo child understands or speaks and determines if Igbo parents engage and interact with their children in their indigenous language.

Method: Data was gathered from Awka South local government area of Anambra State, involving 40 families. Parents who have preschool-aged children who are in their early childhood care development were purposively selected from the Awka metropolis. The study adapted the Canadian Questionnaire of use and exposure of bilingual preschool-aged children to the socio-cultural context of the study. The data was analysed based on the language exposure and proficiency of the children in Igbo and English, in addition to gaining insights into the parents' perspectives, aspirations, and prospects for language exposure and use. Ethics approval for the study was received from the Social Sciences and Humanities Research Ethics Board (HaSSREB), Nnamdi Azikiwe University, Awka, in addition to attaching a letter of consent to the questionnaire.

Results: Preliminary findings indicate that English language has a much greater impact on language use than the Igbo language due to the amount of exposure to the language. The study also reveals the dominant use of English in preschool, inconsistent language use at home, dominant English language use in the community, the lack of early exposure to Igbo, and the lack of determination of parents, as part of the factors militating against the learning of Igbo language.

Conclusions: The family and community as agents of socialisation have a crucial and/or pivotal role to play in language transmission, preservation and use. This implies that all stakeholders, including parents, teachers, and the government, have a crucial role in promoting early language literacy. The research will contribute to raising the consciousness of parents and teachers about the transmission of the language to children through exposure, improving poor attitudes towards speaking the indigenous language, and increasing public awareness of the importance of early language acquisition.

Implications for children and families: Ensuring the survival of Igbo begins at home. By speaking Igbo with your child, you are not only supporting the language but also helping your child maintain connections with their culture and have the benefits of multilingual language development.

Implications for practitioners: As a practitioner, you have an important role to play in supporting the learning of Igbo and English in young children. You can emphasise the importance of growing up multilingual to help parents feel more confident in sharing their languages with their children.

Key words: families' voices, Indigenous voices, early literacy, education, government, communication

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 4: Quality Education

ECV2024-404

Inquiring with children about their neighbourhood and school: Analysis of participatory methodologies with children

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Background: This study is part of a larger research project that aims to develop a training proposal for a practicum with early childhood and primary future teachers based on practitioner inquiry and listening to children. For this purpose, starting from participatory methodologies of listening to children, future teachers inquire about topics such as school management, organisational aspects (time, space, etc.) or their own teaching role.

Aim: The aim of this paper is to analyse the methodologies and inquiry strategies used with children.

Method: Five early childhood and primary schools in Cantabria (Spain) have participated. Specifically, 25 classrooms with children aged 2–12 years. The inquiry strategies used included: "From my window" and "My favourite place in the neighbourhood is…", which combines drawing and informal conversation. "What does a headteacher do?" or "What should a teacher be like?" are inquiry strategies that are based on semi-structured interviews. The researchers followed EECERA's code of ethics for this study.

Results: The inquiry strategies deployed have allowed listening to children about key issues in their lives. Strategies based on dialogue presented difficulties with children with differing oral language development. Strategies had to be presented in combination for best results.

Conclusions: Listening strategies require a process of adaptation to children and cannot be considered participatory because of their presence. Teachers must be sensitive in the process of interpreting children's ideas to avoid accommodating information.

Implications for children and families: This project has allowed you to experience article 12 of the Convention on the Rights of the Child. You were listened to and engaged in a genuine dialogue with the teachers. This enhances your sense of relevance to school.

Implications for practitioners: You have become guarantors of children's rights, especially article 12. You had experimented and reflected on different strategies of authentic listening to children. Finally, it has been a reflective and formative process in action based on the enquiry professional approach.

Key words: children's voices, qualitative methods, participatory strategies, practicum

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 4: Quality Education

ECV2024-405

School personnel perspectives on an anti-bullying program: Gobi-Altai Province in Mongolia

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Background: Every child has the right to access education in a safe environment. Bullying can have significant consequences, affecting physical health, social well-being, academic performance, and even increasing the risk of suicidal thoughts. Although there is no data on rates of bullying in Mongolia, the number of Mongolian adolescents attempting suicide has recently increased to 32.1% (Badarch et al., 2022). Crafting an effective anti-bullying program for Mongolian schools involves overcoming the lack of evidence-based research, economic burdens, and cultural pushback.

Aim: To understand how anti-bullying and associated interventions are perceived by both primary and middle school teachers in the Gobi-Altai province, Mongolia, in response to an evidence-based anti-bullying program already in use in other countries.

Method: In this qualitative narrative study, a focus group was conducted with four primary and middle school teachers from a provincial school to discuss the feasibility of adapting the P.E.A.C.E. Pack anti-bullying program for Mongolian schools. Ethics approval was obtained (HREC 6818). The P.E.A.C.E. Pack was chosen due to its ready-packaged nature, cross-cultural trials, and cost-effectiveness. The focus group discussion was recorded, transcribed, and thematically analysed.

Results: Awareness is crucial in addressing bullying, as children's lack of awareness can contribute to involvement in bullying. Discussing these topics during primary and middle school appears to be more effective due to children's willingness to report bullying incidents and receptiveness to teachers' guidance. Given its high prevalence, cyberbullying should be widely taught. Enhancing self-concept and fostering optimism is crucial for children from lower socio-economic backgrounds, which is a significant factor associated with bullying. Teachers view their involvement in combating bullying as an essential part of their duties for children's well-being. To ensure effective program delivery, it is essential to differentiate between primary and middle school contexts, considering time availability and age-appropriate teaching strategies. The further success of a program is associated with both parental involvement and the implementation of school-wide programs.

Conclusion: The findings from this qualitative narrative study suggest the proposed program could effectively be used to address bullying in Mongolia. Schools in Mongolia encounter challenges in selecting suitable anti-bullying programs, such as economic constraints and cultural resistance. Considering these factors, trialling a ready-packaged program like the P.E.A.C.E. Pack could be a good compromise.

Implications for children and families: If you have any concerns related to bullying, please share them with adults around you, including parents and teachers. Together, we can work towards a zero-bullying environment.

Implications for practitioners: The P.E.A.C.E. Pack anti-bullying program could be adaptable in the Mongolian school context to mitigate bullying.

Key words: children's voices, families' voices, professionals' voices, education, anti-bullying program, health, policy, qualitative methods, regional/rural communities, well-being

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 1: No Poverty
- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 8: Decent Work and Economic Growth
- SDG 10: Reduced Inequality
- SDG 16: Peace and Justice Strong Institutions
- SDG 17: Partnerships to Achieve the Goals

ECV2024-406

Transition to school in Australia: Whose voices are being heard?

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Background: In Australia, transition to school has been the subject of extensive research commissioned by federal and state governments, universities, and philanthropic organisations. Collectively, this body of research has made a significant and sustained contribution to theoretical, conceptual, and practical understandings of transition to school nationally and internationally.

Aim: Our aim was to tell the story of Australian transition to school research, policy, and practice during the first quarter of the 21st century.

Method: Database and internet searches were undertaken to obtain published Australian research from journals, books and book chapters as well as policy and professional documents relating to the transition to school.

Results: We will present the dominant themes evident in the transition to school literature, which indicate both progression and tensions in relation to questions of what matters and to whom and whose voices are being heard and/or valued, in relation to the transition to school.

Conclusions: To conclude, we will discuss the influence of children's, families', and educators' voices on the transition to school in Australia and propose whose voices are yet to be rendered visible in and through the transition to school research, programs, and policy.

Implications for children and families: You will learn about how and why children's and families' voices have contributed to understandings of transitions to school in Australia and how we can better ensure all children and families can contribute their voices in the future.

Implications for practitioners: You will learn about how research, policy, and practice have come together to shape collective understandings about successful transitions to school in Australia, but also how we can be better placed to be more inclusive and responsive in the future.

Key words: transition to school, children's voices, families' voices, professionals' voices, research, education, policy, regional/rural communities, review, theory, vulnerable communities

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-407

“Absolutely cuddled out”: Building personal resources to build retention

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Background: A key determinant affecting early childhood educators’ job satisfaction has been identified as the physical and emotional intensity of the educators’ role. However, the availability of personal job resources, such as cognitive, emotional or social resources, can positively influence educators’ engagement in their work role and interactions with children.

Aim: The aim of this research was to investigate what enabled and constrained early childhood workforce retention, and particularly what educators found supported their job satisfaction.

Method: A constructivist grounded theory methodology framed the research. Participants were 34 early childhood educators working across eight workplaces in the Northern Territory of Australia. Focus group interviews and individual interviews were undertaken at a time and location that the participants chose. A constant comparative data analysis method was used to generate categories that were reviewed and refined until there was an overarching core category and two properties. Ethics approval was gained from Charles Sturt University, and the early childhood educators provided consent to participate.

Results: The overarching core category was *educators adjust their practices or accommodate educational values* and the two properties within this core category were:

1. Hopeful: Educators stated they felt valued and supported by their leader and/or colleagues which led to the growth of personal job resources through the development of educator relationships. For example, Maree noted that some days her role as an educator left her feeling “absolutely cuddled out” and emotionally drained but her personal job resources supported her to find motivation in her colleagues and leaders. Participants identified positive workplace relationships with their colleagues as key to providing motivation and support through day-to-day challenges.

2. Struggling: Educators commented that they felt unvalued or unsupported by their leader and/or colleagues which led to increased stress, communication breakdown and poor job satisfaction. These types of communication breakdowns and stress concerns were most prevalent in workplaces that were identified by the participants as having a negative workplace culture, or poor collegial relationships.

Conclusions: High stress work environments, with high job demands but low job resources, can lead to low educator well-being, low quality care and high staff turnover and attrition within the early childhood sector. The development of supportive and collegial relationships assisted in creating more engaging and positive working conditions, higher quality care for the children and increased job satisfaction for educators.

Implications for children and families: When your educators know what supports they can access to assist them in their role, they are happier in their job and will be better educators for you.

Implications for practitioners: Your job as an educator can be physically and emotionally intense but when you know what personal job resources can support you and positively influence your engagement in your role you will feel more satisfied in your job.

Key words: professionals' voices, early childhood educators, regional/rural communities, well-being, workforce issues, retention

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 4: Quality Education
- SDG 8: Decent Work and Economic Growth

ECV2024-408

Building foundations: Enhancing early childhood education through family-centric practices in Pakistan

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Background: Early childhood education (ECE) is crucial for children's holistic development, encompassing physical, emotional, cognitive, and social growth. In Pakistan, while ECE is gaining recognition, there remains a significant gap in programs for children aged 0 to 3, particularly influenced by socio-economic and cultural factors. The Rupani Foundation addresses these gaps through its family-centred early childhood development (ECD) model, promoting awareness and services.

Aim: The study aims to evaluate the effectiveness of the Rupani Foundation's family-centric ECD model, examining the associated challenges and opportunities.

Method: The study was initiated as an organisational development project, where I, as an employee, took consent from the organisational head and the research participants through a formal email/letter. A case study method was used to evaluate the Rupani Foundation's ECD model. Random sampling selected participants from the program, and data collection included semi-structured interviews with parents, educators, and administrators. Observations of ECD activities and document reviews (lesson plans, monitoring and evaluation reports) were also conducted, ensuring a comprehensive understanding of the model's effectiveness.

Results: Children showed improvements in language, social skills, and problem-solving. Parental involvement increased both in school and home-based learning activities, with parents gaining a deeper understanding of early childhood principles. The model enabled early detection of developmental issues, such as speech delays and learning disorders, allowing for timely support and correction. This program fostered stronger community bonds. However, challenges included trust issues, cultural misconceptions, and program sustainability.

Conclusions: The Rupani Foundation's model enhanced child development and parental engagement but faced challenges, including community trust and literacy. Success stories should be highlighted to raise awareness, and policymakers should mandate early childhood education across schools.

Implications for Children and Families: Being parents, you will learn how family involvement nurtures early child development.

Implications for Practitioners: You will gain insights into engaging parents in their child's early development.

Key words: children's voices, families' voices, early literacy, qualitative methods, well-being

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 4: Quality Education

ECV2024-409

How good are parents at judging their children's speech intelligibility?

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Background: The degree of a child's speech intelligibility significantly affects how they function, not only communicatively but also socially, educationally and emotionally. Initially, a child's communicative partners are limited to immediate family members with this audience gradually widening.

Speech intelligibility, or successful message transfer, is first evaluated by the child's caregivers and later by the widening audience.

Aim: This study aims to determine if parental judgments of speech intelligibility are accurate predictors of speech intelligibility as judged by novel communicative partners.

Method: Twenty-eight typically developing Hebrew-speaking children were recruited. Parents' judgments of their children's intelligibility were obtained from the HEB-ICS (Intelligibility in Context Scale). Novel judgments of the children's intelligibility were obtained from 35 adults interpretating recordings of 32 words, 10 sentences and one picture description. The accuracy of the adult judges' interpretations relative to the target utterances was then compared to the HEB-ICS scores. This research was carried out with the approval of the Research Ethics Committee of the academic institution of the first author.

Results: A significant correlation was found between the HEB-ICS and the judges' interpretations for words and sentences (but not for picture descriptions).

Conclusions: Parental judgments of speech intelligibility, as measured by the HEB-ICS, is an accurate predictor of the intelligibility of a speaker in real communicative situations with novel listeners at word and sentence level. The lack of correlation with the judges' interpretations of picture descriptions requires further investigation and explanation.

Implications for children and families: You as parents can rely on your evaluations of your children's intelligibility as an indicator of how well they will communicate with a wider communicative audience.

Implications for practitioners: You can use the HEB-ICS as an indicator of children's current level of speech intelligibility in real-life communication situations and to track progress in therapy.

Funding: This research was funded by research grants to the authors from their respective academic institutions.

Key words: communication, quantitative methods

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-410

Children's mathematical voices: Meanings, messages and memories

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Background: A child's voice is expressed through many different languages. The Reggio Emilia Educational Approached in Italy hypothesises that children have one hundred languages to access, process, and express conceptual knowledge. One of these languages is children's mathematical graphics. Children's mathematical graphics, as a voice, allow children to access, process and express mathematical meanings and messages and develop mathematical memories. Children's mathematical graphics support their higher mental functions and cognition and help them to engage with the world. Children's mathematical graphics also create mental images and a visual construction of knowledge, which is important for mathematical learning in later years. Children's mathematical voice is the starting point for accessing mathematical knowledge, learning significant mathematical concepts, and sharing their ideas with others. This highlights that acquiring a mathematical voice is critical for children's cognition and higher order thinking. However, children's mathematical graphics are mostly seen as scribbles, or as a developmental precursor to more realistic pictures. The potential of young children's mathematical graphics is that it allows children to learn mathematical conceptual knowledge, form mental images and memories, and express messages and meanings of mathematical significance in symbolic ways.

Aim: The aim of this presentation is to highlight how children's mathematical voices mediate children's mathematical thinking and learning in the early years. Children's mathematical graphics help in the acquisition of a mathematical voice expressing significant mathematical meanings and messages. This presentation also aims to show how children's mathematical graphics develop children's symbolic and abstract thought processes. The premise is that language precedes thought and learning.

Method: This research study used the Cultural-Historical methodology to research a group of twenty 4–5-year-old children attending an early childhood setting. Alongside the Cultural-Historical methodology, this study uses a conceptual framework to frame, collect and analyse the data.
Ethics approval acquired through CSU, as well as through parental and children's consent.

Results: The findings from research into children's mathematical graphics suggest that children's mathematical graphics help to develop children's mathematical conceptual meanings, messages, and memories, either implicitly (without mathematical words to explain their graphic) or explicitly (with mathematical words to explain their graphic). This is the beginning of their written mathematical voice. These include:



Implicit Mathematical Graphics: *"A crocodile. There are the spikes on the body and the tail, sharp teeth with his mouth".*
Conceptual mathematical meanings: geometric shapes – rectangle and circles, straight parallel lines, positioning, size and spatial awareness



Explicit mathematical graphics: *"The smallest are the babies; the next are the kids, and the biggest are the mums and dads. Lots of people. I'm doing lots of different colours. There is so many. They are all friends. They're in their own music. I can't even count them".*
Conceptual mathematical meanings: Mathematical understanding of groups, classification and quantity; circles and colours represent groups of people according to size; positioning; spatial awareness; differences and similarities symbolically represented by circles and colours; patterning and relationships.

Conclusion: Children's mathematical graphics mediate children's mathematical conceptual learning. The research points to the importance of acknowledging that language (voice) precedes thoughts and ideas (learning).

Implications for children and families: We recognise and value your mathematical graphics to support your learning of mathematical conceptual meanings, messages and memories.

Implications for practitioners: Noticing children's mathematical graphics, not just as scribbles or developmental precursor to mature forms of drawing, but to mediate children's mathematical conceptual knowledge, their mathematical meanings, messages and memories.

Key words: children's mathematical graphics, children's mathematical voice, conceptual understandings and learning, expression of significant mathematical meanings

SDGs: This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 4: Quality Education

ECV2024-411

Children on Australian university campuses: A rapid review of internal policies, guidelines, and procedures

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Background: Today's children are more than just the university students of the future. Although university promotional activities often target children as future students, children should be welcome on campus in their own right. Many university staff and students are also caring for children and sometimes need to bring them onto campus. Little is known about the presence of children on campus and how universities consider and accommodate them.

Aim: To conduct a rapid review to identify and understand Australian public university policies and procedures related to children on campus.

Method: A systematic Google search and searches of policy libraries from the 37 Australian universities was undertaken to identify policies and procedures that included "children". Documents were analysed in NVivo using deductive thematic analysis.

Results: Systematic web-based searches identified 79 policies and procedures related to child welfare, safety and well-being; risk mitigation and management; family friendly workplaces; children on university campuses/premises and using facilities; support for underage students; and children undertaking work experience on campus. Across these documents, definitions of a "child" were inconsistent. Forbidden places featured prominently but varied across campuses (e.g., laboratories, commercial kitchens and plant rooms). Policies and procedures tended to apply to the university community in a broad sense rather than target specific audiences such as parents or caregivers. While acknowledging children's presence, few universities recognised children in their own right or empowered their voices.

Conclusions: Across most Australian university policies and procedures, children are primarily considered prospective university students or accompanying adults. Few Australian universities overtly consider children as valuable and active citizens of their community within their policies and procedures. Instead, children's presence on campus is to be tolerated and a risk to be managed in exceptional circumstances when staff or students bring them on campus. In contrast, at events promoting the campus to future students and their families, children are encouraged to engage and participate, albeit in a restricted way.

Implications for children and families: If you go to a university campus outside of organised events and activities, you and your children may not feel very welcome. Often the needs of children as children are not considered. We are interested in changing this perception.

Implications for practitioners: University campuses could be made more child-friendly. A review of policies and procedures is a good starting point.

Key words: children's voices, university, policy, review

This presentation relates to the following [United Nations Sustainable Development Goals]:

- SDG 4: Quality Education
- SDG 8: Decent Work and Economic Growth
- SDG 17: Partnerships to Achieve the Goals



ECV2024-412

Childhood Summit 2023: Strengthening community action through listening and supporting child voice

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Background: As a society, children are often viewed as empty vessels in need of filling by grown-ups. They are often underestimated, not consulted and marginalised as active community citizens. The children who spoke at the Childhood Summit in 2023 (CH23) demonstrated they are active citizens with deep thoughts on the challenges and solutions for their communities.

Early in 2023, the Australian Institute of Play (AIP) approached Griffith University about hosting CH23. The AIP is a community-led organisation from Logan. Its goal is to make Logan the most play friendly city in Australia with CS23 providing children in Logan with the opportunity to share with 'grown-ups' what is on their mind. CS23 combined the voices of child speakers, four grown-up speakers and the fun of a play festival.

Approach: AIP's journey to bring CS23 to life was a 15-month community consultative journey. Combining the efforts of 15 organisations and local primary schools, 43 child keynote speakers (3 to 14 years of age) were recruited to present across the two days.

Results: At the summit, the child keynote speakers talked about issues such as understanding how to respond better to neurodiversity, negative parenting, pressures on children, and mental illness. Importantly, children suggested that a strong source of solution needs to come from changes in themselves, their families and those in their immediate communities. Play, connection to culture, more time with family, and growing opportunities for healthy child agency were all solutions to the many issues/challenges raised by the children.

Conclusions: This paper introduces the principles that guided organisers to ensure CS20 was successful. More importantly, it discusses the approach and actions taken that enabled the issues raised by children at the summit to be heard and actioned into ongoing efforts to respond to community needs.

Implications for children and families: This project provides principles and actions to guide you in developing your own childhood summit to grow a child-friendly and child-informed community in your area.

Implications for practitioners: This presentation will assist you to understand how to work alongside children to strengthen and grow their voice in community.

Funding: The Childhood Summit was funded through a partnership of local and state organisations.

Key words: children's voices, communication, well-being

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 11: Sustainable Cities and Communities
- SDG 17: Partnerships to Achieve the Goals

ECV2024-413

Indigenous children's speech, language and communication: Identifying and co-creating resources and services

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Background: The acquisition of speech and language is a key phase of development for all children. Language use and revitalization are protective factors in the health of Indigenous populations. Many Indigenous families and communities support their children's communication by telling stories, reading books and maintaining cultural heritage. This study used an all-teach all-learn framework to increase access to services and resources for community support of children's speech, language and communication.

Aim: To identify and co-create culturally appropriate context-specific resources and services to support Indigenous children's speech, language and communication at an Aboriginal Community Controlled Health Organisation (ACCHO) in rural Australia.

Method: An ACCHO invited researchers from Charles Sturt University (CSU) to co-create resources and services to support children's speech, language and communication. The project was a sub-study of "Evidence-informed practice development in rural Aboriginal Community Controlled Health Services: An action research approach". During 2023 the CSU and ACCHO leadership team and staff met to plan the project. In 2024 grant funding was secured and ethical approval was gained from the Aboriginal Health and Medical Research Council and CSU to undertake the action research (plan, implement, review).

Results: Two action research cycles are described.

Cycle 1. Identification of potential resources, services, and relevant knowledge was undertaken during the personal and public involvement (PPI) phase. Yarning occurred with people in community and services at ACCHOs, community libraries, community and Indigenous health and education services, conferences, and online. Topics included community trust, culturally appropriate services, relevant funding models, resource and service exemplars. An international scoping review was undertaken and after screening in Covidence, 75 of the 2100 papers were included in the scoping review. Papers documented evidence for services, interventions, and resources used within Indigenous communities across the world.

Cycle 2. Resources identified in cycle 1 were obtained and were reviewed by ACCHO staff. The second research cycle involved 32 ACCHO staff submitting 149 ratings of 56 books over 2.5 months. Overall, the books scored a consistently high rating (4.34/5), considering the cover (4.32/5), artwork (4.38/5), and text (4.30/5). Participants wanted the majority (83.89%) of books for their service. Positive features included: vocabulary, story development, ease of reading, artwork, opportunity to think and learn, Indigenous language, history, and culture. Negative features included difficulty pronouncing Indigenous words, grammar, lack of storyline, and visual appeal (text, cover, artwork), but many had "no negatives".

Conclusions: The perceived quality, relevance, and usefulness of culturally appropriate resources and services provide quantitative and qualitative evidence to inform the ACCHO's decision-making. Numerous quality Indigenous Australian children's books exist. The inclusion of Indigenous content, the artwork, text, story, and messages are important when selecting Indigenous Australian children's literature.

Implications for children and families: We are working together to support children to grow strong and be able to talk, listen and learn.

Implications for practitioners: This project reflects the co-design process of discovery that was specific to one ACCHO, yet provides an overview of relevant processes for establishing new services.

Key words: Indigenous voices, communication, community services, interdisciplinary, innovation, international communities, regional/rural communities, vulnerable communities, workforce issues.

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 8: Decent Work and Economic Growth
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-414

“Can I draw Peppa Pig?”: Using creative methods with parents to explore families’ everyday lives and interactions

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Background: Parent-child interaction (PCI) interventions are frequently used by speech and language therapists (SLTs), but concerns have been raised about their cultural and ecological validity. Intervention strategies are primarily based on psycholinguistic observations of interactions between white, middle-class mothers and their children. To inform the theory behind PCI interventions, we need to understand more about children’s diverse interactions across contexts.

Aim: This study explored children’s everyday communication environments using a novel combination of audio recordings and creative methods.

Method: Twelve parents and their typically developing child (aged 2.5–4 years) were recruited in Bristol, UK. Recruitment targeted diversity in ethnicity, education and family size. On a day of their choice, parents took photographs of their daily activities, and their child wore an automated recording device. Parents then participated in a qualitative interview, incorporating the following creative methods: ecomaps, timelines and photo elicitation. This study was approved by the University of Bristol Faculty of Health Sciences ethics committee on 10/09/21.

Results: In-depth activity analyses of photographs, recording extracts and parent interviews revealed variation in how families engaged in activities and diversity in the activities that led to opportunities for interaction. Themes arising from parent interviews illustrated a range of internal and external factors affecting everyday activities and interactions, including children’s temperaments, family dynamics, and cultural expectations.
Conclusions: We discuss the implications of the findings for SLTs, including the value of a socio-cultural approach to PCI interventions. We also consider the potential benefits and challenges of using creative methods with families in clinical practice.
Implications for children and families: When we are researching language development and working with families, it is important to think about the people you talk with and the places where you spend time from day-to-day.

Implications for practitioners: Recommendations will be made for collaborative approaches for future PCI interventions, including finding a time that fits the family, exploring the individual family culture, and engaging with creative methods.

Funding: Funding for Caitlin Holme’s PhD was provided by the Heather van der Lely Foundation.

Key words: families’ voices, communication, innovation, qualitative methods, creative methods

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education

ECV2024-415

Adopting a strengths approach in early childhood education

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Background: The use of a strengths approach in early childhood education is often promoted as best-practice for working with children and families and is being used as a conceptual framework in early childhood research. While strengths approaches are gaining attention as a useful theoretical framework in education fields, there are multiple variations of strengths-based approaches, strengths theories and perspectives – so how do early childhood educators and researchers know where to start to enact a strengths approach (SA)?

Aim: To answer this question, findings from an exploratory ethnographic study of a SA intervention in two Australian Kindergarten classrooms are explored as an example of how to demystify the use of a SA in early childhood practice and research.

Method: Participants included two teachers and 21 children. Data was gathered via observations, interviews, document collection, exit questionnaires and researcher reflections. Ethical approval was provided by CSU HREC (H20289).

Results: Changes in practice and recognition of resources as strengths were benefits of the SA intervention.

Conclusions: A strengths approach can not only provide early childhood educators with the support and flexibility needed to cater for early years education and the complex needs of young children and families, but it is also a useful and emerging theoretical framework for research that prompts positive change.

Implications for children and families: You have strengths and resources that can be leveraged to support your education needs.

Implications for practitioners: The presentation aims to add understanding in three ways: 1) by exploring how you may already implicitly be enacting strengths approach principles, 2) by demonstrating how you can incorporate a SA explicitly into your practice by using some key evidence-based strategies and, 3) by highlighting the use of the SA as a practice-based theory in research.

Key words: children's voices, professionals' voices, education, qualitative methods, strengths, practice-based theory

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 4: Quality Education

ECV2024-416

Maximising the impact of speech and language therapy for children with speech sound disorder (MISLToe_SSD): Children and young people as patient and public involvement (PPI) members

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Background: In the UK, speech and language therapy (SLT) services for children with Speech Sound Disorder (SSD) are delivered by a publicly funded national health service (NHS). There are disparities in how SLT services are delivered and differences in how outcomes are measured. The services collect different information on the outcomes for these children. This means we do not know which therapy works best for which children. In this research, we have worked with different groups of speech and language therapists, children with speech sound disorder, older children and young adults, parents and academics from across the UK to agree on which outcomes are the most important to collect, and how to do so, for children with speech sound disorder. Patient and Public Involvement (PPI) work is a crucial part of this research; it is about having an active partnership between patients and the public and researchers. In the UK, PPI is often a mandatory requirement for successful research funding.

Aim: To maximise involvement and engagement in the MISLToe_SSD study from families who are typically time-poor, from young people who may lack motivation, and from young children who have challenges in communicating and may be difficult to understand. These voices are important to ensure that this research is shaped by their perspectives and priorities so that it can have the maximum impact on improving outcomes for children with speech sound disorder.

Method: Using innovative and creative methods such as emotional mapping and drawing, we held face-to-face and in-person engagement activities with ethnically diverse children and young people aged between 4 and 18 years in the UK. As this work was a PPI activity, ethical approvals were not required; however ethical principles and guidelines were followed, and parents of the young participants were provided with an information sheet and consent form before their participation.

Results: Sixty-six children and young people aged 4–18 years from diverse ethnic backgrounds with and without SSD took part in in-person and virtual PPI sessions held in community settings in Edinburgh (Scotland) and Bristol (England). Emotional mapping, audio and video recordings captured their experiences. Their responses provided insights into the aspects of therapy that stood out most for them and which data were most important to collect and why, which differed from what academics thought.

Conclusions: Methods such as emotional mapping and drawing can enable children as young as four years old to help shape research designed to impact them.

Implications for children and families: Involvement in PPI activities is critical to supporting researchers, clinicians, and stakeholders to ensure that research is designed and carried out in a way that will achieve maximum impact for you. The findings and learning from this work contribute to growing evidence that you have both the appetite and right to contribute to research that impacts you.

Implications for practitioners: This work shows that you can use highly creative, innovative and dynamic methods to engage children and young people in the design and prioritisation of your research. By doing so, you can ensure your work addresses the issues and priorities of those it is designed to impact.

Funding: MISLToe_SSD Phase 1 was funded by a National Institute for Health and care Research (NIHR) Research for Patient Benefit grant (NIHR202766).

Key words: children's voices, communication, health, innovation, qualitative methods

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-417

Voices and visions: Engaging children with childhood apraxia of speech in intervention research

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Background: It is important to actively engage children in matters that concern them, according to Articles 12 and 13 of the United Nations Convention on the Rights of the Child. The inclusion of children's voices requires "space, voice, audience, and influence" (Lundy, 2007, p. 927) for enacting children's communication rights. In the Lundy model, *space* and *voice* provide the opportunity for children to express a view, while *audience* and *influence* enable children's views to be given due weight. Listening to young children with unintelligible speech due to childhood apraxia of speech requires expertise from communication professionals (speech-language pathologists) in collaboration with children and families to enact children's communication rights.

Aim: To give children with childhood apraxia of speech the space, voice, audience, and influence to provide their perspectives about participating in a motor speech intervention research project.

Method: Participants were the first 25 children with childhood apraxia of speech in a research study. The children were undertaking Dynamic Temporal and Tactile Cueing (DTTC), an evidence-based motor speech intervention in Australia and the United States. The children were invited to participate in a sub-study to share their views of the intervention using a range of child-friendly methods. The children consented to (a) create a drawing of their experience of speech practice and answer questions about their drawing, and (b) talk about their experiences of speech practice during a 20-minute online zoom interview with a parent/caregiver and a speech-language pathologist. The research was undertaken with ethical approval from the collaborating university, parent consent, and child assent.

Results: Children's reported feelings fall along a continuum with many positive comments about participation in DTTC intervention. Children reported the types of activities they participate in during intervention, details of the types of rewards for speech practice attempts, fun activities that are used during breaks, as well as features of the therapy setting that were memorable to them.

Conclusions: The children were provided the *space* (opportunity) to share their insights about talking by submitting a drawing and explanation. They were given a *voice* by being facilitated to express their views "regardless of frontiers … in the form of art, or through any other media of the child's choice" (Article 13, United Nations, 1989). At the completion of the project, the children will be given an audience to share their views to influence how children receive this motor speech intervention in the future.

Implications for children and families: It is important that all children have a say about what happens in their lives. We are interested to learn from children about what it is like to do speech therapy.

Implications for practitioners: All children have the right to communicate about all aspects of their lives – and this paper provides insights into how this may be undertaken within clinical contexts.

Key words: children's voices, communication, community services, interdisciplinary, innovation, international communities, vulnerable communities

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-418

The index of phonetic complexity: Adaptation for Urdu

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Background: Many studies have been conducted to explore the phonetic complexity of different languages. Several tools have been developed for this purpose, such as the Index of Phonetic Complexity. IPC was originally developed for the English-speaking population and has been adapted to other languages such as Arabic, Berber, and French. IPC includes eight factors focusing on singleton consonants, vowels, word shape, syllable structure, and consonant clusters.

Aim: This study aimed to adapt the IPC for Urdu (IPC-Ur).

Method: The features of the Urdu phonological system were considered during the adaptation. IPC assigns complexity scores to features and sounds that are acquired later. Urdu speech sound developmental patterns were considered to find complex features in Urdu.

Results: This study presents the considerations made while adapting IPC for Urdu. IPC assigns a score to triphthongs. As Urdu does not have triphthongs, this factor was eliminated during the adaptation. Factors four and five remained the same. All remaining factors were modified based on language-specific features and acquisition patterns. A new factor focusing on 'consonants by aspiration' was added.

Like the original IPC, IPC-Ur provides scores for each factor, as well as a sum score, indicating the overall complexity score of the whole word.

Conclusions: Despite being the 10th most spoken language worldwide, Urdu is understudied. IPC-Ur adds to the available tools adapted specifically for Urdu and would benefit clinical and research use. It can facilitate both the independent and relational analyses of the speech data.

Implications for children and families: You will be able to see how complex the speech produced by your child is and see how it has changed after intervention.

Implications for practitioners: You can calculate the complexity of Urdu words. IPC-Ur can also help track the phonetic/phonological changes in complexity during an intervention or across different age groups.

Funding: This work was supported by the General Research Fund from the University Research Council granted to the second author (Project No. 17614717).

Key words: children voices, Indigenous voices, communication, community services, health, international communities, well-being, understudied languages

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 17: Partnerships to Achieve the Goals

ECV2024-419

The sound of silence: On the (a)typical nature of initial consonant omission in European Portuguese

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Background: Initial Consonant Omission (ICO) is classified as an atypical process. However, its use was observed in typical development (TD) in Finnish and Mandarin. European Portuguese (EP) fricatives, liquids and clusters have been episodically reported as triggering ICO in both typical and atypical language development profiles.

Aim: Our goal is to describe ICO in TD Portuguese children, discussing its (a)typical nature, and to establish a correlation with phonological (im)maturity.

Method: We analyse longitudinal naturalistic data from four TD children (open access data at Phonbank), aged 1;2–3;3. All ICO for liquid singletons (/l,ʎ,ɾ,ʁ/) were considered. The measures used were Percent Singleton Consonants Correct (PSCC) and ICO rates.

Results: ICO is used by our TD children. It emerges word-initially and word-medially. PSCC rates (J=51%; M=62%; R=72%; L=83%) and ICO (J=13%; M=2%; R=6%; L=0,1%) show a negative correlation between phonological maturity and ICO frequency (see J: PSCC=51%; ICO=13% versus L: PSCC: 83%; ICO=0,1%).

Conclusions: ICO occurs in TD Portuguese children, challenging its categorisation as an atypical process. Furthermore, onset deletion is possible in different word positions, not only word-initially. The hypothesis of a negative correlation between phonological maturity and ICO was confirmed.

Implications for children and families: During language development, children may follow the expected trajectory or a deviant one. ICO is used to identify atypical trajectories. Our study suggests that ICO is also employed by TD children. This contributes to a more precise diagnosis, which enhances the clinical practice.

Implications for practitioners: ICO is traditionally used to identify atypical development. Our study suggests otherwise, indicating that ICO is also possible for TD children. Consequently, it should be used with caution by Portuguese practitioners as a marker of atypical development. Our study suggests a reassessment of the atypical nature of OCI, which will enable practitioners to address its impact on diagnosis and intervention.

Key words: phonological processes, typical development, initial consonant deletion, children's voices, professionals' voices, communication, community services, health, quantitative methods

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 11: Sustainable Cities and Communities
- SDG 17: Partnerships to Achieve the Goals

ECV2024-420

Characteristics of effective parent-mediated interventions for parents of children with neurodevelopmental disorders in rural areas

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Background: Parent-mediated interventions (PMI) can be effective for children with neurodevelopmental disorders (NDD), bridging the gap in clinical health service access by facilitating treatment in a child's natural environment. Previous research has examined the clinical outcomes of these interventions; however, the characteristics of effective PMI for children with NDD living in rural, regional and remote (RRR) communities have not been systematically identified.

Aim: To identify characteristics of effective PMI for parents of children with NDD residing in RRR communities.

Method: A systematic review of PMI for children with NDD living in RRR communities was conducted. Five databases were searched. Articles published between January 2013 and March 2024 and written in English were included.

Results: The initial search identified 737 articles; 32 articles were included in the final analysis. The research methodologies included qualitative, randomised control trials, quasi-experimental and case reports. The studies were conducted in 11 countries (Ethiopia, United States, Canada, Kenya, Italy, South Africa, Australia, Pakistan, Iceland, Cambodia and Bangladesh) and involved a total of 2,115 children, caregivers, siblings, practitioners and community members. The interventions targeted skills including children's behaviour, language development, motor skills and parental stress, confidence and capabilities. Characteristics that contributed to effective PMI included mixed methods of delivery, flexible delivery schedule/duration, positive relationships with practitioners and delivery in a child's natural environment.

Conclusions: Professionals working with children with NDD and their families who live in RRR communities should integrate the key characteristics identified into PMI to ensure effectiveness and positive outcomes.

Implications for children and families: PMI can be effective in providing you and your children with appropriate support and therapy. These interventions can be effectively delivered to RRR communities.

Implications for practitioners: When planning and delivering PMI for children with NDD in RRR communities, you must understand and integrate evidence-informed characteristics to ensure effective outcomes.

Key words: parent-mediated intervention, neurodevelopmental disorders, regional/rural communities, systematic review

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 10: Reduced Inequality

ECV2024-421

Early childhood educators talking about the strengths and needs of Aboriginal children during transition to school

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Background: Educational settings promote a positive transition to school for Australian Aboriginal children when they acknowledge and value children's identities as learners and as cultural beings. The term Aboriginal is used to refer to the participant children to reflect local preferences in the research site.

Aim: To understand how early childhood educators talk about the strengths and needs of Aboriginal children in relation to transition to school.

Method: Participants were part of the Gudaga Goes to School (Gudaga-GtS) study, a longitudinal study that explored the health, development, and early educational experiences of Aboriginal children in an urban setting in NSW. Data were drawn from interviews conducted by Aboriginal and non-Aboriginal members of the research team. This presentation draws on analyses of the interview data undertaken by a non-Aboriginal doctoral student. The doctoral study was approved by relevant university and education sector ethics review committees.

Results: Most educators were predisposed to seeing Aboriginal children's strengths and needs as diverse. However, this was often in reference to their diversity as learners and rarely in relation to their family and community strengths or histories.

Conclusions: A combination of critical and relational approaches to transition to school will be proposed to facilitate a more nuanced understanding of Aboriginal children's strengths and needs during the transition to school.

Implications for children and families: This presentation will highlight the recognition of family and community strengths and aspirations during the transition to school.

Implications for practitioners: You will be provided with opportunities to reflect on how you can learn about children's strengths and needs based on their lived cultural worlds rather than relying on homogenising constructions of Aboriginal children.

Funding: This doctoral study formed part of a project funded by an Australian Research Council Discovery Grant (DP120100828) awarded to and administered by the University of New South Wales.

Key words: professionals' voices, Indigenous voices, education, transition to school

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-422

Assessment at play: Championing the capacities of children and empowering the mathematical pedagogue

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Background: The role of assessment in providing the pedagogue with high-quality information of the child's capacities is beneficial, if not critical, to quality practice and intentionality that responds appropriately to each child. Yet misunderstanding surrounding assessment use and a lack of tools to support assessment in play-based environments means many educators find it difficult to reconcile within philosophies of child-centred pedagogy. Assessment that provides opportunities for educators to recalibrate their assumptions and expectations of children by showcasing their true capabilities and represents their thinking in important domains of mathematics is needed. When educators are empowered to develop a more attuned lens through quality assessment practice, they can identify children's true mathematical capabilities and capacities, develop a deeper knowledge of content and skills, and exhibit a strengthened ability to plan thoughtfully to enhance the child's learning.

Aim: This presentation draws from research findings from a newly developed play-based numeracy assessment, the Numeracy and Mathematics Block-Based Assessment (*NUMBBA*), which was introduced to 16 educators to use with children. The measure aims to embed formative assessment practice within multiple pedagogies for play and learning. This was part of a larger mixed methods PhD program of research that involved the development and evaluation of *NUMBBA*.

Method: This study was designed to capture rich data exploring the perceived impact from the use of a play-based formative assessment tool on educators' knowledge, attitudes, and practice. Participants were 16 educators from five ECEC services in regional NSW who were invited to participate from a pool of services who had expressed interest in being involved in the study at an Early Childhood Australia conference in 2018. Educators were trained in the use of *NUMBBA,* with informed written consent sought from parents and educators, and verbal assent from children. Data were drawn from semi-structured interviews conducted via zoom, which occurred 8–10 weeks post assessment. The study was reviewed by the University of Wollongong's Human Research Ethics Committee (Social Sciences, HE2019/348).

Results: The findings revealed shifts in educators' knowledge of mathematics, perceptions of children's abilities, attitudes towards mathematics and assessment, and approaches to pedagogy and practice. Educators identified key components conducive to embedding assessment effectively into ECEC contexts. *NUMBBA* challenged educators' perceptions of children's abilities and showcased children's capacities in patterning, symmetry, and number sense. As a result, educators prioritised mathematical explorations with children, noticed more opportunities for deep exploration in their intentional pedagogy, held higher expectations and moved children beyond basic numbers and counting.

Conclusions: The findings from this study contribute to an emerging narrative around the value and place of formative assessment within ECEC. This discourse has focused on play-based assessment to support early childhood educators' knowledge of a child's development, their own knowledge and attitudes towards assessment, as well as their pedagogical intentionality.

Implications for children and families: Play-based assessment provides opportunities for you to showcase your true capabilities in mathematics through play.

Implications for practitioners: Play-based assessment should not *feel* like an assessment, should be fun and engaging and provide opportunities for you to notice children's true mathematical capacities.

Key words: children's voices, early mathematics, mathematics at play, play-based pedagogies, formative assessment, innovation, qualitative methods, education

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 4: Quality Education

ECV2024-423

Social competence interventions for children with developmental vulnerability: A systematic review

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Background: Developmental vulnerability is a term used to describe children who have not met their potential across physical, mental, social, emotional and cognitive domains. Being identified as developmentally vulnerable can be used as an indicator of well-being and inform interventions and service provision. Developmental vulnerability impacts social competence in approximately one in ten Australian children; that is, their ability to connect with others. A social competence deficit may negatively impact development and lead to poor educational outcomes and poor quality of life for these children.

Aim: To identify characteristics of interventions used by early childhood professionals to improve social competence outcomes in young children identified as developmentally vulnerable.

Method: A systematic review was conducted. Key inclusion criteria included a focus on developmentally vulnerable or socially disadvantaged children below the age of seven years.

Results: The initial search produced 1866 articles for screening. Following full-text screening, 29 articles were included in the final review. The findings suggest that supporting and upskilling key adults who support children and working within natural settings are critical elements of successful interventions to improve social competence in vulnerable children.

Conclusions: Understanding the key characteristics of interventions to address social competence deficits is necessary to ensure early childhood professionals can implement evidence-informed interventions when working with vulnerable children.

Implications for children and families: The findings will support you to implement appropriate strategies to develop your child's social competence skills.

Implications for practitioners: The findings will assist you in choosing evidence-informed interventions to improve social competence outcomes in vulnerable children. You will also better understand which characteristics contribute to effective interventions.

Key words: Social competence, developmental vulnerability, early intervention, early education

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education

ECV2024-424

Examining primary teachers' knowledge and confidence in teaching Aboriginal and Torres Strait Islander histories and cultures as cross-curricular priority: A narrative review

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Background: The Australian curriculum emphasises such knowledge that young Australians can develop their social, personal, and intellectual capabilities and contribute to building our nation. Australians are expected to be confident and creative individuals and successful lifelong learners in a globalised world. The Australian curriculum also prioritises Aboriginal and Torres Strait Islander histories and cultures as a cross-curriculum priority intended to provide opportunities for all students to deepen their knowledge of Australia by learning about the world's oldest continuous living cultures. However, are educators ready to deliver the expected Indigenous knowledge?

Aim: This presentation aims to review existing literature to understand the status of primary teachers' knowledge and confidence in teaching Aboriginal and Torres Strait Islander histories and cultures as a cross-curriculum priority.

Method: This research involves a narrative review of the literature about teachers' knowledge and capability in relation to teaching Indigenous content, incorporating Indigenous ways of knowing into teaching, and authentic engagement with Aboriginal and Torres Strait Islander histories and cultures as an Australian cross-curriculum priority.

Result: Based on the literature review of the last decade, the findings indicated three critical areas of concern about teachers' readiness: a) teachers' confidence and skills in fulfilling the authentic application of Indigenous knowledge as a cross-curricular activity; b) inadequate training and professional development for non-Indigenous teachers; and c) problematic interactions between non-Indigenous teachers and Indigenous students. The results also highlight that a shortage of Indigenous teachers has implications for authentic teaching of Indigenous perspectives.

Conclusions: The literature review identified the need for further study of primary teachers' knowledge, confidence, and skills in relation to teaching Aboriginal and Torres Strait Islanders' histories and cultures.

Implications for children and families: You will learn what and how children are expected to learn about Aboriginal and Torres Strait Islander histories and cultures at primary school.

Implications for practitioners: You will learn about Australian primary teachers' readiness to teach the Cross-curriculum priority of Aboriginal and Torres Strait Islander Histories and Cultures.

Keywords: teachers' confidence and knowledge, Aboriginal and Torres Strait Islander histories and cultures, teachers' perspectives, Indigenous knowledge, cross-curricular priority, Australian curriculum, professionals' voices, education

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 4: Quality Education
- SDG 10: Reduced Inequality

ECV2024-425

Children's perspectives of connections between play and learning

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Background: Play is central in children's lives and has been identified as a crucial contributor to their learning. Early Childhood Educators use play pedagogies to create learning opportunities. Less is known about children's perceptions of play in a learning context.

Aim: A study that explored children's perspectives of play investigated what connections children make between play and learning.

Method: Socio-cultural theories of play and epistemological understandings of childhood studies informed the qualitative methodology. Data generation encompassed video-recording children's play and watching the videos to stimulate conversations in groups of children. These were also video-recorded so children's verbal and nonverbal forms of expression could be captured. Ethics included providing children with opportunities to give their informed consent for all steps of data generation.

Results: The children only mentioned learning in their play when the researcher inquired about it. Then they showed awareness of 'what' they learnt in play and how they learnt and the educator's role in it. Paying attention to children's nonverbal contributions indicated that they learned through engaging with peers during play. The overall data informed an ethical framework to promote ethical practices to seek and include children's perspectives of play.

Conclusions: Educators can make informed decisions for a play pedagogy that enhances children's learning while protecting the right to play in its own right. Listening to children and providing them with opportunities to have control over decisions concerning their experiences promotes well-being, access to quality education and early childhood development, ensuring responsive, inclusive, participatory and representative decision-making at all levels, starting from early childhood.

Implications for children and families: Children can be active contributors to play pedagogies.

Implications for practitioners: The ethical framework can promote the inclusion of children's voices to inform future research on play and learning.

Key words: children's voices, qualitative methods, play, ethics

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 16: Peace and Justice Strong Institutions

ECV2024-426

Models for an inclusive educational environment for children and students with attention deficit and/or hyperactivity disorder

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Background: The Inclusive Education Act from 2016 and the Inclusive Education Regulation from 2017 in Bulgaria direct attention to different groups of children/students with developmental disabilities, including children/students with attention deficit and/or hyperactivity disorder.

Educational practice shows that the outlined conceptual framework is difficult to apply in the conditions of group activity in Kindergarten or the classroom environment, which necessitates the need to reconstruct the learning environment for these children, as well as providing opportunities for better control and monitoring in working with them.

Aim: This presentation provides a brief overview and analysis of some models for effective social and educational inclusion of children and students with attention deficit and/or hyperactivity disorder through the interaction of state and educational institutions.

Method: Observations and studies have been conducted that provide grounds for proposing inclusion models for students with attention deficit and/or hyperactivity disorder.

Results: The intention is to create prerequisites for developing a methodology for inclusive education of children and students with attention deficit and/or hyperactivity disorder.

Conclusions: The presentation outlines perspectives for support and personal development of children and students with attention deficit and/or hyperactivity disorder.

Implications for children and families: Discover the wonders of the world together!

Implications for practitioners: It is necessary to rethink and design a new, dynamic methodological scheme for the education and personal development of children and students with attention deficit and/or hyperactivity disorder.

Key words: children's voices, families' voices, professionals' voices, community services, education, government, policy, attention deficit, hyperactivity, models of inclusiveness

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 4: Quality Education

ECV2024-427

A flood of raindrops does not nourish the soil: Mentor knowledge of the APSTs and its impact on supervising pre-service teachers amidst growing teacher supply initiatives in early childhood education

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Background: Australia faces a significant shortage of qualified early childhood teachers. While government strategies focus on increasing teacher numbers, ensuring their competency through quality pre-service work integrated learning is crucial. The scarcity of research on the impact of mentor knowledge of the APSTs on the supervision of pre-service early childhood teachers raises concerns about the validity of placement assessments, teacher preparedness, and quality.

Aim: This study examined mentors' knowledge of the APST and the adequacy of this knowledge in supporting and assessing pre-service teachers and suggests strategies for deepening their understanding of the standards.

Method: A mixed-method data collection strategy was used to gather and analyse both qualitative and quantitative data through a survey. Participants were qualified ECTs who had supervised pre-service teachers in the past 12 months in Wagga. An invitation to participate was emailed to all early childhood and preschool services in Wagga. The study received ethical approval from CSU's Human Research Ethics Committee.

Results: The data showed that while most ECTs are aware of the APSTs, confidence in using these to supervise and assess pre-service teachers varies, with many expressing low to moderate confidence levels.

Conclusions: Although there is general awareness of the standards, their practical application in supervising pre-service teachers is inconsistent. This raises concerns about adequate assessment against the placement and APST, whether current university work-integrated learning practices meet AITSL accreditation standards, and the quality of the increased number of ECTs through government strategies.

Implications for Children and Families: Ensuring that your child is taught by well-prepared and qualified teachers is crucial for their early development and education.

Implications for Practitioners: Enhancing mentors' knowledge of the APSTs through targeted training and resources will improve the quality of pre-service early childhood teachers. It aligns with government strategies to increase ECTs, meets AITSL accreditation standards, and fulfils the United Nations Sustainable Development Goal 4.2 for quality early childhood education.

Key words: Australian Professional Standards for Teachers (APST), Early Childhood Education and Care, Early Childhood Teacher (ECT), Australian Institute for Teaching and School Leadership (AITSL), Work Integrated Learning, professionals' voices

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 4: Quality Education

ECV2024-428

Using an implementation science framework to co-design and test the Speech Assessment of Children's Home Language(s) (SACHL)

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Background: Speech-language pathologists (SLPs) face challenges in assessing children's speech in languages they do not speak. Limited clinical resources are available for assessing unfamiliar languages. Implementation science offers a way of introducing new evidence-based resources and translating research findings into practice.

Aim: To demonstrate how an implementation science framework is being used to explore the acceptability, feasibility and effectiveness of a new evidence-based clinical protocol – the Speech Assessment of Children's Home Language(s) (SACHL).

Method: The Consolidated Framework for Implementation Research (CFIR) was applied to this research in three phases.

Phase 1 took an action research approach where SLPs provided feedback on the acceptability of the SACHL. Five hundred and two registrations were received for a one-hour online presentation about the SACHL and 348 devices were connected during the presentations.

Phase 2 involves using SLP feedback from Phase 1 to refine the SACHL and collaborating with SLPs to co-design language-specific resources for the SACHL.

Phase 3 involves trialling the SACHL in a clinical context, using the implementation strategies identified in Phase 1, and the co-designed language-specific resources from Phase 2.

Ethics approval from CSU Human Research Ethics Committee has been obtained (H24093).

Results: Phase 1: 369 participants provided feedback on the acceptability and feasibility of the SACHL; 181 indicated that they would like to receive more training in the SACHL. Feedback is currently being used to refine the SACHL.

Phase 2: 70 participants from Phase 1 have offered to partner with the researchers to co-design language-specific resources.

Phase 3: 106 participants from Phase 1 have expressed interest in partnering with the researchers to trial the SACHL in their clinical practice.

Conclusions: Implementation science offers useful frameworks for researchers to partner with clinicians to co-design and test evidence-based clinical tools. This research supports speech pathologists to uphold everyone's "right to express themselves and to create and disseminate their work in the language of their choice, and particularly in their mother tongue" (Article 5, UNESCO, 2001).

Implications for children and families: We are creating and testing a clinical tool for speech pathologists to be able to assess your speech in every language that you speak, even if they do not speak the same home language(s) as you.

Implications for practitioners: You have indicated a need for more clinical resources and training in how to assess multilingual children. Our research aims to fill this gap, through researchers

partnering with practitioners to develop and test a clinical protocol for assessing children's speech in an unfamiliar language.

Funding: This research is funded by the Rural Health Research Institute, Charles Sturt University, Australia.

Key words: children's voices, professionals' voices, communication, education, health, innovation, cultural responsivity, multilingual

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-429

Lost in translation: Barriers and opportunities for early childhood educators to enact child protection research recommendations

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Background: Currently early childhood educators, such as the participants in the research, submit only 2% of overall child protection reports made (AIHW, 2024), despite this age group being the most likely to be harmed or abused, suggesting a gap between knowledge and practice. Early childhood educators have a key role in fostering children's safety and well-being as they have the greatest potential for identifying child maltreatment and intervening due to the daily interactions they have with children. However, despite child protection knowledge being available from research, scholarly and grey literature, information on how to access and enact this crucial knowledge is limited.

Aim: To explore the findings and implications of a recent early childhood child protection research project that used a strengths-based methodology and conceptual framework. The project aimed to understand from a small sample of educators in one Early Childhood Education service how child protection research was enacted in their service to support the continuing practice of keeping children safe. It is hoped that recommendations and strategies arising from this research can assist practitioners more broadly to enact evidence-based, best-practice strategies that support them when working with children and families experiencing child abuse and neglect. This research aims to understand the current knowledge and practices of early childhood educators regarding how they keep children safe and to build capacity and support them to respond more readily to violence, abuse, exploitation, neglect and harmful practices against children.

Method: Qualitative methodology, with a singular holistic case study research design was as well suited to answer the research question and gaps identified within the literature review. A purposive sample of participants was recruited and consented to participate in the ethics-approved research. The research site was a real-world context of one early childhood education service in New South Wales, Australia. The research design drew on a strengths approach framework that acknowledges the importance of collaboration between the researcher and the participant through a constructive "power-with" not "power-over" model. To allow rich data to be collected for the case study, the research involved three data collection techniques – electronic interviews (EViews), semi-structured face-to-face interviews (Open Views), and a Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis. The data analysis used thematic analysis linking to literature sources and strengths approach principles.

Results: The early childhood educators in the service confirmed that child protection is an increasingly prominent issue in their work and educators are confronted daily with the reality of child maltreatment. The project revealed multiple barriers and opportunities for early childhood educators to increase child protection and reporting. For instance, some research recommendations are not readily available and are written for an academic audience. However, professional development in evidenced-based research and the use of Open Access scholarly practitioner publications may be beneficial. (Note: results pending at time of abstract.)

Conclusions: By considering and 'translating' child protection research recommendations, early childhood educators can improve this crucial area of their practice beyond the obligatory-

mandatory reporting workshops to ensure that pedagogies align with the well-being and safety of children. This area of practice is in dire need of further support and research.

Implications for children and families: It is important that children do not experience child abuse and neglect and that families receive help and support in child protection from knowledgeable early childhood educators.

Implications for practitioners: Child protection research recommendations are not always readily available or grounded in practice strategies – they are 'lost in translation'. These recommendations could, however, positively assist early childhood educators in their complex role of working with children and families experiencing child abuse and neglect. We present some strategies to assist.

Key words: children's voices, professionals' voices, qualitative methods, well-being

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 16: Peace and Justice Strong Institutions

ECV2024-430

Mathematics education for children birth to three years old: The influence of educators' beliefs on practice

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Background: Mathematics research in the early years has shown that infants are born with innate mathematical capabilities that form the foundation of a child's mathematical knowledge and skills. The first three years are critical for the developing brain and executive functions that play a key role in mathematical learning. Research has also highlighted that educators' prior experiences and emotive response to mathematics influence their practices and choices in mathematics education. There appears to be a disconnect between children's capabilities in their first few years of life, and educators' beliefs and perspectives about the mathematical potential of children in the early years.

Aim: The research project focused on early childhood educators' (working in childcare or early learning centres across Australia with children three years old or younger) and explored how their beliefs and perspectives about mathematics influenced mathematics education practices with those children.

Method: Using a grounded theory research design, this ethics-approved, qualitative study used a combination of data collection instruments. Participants were recruited and consented to participate. An initial questionnaire (using Survey Monkey) was conducted with 152 participants to gather demographic, initial contextual information, and views of mathematical concepts. Semi-structured interviews (using a zoom format and open-ended questions) were completed with 34 participants and were the primary data collection method. Interviews incorporated responses to three scenarios presented as prompts for the participants to explore their perspectives and understanding of mathematics in this age group.

Results: For the early childhood educators in the study, mathematics education in the early years was a topic of varied opinions and discussions, particularly for the before school age groups. This is significant as educators and teachers had differing views on what, how and even if mathematics should be taught to children in the early years. Some educators, teachers and pre-service teachers had neutral or negative views about mathematics stemming from their own schooling experiences which may have subconsciously influenced their curriculum structures and content, and also if or how they taught mathematics to the children in their care. A deficit in mathematics knowledge can lead to the continuation of educators' negative attitudes, which can be passed on to students, while positive attitudes can potentially lead to the pursuit of further knowledge. (Note: results pending at the time of abstract.)

Conclusions: This research generated significant theoretical and practical findings that are useful for practitioners, researchers, and leaders in the early years sector. It is anticipated that the findings will have a particularly positive impact for those who train and assist educators to implement educational programs that lay the foundational groundwork in mathematics education not only for children in the early years but for generations to come.

Implications for children and families: It is important that young children have the best opportunities to develop mathematical skills and receive help and from confident and knowledgeable early childhood educators.

Implications for practitioners: Did you know that your own perspectives and experiences on mathematics can influence how young children develop and learn mathematical skills? Reflecting on your own beliefs is a crucial step to fostering mathematics education for children from birth to three years old.

Key words: professionals' voices, early mathematics, education, qualitative methods

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 4: Quality Education

ECV2024-431

Steppingstones: Supporting parents of children with neurological difficulties (CWND) in Fiji

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Background: Parent education programs for CWND significantly enhance parental skills for child safety and improve developmental outcomes. The Steppingstones program was inspired by the Ubuntu and Hambisela programs and culturally adopted in 2019 by the Frank Hilton Organization's Physiotherapy, Speech Pathology, and Community Support teams, addresses the unique challenges faced by CWND in Fiji's diverse cultural and socio-economic context.

Aim: To review the efficacy of the culturally adapted version of the Steppingstones program for Fijian parents.

Method: Between 2019 and 2024, 93 parents from 80 families with CWND participated in the program, which included seven learning modules covering topics – understanding your child, children's rights, positioning, communication, feeding, play, and community inclusion. Written consent was obtained from the participants for their child's data to be used anonymously for research purposes on the first day, and the Steppingstones evaluation survey was completed on the first and last days of the program. Quantitative data were analysed using descriptive statistics, while qualitative data were analysed thematically.

Results: The data indicated that parents struggled with acquiring knowledge and practical skills. Throughout the nine programs, barriers affecting the effectiveness of community-based programs were identified: poor attendance, attitudinal barriers, language differences, financial constraints, and facilitator confidence.

Conclusions: In Fiji, cultural, language, financial, and service resourcing barriers must be considered and addressed to ensure that Steppingstones participants can attend the program. Modifications to the Steppingstones program, such as conducting home visits, providing transportation, organising briefings, aligning the program with participants' needs, and making sessions more practical, were done to encourage engagement and participation.

Implications for children and families: You will feel confident to support your CWND. Addressing language differences and attitudinal barriers through practicals ensures a better understanding of the techniques.

Implications for practitioners: This will help you understand the challenges of working with CWND in diverse communities and developing culturally sensitive parent education programs tailored to specific socio-economic contexts in lower-resource countries.

Key words: community services, parent-training, Fiji, cerebral palsy, FHO, multidisciplinary, families' voices

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality

ECV2024-432

Some bilingual phonological usage frequencies compared to targeted language frequencies

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Background: Distributional frequencies of linguistic units delineate language acquisition paths and help understand developmental processes. Phoneme frequency has an impact on language acquisition. Comparing input to child usage frequencies differentiates child phonological acquisition cross-linguistically and across languages in multilinguals. Such between-language comparisons are challenging due to the variable nature of language input and speaker usage. An ecosystemic theoretic account considers child-internal/external influences and the language specificities of the targeted linguistic systems.

Aim: A bilingual child's phonologies at the lexical level are compared with the phonological distributions of common words in the respective targeted languages to highlight phonological frequency similarity/difference patterns between targets and produced child speech.

Method: Following parental consent, a Greek-English bilingual child's spontaneous productions at 2;7 were IPA transcribed and aligned to audios in CHAT files (MacWhinney, 2000) totaling 540 Greek and 317 English words. The child's lexical/phonological inventories are compared with the one thousand most common words in the languages (https://1000mostcommonwords.com).

Results: Greek and English words differ in word length (phoneme-syllable ratios: English 0.684, Greek 0.5), consonants-per-syllable (English 0.653, Greek 0.525), syllable distributions (English monosyllables 66%, Greek multisyllabic words 70%), syllable types (Greek CV 60%, V, CCV, CVC 10% each; English CVC 43%, CV, VC, CVCC, CCVC 10% each). There is overall word complexity similarity in both languages: 55% singleton-consonant words, 40% 1-cluster words, and 5% 2-cluster words. There is dissimilarity in the phonotactic distribution of consonants: Greek has 22% word-initial and 7.4% word-final Cs, and English has 33% in each category. The child's usage distributions are compared to these results (e.g., English monosyllables: common 66.2%, child 65%; Greek monosyllables: common 4.7%, child 10.5%) informing how language-specific phonological complexity affects early cross-linguistic phonological performance.

Conclusions: Greek and English are phonologically dissimilar at the syllable and word level. The bilingual's words are phonologically similar to the targeted most frequent words per language. Results show the self-similarity of child to adult language and how cross-linguistic differences impact phonological acquisition, informing bilingual clinical assessment/intervention strategies and second-language teaching methods.

Implications for children and families: You will find that the quality and quantity of parental and societal input in a language can substantially affect the speed, length, and success of bilingual speech acquisition in a child.

Implications for practitioners: You should determine the child's and parents' sociolinguistic context holistically, considering the role of context-specific quality and quantity of input in the multilingual child's languages alongside individual language frequency specificities to disentangle a bilingual child's typical from atypical patterns of speech development. You will use such information to guide your clinical provision and educational instruction protocols.

Keywords: children's voices, families' voices, language input, frequency, communication, quantitative methods, multilingual

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 1: No Poverty
- SDG 3: Good Health and Well-being
- SDG 4: Quality Education

ECV2024-433

Caregiver implemented intervention for early communication development: A review of evidence for Hanen® programs

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Background: The evidence-based Hanen® programs support caregivers of children with communication needs to learn optimal ways to respond to children in everyday interactions and facilitate child-oriented strategies that promote interaction and language modelling.

Aim: To evaluate peer-reviewed literature on Hanen® programs with regards to the credibility, nature, and quality of the research findings and suggest implications for global contexts where Hanen® professionals practice.

Method: There were 196 papers about Hanen® programs imported into Covidence™ and 63 papers met the inclusion criteria. The Preferred Reporting Items for Systematic reviews and Meta-Analysis (PRISMA) protocol was employed to determine the nature of existing research. Levels of evidence were rated, efficacy and effectiveness reviewed, and quality rating tools were employed.

Results: Most studies related to two (of seven) Hanen® programs (It Takes Two To Talk and More Than Words) conducted across nine countries, using randomised controlled trials, case-series, case-control, cohort, and qualitative methods. The studies reported on dyad interactions; child language, behaviour, and autism; and caregiver perceptions, stress, and self-efficacy. Most were efficacy studies, and some were (perceived) effectiveness studies. A few studies tested adaptations of Hanen® programs (e.g., telehealth).

Conclusions: A range of evidence supports Hanen® use in its original form. Effectiveness in the real world relies on future research evaluating content adaptations to meet the needs of diverse contexts.

Implications for children and families: Some children have language-learning difficulties. Hanen® programs offer a range of evidence for supporting children's communication.

Implications for practitioners: This presentation provides practitioners with an understanding of the evidence regarding Hanen™ when assisting families.

Funding: Australian Postgraduate Awards (APA).

Key words: children, families, professionals, communication, interdisciplinary, review

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-434

Using adapted scoring to increase utility of the Expressive Vocabulary Test within a multilingual context

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Background: Multilingual children living in English-dominant environments may be at risk of misdiagnosis of language disorder. This risk is attributed to the paucity of research on typical multilingual development and over-reliance on standardised measures normed using monolingual English-speakers to inform disorder versus development. In response to this problem, this study aims to inform multilingual children's response patterns to create adapted scoring protocols for the Expressive Vocabulary Test (EVT) within the Jamaican context and by consequence reduce the risk of misdiagnosis of language disorder among speech-language pathologists (SLPs).

Method: Following ethical approval (REB#00043534), Jamaican Creole (JC)-English-speaking 4-to-5-year-olds (*n*=27) completed the EVT in English for the Jamaican Creole Language Project. Children's responses were analysed for patterns and organised into three culturally-responsive categories ('acceptable', 'partially acceptable', and 'not acceptable') as was informed by JC-English-speaking adults. A final "adapted scoring" procedure was then created. Children's EVT raw scores were calculated using traditional scoring and adapted scoring procedures. Statistical analysis was completed to assess for differences in raw scores and ceiling scores.

Results: Response patterns related to culturally-influenced semantic variations were observed in JC-English children's responses to the EVT. A Wilcoxon Signed-Rank test revealed a statistically significant difference between the raw scores (p=<0.001) and ceiling scores (p=<0.001) for traditional and adapted scoring protocols in favour of adapted scoring.

Conclusions: Using adapted scoring informed by children's response patterns and adult input more accurately characterised vocabulary performance for JC-English 4-to-5-year-olds.

Implications for children and families: Providing an adult model, or acceptability judgement, when evaluating vocabulary performance will help to calibrate SLPs' interpretation of your child's word knowledge.

Implications for practitioners: Involving family members or members of the same linguistic community as your client can inform the interpretation of your expressive vocabulary performance within multilingual contexts.

Funding: National Institutes on Deafness and Other Communication Disorders 1R21DC018170-01A1 (PI-Washington).

Key words: communication, families' voices, multilingual

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 10: Reduced Inequality

ECV2024-435

Amplifying children's voices using drawings and the Speech Participation and Activity Assessment of Children

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Background: Listening to children's voices and including them as active participants in their care, is an important aspect of speech and language assessments. Creative tools are necessary to support SLPs in this effort. Two promising tools include the Sound Effects Study Drawing Protocol (SESDP) and the Speech Participation and Activity Assessment of Children (SPAA-C). Despite the utility of these tools, limited studies have examined their use within multilingual contexts. This study aimed to understand the contributions of these tools in a Jamaican context by examining children's drawings using the SESDP in conjunction with the SPAA-C.

Method: Four pairs of age-matched Jamaican Creole-English-speaking preschoolers completed the SESDP and the SPAA-C in both languages. Each pair included one child with and without developmental language disorder (DLD). Themes, focal points, and SPAA-C responses were qualitatively analysed to understand each child's individual communication experience, examine connections across tools, and assess variations in responses from children with and without DLD. Ethical approval (REB#00043534), parental consent, and child assent were obtained before starting study activities.

Results: The findings demonstrated mixed consistency of attitudes and emotions expressed across both tools. While most preschoolers reported being happy when communicating, variations were observed. The results suggest that including both tools offers a more complete representation of a Jamaican preschooler's communicative experience.

Conclusions: The use of the SPAA-C and drawings are complementary in allowing preschoolers to express themselves in a way that empowers their human right to communicate.

Implications for children and families: No matter how old you are, you have the right to share your ideas and feelings. These tools can help you share your experiences!

Implications for practitioners: Using creative tools, like the SPAA-C or drawings, can amplify your clients' voices, promote their active involvement, and help you to better understand their nuanced experiences within multilingual contexts.

Funding: Jamaican Creole Language Gift Fund and Canadian Institutes of Health Research.

Key words: children's voices, international communities, well-being, communication, multilingual

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 10: Reduced Inequality

ECV2024-436

Grieving play

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Background: The impact of time spent without play in educational settings, where the focus is predominantly on academic achievement rather than play, is often neglected. More exploration of the notions of power in educational settings (power over agency to play) is required. This research addresses this gap by amplifying the voices of younger children in relation to how they perceive play in their lives, the lack of play in educational settings due to power dynamics and permission, and how this affects their mental health.

Aim: The aim of the research was to hear from children about the impacts and influences on their play and mental health.

Method: The methodology used was hermeneutic phenomenology with the hermeneutic circle, lending a qualitative, interpretive approach. The participants were 40 children aged between 4 and 6 in England in preschool and school settings. The Mosaic Approach was implemented to capture children's voices authentically with thematic analysis. Plymouth Marjon University and BERA ethics were followed, and Plymouth Marjon University gave ethical clearance.

Results: The findings showcased that children starting school are grieving for the amount of play that they used to have and that the reduction in play time is impacting their mental health. In England, under the Early Years Foundation Stage (EYFS) framework, which is used in early years settings and in the foundation stage of schools, play must be planned and purposeful, thus refuting the child's agency in free and unencumbered play that occurs when there is no expectation of outcomes. In school settings, the traditional playtime where children go outside is limited to 15 minutes in the morning and afternoon and 30 to 40 minutes at lunchtime. Again, these outside opportunities are constrained by the practitioners and general practice, resources are minimal, and if it rains, there is no outside time at all.

Conclusions: A change in how play is viewed politically, socially, and culturally is required, along with effectively embedding children's play into everyday educational practice.

Implications for children and families: Without true unencumbered play in educational settings, children are sad, and this impacts relationships and well-being.

Implications for practitioners: A continual change in practice is needed, where children's play is front and centre and underpinned by an understanding of the link between learning, play and mental health.

Key words: children's voices, education, government and policy, health, qualitative methods, well-being

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education

ECV2024-437

The application of participatory health research to identify the research priorities of children who stutter

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Background: The role of participatory health research (PHR) is increasingly endorsed by researchers, funding bodies, and civil society generally. Despite this, it continues to be an under-represented research approach in the speech and language therapy (SLT) research literature, and even more so in the stuttering-specific literature. This cooperative approach to research is associated with wide-ranging benefits, including a reduction in the research-practice gap, and positive impacts for practice, policy, and society.

Aim: This presentation aims to increase researchers' and clinicians' understanding of PHR, and to demonstrate its applicability to research exploring the voices of children who stutter.

Method: This aim is achieved through a discussion on PHR with children who stutter, and its underlying principles, advantages and challenges. Examples of current projects that are collecting the research priorities of children who stutter will also be presented.

Results: This presentation will serve as an important discussion on the value of PHR to research with children who stutter and will present guidance to facilitate its increased implementation in this research field.

Conclusions: PHR remains an under-represented research approach in the stuttering literature despite growing evidence revealing its value and effectiveness. It offers an avenue for the collection of the under-represented voices of children who stutter and challenges continuing research hierarchies by democratising the practice of knowledge production.

Implications for children and families: You and your families are experts on the lived experience of stuttering and therefore possess essential knowledge to inform the future directions of research in the area.

Implications for practitioners: You play a pivotal role as co-researchers in PHR, and it is therefore imperative that you understand the principles and practices of this approach to support the collection of children's voices in research studies.

Key words: children's voices, stuttering, families' voices, communication, health, theory

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 17: Partnerships to Achieve the Goals

ECV2024-438

Conceptualising risk-taking in educational settings for enabling pedagogies of courage

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Background: Despite education discourses promoting risk-taking as a positive character trait, Australia has been identified as one of the most risk-averse countries in the developed world. This begs the question, why are Australians so risk averse? One reason may be a lack of common language and understanding of risk-taking and an absence of risk-taking culture in Australian educational settings.

Aim: To understand how risk-taking is/is not included in Australian curriculum documentation and introduce the terms *pedagogical risk-taking* and *pedagogies of courage* as a framework for helping build a culture of risk-taking in educational settings.

Method: Document analysis of the Early Years Learning Framework and the Victorian Curriculum.

Results: The analysis reveals some positive inclusions and concerning silences regarding the terms risk, risky play and risk-taking; e.g., risky play for children is encouraged in the Early Years Learning Framework but there is no evidence of this in the Victorian Curriculum. There is no evidence of promoting risk-taking for educators.

Conclusions: Common language and shared understanding will enable a culture of risk-taking in Australian educational contexts – and provide a solid foundation for Australians to become courageous contributors to a socially just society.

Implications for children and families: You will benefit by having a deeper understanding of risk-taking in educational contexts, thus helping you to develop risk-taking skills and courage that will be beneficial throughout your life.

Implications for practitioners: You will have a common language to use with children and families so that you can work together to develop risk-taking skills and courage for children and in your own professional practice.

Key words: education, innovation, well-being, risk, brave, courageous, agency, transformation

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 9: Industry, Innovation and Infrastructure
- SDG 10: Reduced Inequality
- SDG 16: Peace and Justice Strong Institutions
- SDG 17: Partnerships to Achieve the Goals

ECV2024-439

The alignment of Swedish speech-language pathology services with the everyday language and communication abilities of children with developmental language disorder

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Background: The importance of speech-language pathology (SLP) services targeting abilities relevant to the child's everyday communication has been emphasised by caregivers of children with developmental language disorder (DLD) and SLPs. However, SLPs in Sweden traditionally meet children with DLD at SLP clinics rather than in the child's everyday context.

Aim: To explore Swedish SLP services provided to children with DLD, focusing on the possibilities and challenges in targeting children's everyday language and communication.

Method: Two studies were conducted: the first comprised a web-based questionnaire, to which 163 SLPs responded, and the second employed online focus groups with 15 SLPs participating. Descriptive statistics were calculated for the multiple-choice questions in the questionnaire. The free-text questions and the focus group discussions were analysed using thematic analysis. The studies were approved by the Swedish Ethical Review Authority. The SLPs who took part in the focus groups gave their written consent to participate.

Results: The SLPs viewed themselves as detached from the children's everyday context. Collaboration with caregivers and (pre)school staff was emphasised, but the SLPs often experienced a gap between different stakeholders which was a challenge for providing the most appropriate care. The services the SLPs could offer varied and were regulated by local routines.

Conclusions: SLP services' alignment to children's everyday lives depends on the contributions of caregivers and (pre)school staff. However, collaboration is often restricted by organisational constraints. It is essential that SLPs have the time and resources to ensure a supportive and well-functioning collaboration with the different stakeholders.

Implications for children and families: As a caregiver, you are the most important collaborative partner for SLPs in providing individualised services relevant to everyday life for your child.

Implications for practitioners: As an SLP, you must have the time and resources to guide caregivers to become empowered collaboration partners, ensuring that the services provided focus on skills relevant to the child.

Key words: professionals' voices, developmental language disorder, speech-language pathology services, everyday life, ecological validity, communication

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 10: Reduced Inequality

ECV2024-440

Parents' and caregivers' supporting early communication development in Australia

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Background: Communication impacts many aspects of a child's life, including future academic success, competence with reading and writing, formation of relationships, advocacy for healthcare treatment, legal support as well as future employment. Children's communication development is largely shaped by input from key adults in the early childhood years.

Aim: This research investigated parents' and caregivers' knowledge, experiences, and attitudes toward supporting children's early childhood development in home, education, and community environments.

Method: Participants were 435 Australian parents and caregivers who undertook an online survey that examined their parenting experience using 28 Likert scale questions. Data were analysed using factor analysis and inferential statistics in SPSS. Factor analysis identified eight factors related to different facets of children's development. Participants' responses to each of these factors were compared with demographic variables including age, sex, highest qualification, and income. This study was approved by the Charles Sturt University Human Research Ethics Committee (Protocol Number 19379).

Results: Among the significant findings, participants with the highest expressed confidence in supporting early communication development were typically female, older, and had three or more children. Conversely, speaking a language other than English, living in a rural or remote location, and having a lower income and lower level of qualification all negatively impacted participants' ability to access services to support their children's development. This study highlights that parents and caregivers understand the important role they play in supporting communication development.

Conclusions: While parents and caregivers may be able to identify the need for formal communication support, barriers remain that impact the ability to access such services. Parents and caregivers need to feel safe and represented in their community to access services.

Implications for children and families: You know your child best, so there needs to be an alliance between the caregivers, clinicians and early childhood professionals to support early childhood communication development.

Implications for practitioners: You need to tailor your intervention to the people who engage with your services and link clients to community support.

Key words: families' voices, communication, community services, early literacy, health, quantitative methods, regional/rural communities, well-being

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-441
Young children's behavioural engagement while using augmented reality (AR) smart glasses in learning

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Background: Augmented Reality (AR) technology in education has shown promising results in enhancing student learning experiences. It provides students with hands-on experiences and simulates real-world scenarios that are difficult to recreate or present in a classroom setting. AR technology helps students better understand complex concepts by providing them with a visual representation of abstract or difficult-to-grasp ideas. Moreover, it can make the learning experience more interactive and engaging by providing students with a visual and immersive experience, effectively impacting their motivation. Understanding children's behaviour in AR-enhanced learning environments is essential for educators and parents to implement AR technology effectively in children's education.

Aim: This research aimed to study the impact of AR technology on young children's behavioural engagement, including behaviour patterns during AR educational activities.

Method: This research obtained ethical clearance. With the consent from the school principal, teachers, and parents, 87 Year 1/2 students participated in the AR implemented class of Dinosaur World. Pre- and post-drawing was used to capture all the participating Year 1/2 students' understandings of the conceptual topic.

Results: Key findings include a) participating children demonstrated high levels of behavioural engagement when using AR smart glasses in learning, b) high behavioural engagement was indicated by the children's active interactions with the technologies, such as AR glasses and iPads, and c) high frequencies of peer verbal interactions were also shown in teaching and learning process.

Conclusion: Children's drawings showed AR smart glasses have significantly impacted young children's behavioural engagement in teaching and learning.

Implications for children and families: This study's findings can guide parents in understanding AR technology in young children's immersive learning.

Implications for practitioners: This study's findings can guide educators in developing effective strategies for incorporating AR technology into children's behavioural engagement in learning.

Funding: The AR smart glasses used in this research were funded by ROKID Inc.

Key words: children's voices, education, innovation

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 4: Quality Education
- SDG 9: Industry, Innovation and Infrastructure
- SDG 17: Partnerships to Achieve the Goals

ECV2024-442

Leading in rural and remote early childhood education and care in Australia and Sweden: A comparative analysis through the lens of the education complex

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Background: This presentation shares the findings of a comparative study exploring and analysing the context and complexity for leading early childhood education in rural and remote areas of Australia and Sweden. Such a study helps identify patterns, anomalies and outliers concerning workforce sustainability, availability of resourcing and policy contexts for rural and remote regions that enable and constrain the cultivation and development of leadership.

Aim: The study investigates the conditions and arrangements for leadership development in rural and remote Australia and Sweden.

Method: To reveal these arrangements, jurisdictional conditions for rural and remote ECE leadership development were analysed in a case study re-analysis methodology through the theoretical lens of the theory of practice architectures and the education complex. The education complex refers to five educational practices that have arisen in response to mass schooling. Similarly, the five interrelated core practices and arrangements emerge in response to the rise of early childhood education and the context within which education occurs. The five core practices are children's learning and practice, pedagogy, professional learning, education policy and administration, leadership and research and quality assessment.

Results: This examination reveals opportunities for transformation that enhance leadership emergence and practice and children's access to high-quality education in rural and remote regions in Australia and Sweden. The findings also provide a context for a future study of leadership development in early childhood education within rural and remote regions.

Conclusions: This study illuminates the policy context and practice complexity for leading ECEC in rural and remote areas of Australia and Sweden for delivering high-quality settings for children. New insights are revealed regarding conditions and arrangements for the cultivation and development of leadership through the theoretical analysis of the education complex within the theory of practice architectures and demonstrates the possibilities for interventions and transformations. Additionally, the findings of the comparative study now provide a contextual foundation for a qualitative study of enabling and constraining arrangements for ECEC leadership in rural and remote contexts.

Implications for children and families: Favourable conditions for leadership development and therefore high-quality early childhood education and care in Australia and Sweden.

Implications for practitioners: Improved understanding of the policy and practice context for the development of leadership in rural and remote early childhood education and care settings.

Key words: professionals' voices, qualitative methods, regional/rural communities, theory, workforce issues

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 4: Quality Education
- SDG 11: Sustainable Cities and Communities

ECV2024-443

Adaptation of the Early Childhood Voices Drawing Protocol for collecting children's experiences of play

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Background: Children's creative works, like drawing, are increasingly used as an innovative method for researchers, practitioners and policymakers to understand children's experiences of the world. The Early Childhood Voices Drawing Protocol was developed as a virtual data elicitation tool to collect and analyse children's drawings of themselves talking. The Children Draw Talking Global Online Gallery (https://earlychildhoodresearch.csu.domains/early-childhood-voices-conference-2022/children-draw-talking-gallery-1-the-world/) provided valuable insights into children's perspectives about talking as well as their knowledge of concepts related to the United Nations Sustainability Development Goals. To date, the ECVDP has been successfully used to elicit and analyse children's drawings of talking; however, the versatility of the protocol to other activities is unknown. For example, play is an important daily activity for children's learning and social connection in the world.

Aim: To adapt the ECVDP so that it may be used to validly analyse children's experiences of activities of daily living.

Method: Child participatory action research methods were applied to ensure children's voices were respected in adapting the original protocol. Purposive sampling of children who had participated in the previous Children Draw Talking research identified seven Australian children aged 4–10 years who became the research advisory panel. The children's panel, in conjunction with members of the Charles Sturt University Early Childhood Interdisciplinary Research Group, consulted, planned, and piloted an adaptation of the ECVDP.

Results: During the consultation phase, the children's advisory group recommended children draw themselves playing. The planning phase involved the researchers reviewing strengths and limitations to revise the ECVDP. The revised ECVDP was trialled with ten children. Feedback on the usability of the ECVDP was discussed with the children on the advisory board and incorporated. Questions were adapted to accommodate playing (rather than talking) as the focus, and children were invited to draw or create an image to accommodate children who were unable to or did not enjoy drawing (e.g., children with vision impairment). The ECVDP has been used to collect insights about children's playing for the Early Childhood Voices Conference 2024 (ECV2024). Children's submitted artworks will be analysed using the analysis tools within the ECVDP.

Conclusions: The Early Childhood Voices Drawing Protocol appears to be a promising tool that can be adapted to collect drawings from children virtually depicting daily activities in their lives (e.g., talking and play). Understanding how children of all abilities experience play will help educators and others develop child-directed play activities.

Implications for children and families: Creative activities such as drawing allow children of all communication abilities to share their thoughts about activities of daily living such as play.

Implications for practitioners: Drawings and analysis tools such as the ECVDP seek to create opportunities for children to voice their opinions about activities of daily living in ways that support diverse communication abilities. Arts-based methods such as drawing may reduce power imbalances in these clinical interactions.

Funding: This research was undertaken by members of the Early Childhood Interdisciplinary Research Group funded by the Charles Sturt University Sturt Scheme.

Key words: children's voices, innovation, communication, international communities, qualitative methods, quantitative methods

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-444

“All I want for my child is to be confident in their heritage and who they are”: Using parent manifesto framework for supporting strong home-school partnerships for newcomer families

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Background: The number of immigrant and refugee families in Canada is rising significantly. Fostering strong home-school partnerships between families and early learning and childcare (ELCC) providers becomes a critical investment to ensure equitable and inclusive experiences for all Canadian children. Previous studies show how ELCC can be unresponsive to the cultural needs and lived experiences of newcomer families, leading to the families feeling undervalued and excluded.

Aim: This research study explores how a community co-designed tool, Parent Manifesto, was used by newcomer parents in building relationships with the child’s early childhood educators (ECEs) and advocating for their children’s cultural and educational needs.

Method: Twenty-two parents of preschool children from three ethnocultural communities in Edmonton: Franco-African, Vietnamese and Chinese, participated in this qualitative study. The written and audio-visual responses on the Parent Manifesto in French, Vietnamese and Mandarin were translated and the data was analysed by generating themes by identifying, labelling, and coding recurring ideas.

Results: Through the Manifesto, parents conveyed their aspirations for their child, shared the challenges they face as newcomers to Canada, and suggested empowering ways the child can learn about, retain, and be proud of their home culture and language.

Implications for children and families: As a parent, the Parent Manifesto can contribute to democratising the home-school partnership. This tool can provide opportunities for honest conversations between you and your childcare provider.

Implications for practitioners: The Parent Manifesto is a new tool for creating inclusive early learning classrooms and pivoting learning activities to suit the needs of children in culturally responsive and sustaining ways.

Funding: Edmonton Council for Early Learning and Care.

Key words: families’ voices, communication, education, qualitative methods, newcomer populations, vulnerable communities, well-being

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-445

Enhancing phonological skills in Persian-speaking children with social communication disorder through narrative intervention

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Background: Children with social communication disorder (SCD) often experience difficulties with indirect language and oral and nonverbal communication, leading to language delay and impairments. Research has explored phonological development in typically developing (TD) Persian-speaking children, but there is limited information on how developing phonologies in children with SCD are impacted.

Aim: This study aims to evaluate the effects of narrative intervention on phonological skills at the utterance, word, syllable, and segmental levels, using the following measures: mean length of utterance in words (MLUw), syllable count match (SCM), percentage of consonants correct (PCC), phonological mean length of utterance (pMLU), proportion of whole-word proximity (PWP), and word-final cluster accuracy in Persian-speaking children with SCD.

Method: Three Persian-speaking boys with SCD, aged between 3;6 and 5;0, participated in the study, following parental consent as per ethical procedures. Personalised narrative intervention was used. Speech data were collected longitudinally during an Initial, Treatment, and Maintenance phase of 3, 12, and 3 sessions per phase. Phonetic transcriptions and audio recordings were aligned using Phon. Intervention effects were assessed by gauging changes in MLUw, SCM, PCC, pMLU, PWP, and word-final cluster accuracy.

Results: The participants' MLU and SCM scores improved by the Maintenance phase. Initial MLU scores were 3.57, 3.48, and 2.42, improving to 6.46, 5.53, and 2.53, respectively. SCM scores also increased from 99.54%, 98%, and 96.88% to 99.94%, 98.64%, and 99.17%. PCC, pMLU, and PWP scores improved across all participants, with the greatest gains observed in the child with initially less intelligible speech. Cluster reductions, common in phonological development, decreased following the intervention. Children exhibited variable consonant cluster productions. Cluster accuracy improved over time.

Conclusion: Narrative intervention significantly improved phonological skills. Our findings suggest that individualised narrative-based intervention enhances language and phonological development. Further research is needed to optimise intervention strategies and explore their applicability to larger populations and other linguistic skills. The study provides valuable insights for clinical practice, highlighting the potential of narrative interventions to support phonological development in children with SCD.

Implications for Children and Families: Incorporating storytelling and personalised narratives into daily activities can significantly improve language and speech development in children with social communication disorder (SCD). You are encouraged to engage in narrative-based interventions at home, guided by speech-language pathologists, to reinforce progress made during clinical sessions, to celebrate incremental progress and to contribute to your child's speech and language development. Such interventions provide a holistic and engaging way to improve your child's social interactions and quality of life.

Implications for Practitioners: The study highlights the effectiveness of narrative intervention for children with social communication disorder (SCD). It suggests incorporating personalised narrative approaches into therapeutic practices and conducting longitudinal assessments to track progress. The individualised nature of narrative intervention can be tailored to meet the specific needs of individual children. Engaging families in the intervention process and fostering a collaborative approach between the practitioner and the family is also important. Thus, integrating narrative intervention into clinical practice offers a promising avenue for enhancing the phonological skills of children with SCD during language development.

Key words: children's voices, communication, phonological development, social communication disorder, Persian, professional voices, innovation, well-being

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 1: No Poverty
- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality

ECV2024-446
Development of a culturally appropriate Ghanaian English speech and language assessment tool

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Background: Speech and language disorders can significantly affect children's academic and social lives during their early years in school. Early detection and intervention are important to mitigate the impact of speech and language disorders. Appropriate assessment tools are required to accurately assess the speech and language skills of multilingual children. Speech-language pathologists (SLPs) in Ghana lack culturally appropriate assessment tools to accurately identify speech and language disorders in children.

Aim: This study aimed to develop a culturally appropriate assessment tool to identify speech and language disorders in Ghanaian English-speaking children.

Methods: This study employed an exploratory mixed-method design to develop the tool in three phases: (1) Developing a speech and language assessment tool; (2) Piloting the tool; (3) Collecting data from 100 children to standardise the tool.

Results: The first Ghanaian English speech and language assessment tool for children between ages 5 and 10 was developed based on qualitative and quantitative data. Subtests, scoring, administration and test stimuli will be shared during this presentation.

Conclusions: This presentation provides a framework for developing culturally appropriate speech and language assessment tools for multilingual children. It also provides SLPs, children and their families with a culturally appropriate tool to identify speech and language disorders in Ghana.

Implications for children and families: Culturally and linguistically appropriate assessment tools will enable you to receive an accurate assessment of your speech and language abilities so that help can be provided for your communication if needed.

Implications for practitioners: You can use this tool as a model for the development of culturally-responsive speech and language assessment tools in languages and contexts that do not currently have tools available. You can also learn about the best methods to accurately assess multilingual children's communication development.

Key words: children's voices, professionals' voices, communication, health, qualitative methods, quantitative methods, assessment

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality

ECV2024-447

Inclusive STEAM Pedagogy in Chinese preschools in Wenzhou: A qualitative exploration of teacher practices

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Background: This study builds on the growing recognition of the importance of STEAM (Science, Technology, Engineering, Arts, and Mathematics) pedagogy in early childhood education, particularly emphasising the active involvement of all students, including children from diverse backgrounds and those with disabilities. Inclusive STEAM pedagogy aims to address the varied learning needs of all children, creating an environment in which every child can participate and develop their academic skills related to STEAM. This study was conducted in Wenzhou, China, a significant location due to its initiatives to implement inclusive practices in early childhood education settings.

Aim: This study aims to examine how inclusive STEAM pedagogy can be effectively implemented in early childhood education settings to address the diverse learning needs of all children, including those from varied backgrounds and with disabilities. Additionally, the study explores teachers' perceptions of evidence-based practices in implementing inclusive STEAM pedagogy, aiming to identify and understand the challenges they encounter and the strategies they employ while integrating these methods in their classrooms.

Method: This study employed qualitative research methods and applied multiple techniques to collect data, including classroom observations, analysis of lesson plans, and semi-structured interviews. Fifteen teachers participated, each from one of the five Kindergartens situated in the suburban area of Wenzhou, China, known for its promotion of inclusive education. This study was reviewed and approved by the Wenzhou-Kean University Ethics Committee.

Results: The findings reveal that while teachers recognise the importance of inclusive STEAM pedagogy, they encounter several significant obstacles. These include limited access to resources necessary for effective STEAM instruction, inadequate professional development opportunities to equip them with the required skills and knowledge, and uneven educational support from administrators and policymakers. These challenges hinder the successful integration of inclusive STEAM practices in early childhood education settings.

Conclusions: The study underscores the necessity for enhanced training programs and resource allocation to better support educators in adopting inclusive practices. Recommendations include increasing professional development opportunities, improving access to teaching materials, and fostering a more collaborative approach to implementing inclusive STEAM pedagogy.

Implications for children and families: By supporting teachers with better training and resources, we can create more exciting and inclusive STEAM learning experiences for you and your children, helping everyone to learn and grow together.

Implications for practitioners: This study has implications for practitioners by emphasising the need for enhanced training programs and resource allocation, enabling you to more effectively implement inclusive STEAM pedagogy and create a supportive learning environment for all students.

Key words: education, qualitative methods, theory, inclusive STEAM pedagogy, teachers' perceptions, preschool/early childhood education

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 16: Peace and Justice Strong Institutions

ECV2024-448

Morphosyntactic and semantic measures in Bilingual Azeri-Persian-speaking children with and without language impairment

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Background: Due to the increasing number of multilingual/bilingual speakers worldwide, indicators and clinical markers for distinguishing language disorder from difference are required.

Aim: Due to the lack of a suitable instrument for evaluating linguistic skills in bilingual children, this study aimed to investigate the importance of morphosyntactic and semantic measures in bilingual Azeri-Persian-speaking children aged 5.5 to 6.5 years with and without language impairment.

Method: In this cross-sectional study, the recruited bilingual participants, whose parents signed an informed consent, were 30 children with language impairment (LI) and 15 children without language impairment (WLI) who were selected from nurseries and speech therapy clinics. Language samples were collected through storytelling in Azeri and Persian. Linguistic analysis was completed based on morphosyntactic and semantic parameters. The Alberta Language and Development Questionnaire (ALDeQ) parent report questionnaire was administered to differentiate language impairment from language differences.

Results: Study findings revealed a significant difference between the scores of morphosyntactic and semantic measures between bilingual Azeri-Persian-speaking LI and WLI children ($p<0.05$).

Conclusions: The results indicate that morphosyntactic and semantic parameters of language samples in bilingual Azeri-Persian-speaking children could be utilised to provide diagnostic information for speech and language pathologists with LI children in bilingual Azeri-Persian communities.

Implications for children and families: Learning two languages does not confuse children. Families of bilingual children should be aware of the vocabulary and completeness of their child's speech production in both of their languages.

Implications for practitioners: You can utilise morphosyntactic parameters, including the mean length of T-Unit (MLTU), number of grammatical errors per T-unit (NETU), and semantic features including the number of total words (NTW) and number of different words (NDW) when diagnosing language disorder from difference.

Key words: language impairment, morphosyntactic measures, semantic measures, multilingualism

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education

ECV2024-449

Dual language dynamics: Insights from bilingual students with developmental disabilities in Alberta's French-language schools

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Background: Parents of children with developmental disabilities (DDs) are often advised against raising their child bilingual, despite evidence showing that bilingualism is achievable and beneficial for these children. Most of this prior research has focused on children with DDs learning a second language (L2) through bilingual programs. However, with rising international migration, many children with DDs now speak a first language (L1) different from their school's language of instruction. Thus, these students also learn an L2 in mainstream schools that were not originally designed to be bilingual or for L2 acquisition.

Aim: This study aims to investigate the language profiles and experiences of primary school students with DDs attending French-language schools in Alberta. While these schools were originally designed for French L1 speakers who are growing up in a language minority context, now 50% of students come from immigrant backgrounds, speaking an L1 other than, or in addition to, French.

Method: Participants will include students with DDs aged 5–12 who speak a language in addition to French who are attending French-language schools. We will also include their parents, teachers, and speech-language pathologists (SLPs). The study will collect language samples in each student's language. Additionally, we will conduct one-on-one semi-structured interviews, which will undergo thematic analysis with parents, teachers, SLPs and students to explore their experiences and the challenges and opportunities they face. We have received ethical approval from our university's ethics board.

Results: Anticipated results are predicted to align with previous research that bilingualism is achievable and beneficial for children with DD despite some likely challenges specific to learning an additional language at a school not originally intended for L2 acquisition. Further, by working with the diverse school population of Albertan Francophone schools, we expect important cultural considerations about learning French as an L2 with a DD to also be revealed.

Conclusions: In sum, this study will enhance our current understanding of bilingual education for children with DDs by exploring crucial cultural and contextual factors that educators, SLPs, and parents should consider on this journey. Ultimately, it will better equip them with the tools to make evidence-based decisions and recommendations.

Implications for children and families: Whether or not you have a child with a developmental disability, this project will help advocate for and better support the inclusion of diverse students with DDs learning a second language at school.

Implications for practitioners: The findings will help you make evidence-based recommendations to parents regarding raising their child with a DD as bilingual, which also considers important cultural and contextual factors.

Key words: children's voices, families' voices, professionals' voices, qualitative methods, quantitative methods, bilingualism, multilingualism, developmental disabilities, education

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 16: Peace and Justice Strong Institutions
- SDG 17: Partnerships to Achieve the Goals

ECV2024-450

Exploring inclusion in early years education using a cultural-historical theoretical lens

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Background: Rigorous research is needed to create supportive and inclusive learning environments for all children. Transformative inclusion (inclusion for all) considers every individual in terms of academic, social, psychological, and cultural inclusion, regardless of any differences. The role of culture, environment, age, tools, knowledgeable individuals, social situation and interaction to cultivate the potential of the whole person as a child is emphasised by Vygotsky's theory. How this theoretical lens addresses inclusion needs to be explored further.

Aim: Through a narrative review, this study explores transformative inclusion using a cultural-historical theoretical lens.

Method: An in-depth literature analysis was conducted to produce a comprehensive narrative review. The review sought to critically examine the available literature on inclusion by Vygotsky and contemporary writers to explore theoretical baselines for transformative inclusion.

Results: A conceptual framework was developed to map cultural-historical theory concepts to practice transformative inclusion consisting of four components: creating an inclusive learning environment during children's playtime, utilising inclusive mediators and cultural tools, and creating a zone of proximal development in support of inclusion to foster higher mental function and *Perezhivanie* through inclusion. These contribute to children feeling included and valued for their diverse individualities, ensuring holistic development and equity for all.

Conclusions: The learning environment can ensure the holistic development of all children, ensuring higher mental functions and equity for all through practising transformative inclusion based on the proposed conceptual framework.

Implications for children and families: By implementing transformative inclusion based on the proposed conceptual framework, children and families are potentially more authentically included regardless of any differences within the learning environment and beyond.

Implications for practitioners: The conceptual framework can support educators and practitioners in creating pedagogical models to foster inclusion in the early years, aligning with the Early Years Learning Framework and its Planning Cycle (2022) to promote inclusion for all.

Funding: This study is funded by the AGRTP (Australian Government Research Training Program (International) Scholarship.

Key words: inclusion, early years education, education, review, theory

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 4: Quality Education
- SDG 5: Gender Equality
- SDG 10: Reduced Inequality
- SDG 16: Peace and Justice Strong Institutions

ECV2024-451

Harnessing the power of lived experience by involving adults with childhood onset disabilities in research: Learnings from a researcher and adult with developmental language disorder

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Background: We are co-designing a new intervention for preschool children with co-occurring features of developmental language disorder (DLD) and Speech Sound Disorder (SSD). The project steering group consists of professionals and people with lived experience, including an adult with DLD (Sophie, co-author). DLD in adulthood can be characterised by difficulties with understanding and using spoken language, as well as broader difficulties in areas such as working memory.

Aim: To adapt the co-design process to meaningfully integrate the experiences and opinions of an adult with a childhood onset disability into a new, complex, theory-based intervention for children with co-occurring DLD/SSD features.

Method: An impact log has been used throughout the intervention development process to monitor involvement. Driscoll's 'what' reflective cycle has been used *('what? – so what? – now what?')* by the researcher (Lucy) and Sophie to identify barriers and enablers to participation during the co-design process so that solutions can be identified and acted on.

Ethical approval – City University of London (application ID ETH2223-1673).

Results: Enablers include other steering group members being sympathetic and understanding DLD, and the opportunity for individual (as well as group) meetings with the researcher. Barriers include having to process large amounts of information and remembering meeting times. Helpful strategies include providing adapted 'DLD friendly' written information and sending meeting reminders.

Conclusions: Adults with childhood onset disabilities, including those with DLD, bring valuable lived experience to paediatric intervention research. However, appropriate planning and individualised support need to take place to enable full participation.

Implications for children and families: You will see an example of how I (Sophie – an adult with DLD) have influenced important research. You may want to take part in research after hearing more about my experience.

Implications for practitioners: You will have practical ideas for how to involve adults with childhood onset communication needs in research or professional projects.

Funding: This research was funded by the Wellcome Trust (Grant number 223500/Z/21/Z).

Key words: Children's voices, communication, health, innovation

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-452

Examining scientific literacy in the early years: A document review of the Early Years Learning Framework (EYLF) for Australia

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Background: Scientific literacy is the combination of acquiring science content knowledge, associating this knowledge with real-world activity, and applying the knowledge to a specific context where needed. Intentional planning and play-based experience could support children in transferring scientific knowledge into real-world practices. Several studies discussed the integration of science learning in the early years; however, the presence of scientific literacy, either directly or indirectly, in the EYLF is yet to be understood. The present study explores how the EYLF can be studied using the lens of scientific literacy in the early years.

Aim: This study investigates two specific research questions: 1) How can scientific literacy be linked to EYLF principles, practices and learning outcomes? and 2) What are the challenges for educators to employ scientific literacy in practices aligned with the EYLF?

Method: This study employed narrative document analysis to understand how the EYLF constructs the concepts of scientific literacy in the early years. Using the inductive method for narrative analysis to uncover the themes and meaning, the presence of science learning and how the application of this learning is suggested in the EYLF are analysed.

Results: While the EYLF principles, practices and learning outcomes do not provide a specific focus on scientific literacy directly, there are some indications and guidelines for play-based science activities in the early years. This policy document focuses on play and intentionality; however, evidence related to the application of science learning through play is limited. The document particularly concentrates on adapting to a new situation through play so that children can apply their learning in a new way, an approach to develop scientific literacy, which could be supported by educators through intentionality.

Conclusions: The EYLF focuses on play with intentionality in the early years; however, the concept of scientific literacy could be interpreted. An added focus on integrating science knowledge and application in the EYLF could help educators and children in developing and sustaining scientific literacy in the early years.

Implications for children and families: Children will understand how science learning is fun through play activities, which develop scientific literacy. Families will be aware of how science play can be fun and effective from early years, and you can employ scientific knowledge in your everyday practice with your children.

Implications for practitioners: You will understand the specific connections between scientific literacy in the early years and the EYLF principles, practices and learning outcomes.

Funding: Australian Government Research Training Program International Scholarship.

Key words: scientific literacy, play, intentionality, Early Years Learning Framework in Australia, early years

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 4: Quality Education

ECV2024-453

Teacher training and ecosocial justice: Listening to children's voices to value and connect with local resources from ecodependence and interdependence

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Background: In the face of the pressing ecosocial challenges of the present (ecological crisis, increasingly pronounced social inequalities), we need initial teacher training that can contribute to addressing this important collective challenge. To this end, this work presents some training proposals tied to ecosocial justice, proposing to thoroughly examine the foundations and structures of our collective life from the principles of interdependence and ecodependence, valuing the life of all living beings and promoting social justice in a sustainable context.

Aim: This study aims to analyse the results of two initial teacher training proposals that listen to children's voices in Cantabria (Spain), implemented in the practicum, which seek to provoke future teachers' reflections on the natural and social elements of the neighbourhood where the placement schools are located, from the dimensions of ecodependence and interdependence.

Method: The two strategies employed are "What I see from my window" and "My favourite place in the neighbourhood", which allow future teachers to invite children to review and reflect on the natural and social elements of the neighbourhood, analysing the connections between schools and their immediate contexts and exploring the educational opportunities that could arise. This proposal was carried out over two academic years, with the participation of 28 student teachers. The content of 28 proposals was analysed using a qualitative approach and thematic coding. The researchers followed EECERA's code of ethics for this study. Informed consent was obtained from all participating student teachers. Anonymity and confidentiality of the data were ensured.

Results: The results show that children identified valuable resources in the neighbourhood from an ecosocial perspective, such as parks with fauna and flora, and local businesses. These resources can be leveraged by each school's educational project to promote valuable and contextualised educational experiences.

Conclusions: The activities "What I see from my window" and "My favourite place in the neighbourhood" allowed future teachers and students to identify local resources that are valued by children and have an ecosocial value, and connect them with the educational curriculum, enriching teaching and fostering a sense of belonging and responsibility towards the environment.

Implications for children and families: These activities help you discover and value what is in your neighbourhood, teaching you to better care for and utilise everything around you.

Implications for practitioners: Implementing these activities in your daily practice will enable you to better connect students with their environment and foster a critical and reflective ecosocial awareness in them.

Key words: children's voices, community services, qualitative methods, quantitative methods, sustainability, ecodependence, interdependence, teacher training, social justice

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 4: Quality Education
- SDG 11: Sustainable Cities and Communities

ECV2024-454

Scoping review: Resources for immigrant parent-caregivers of neurodivergent children in Canada (2013–2024)

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Background: In Canada, immigrant and refugee parents of neurodivergent children born or growing up with neuro-developmental conditions face the difficult task of navigating an interconnected pathway of barriers and facilitators. Immigrant parent-caregivers must often assertively take the initiative to secure resources for the safety and well-being of their neurodiverse children.

Aim: This scoping review investigated the lived experiences of immigrant parents of neurodivergent children as they attempted to access mainstream support across Canada.

Method: This exploratory literature review in the Canadian context was methodologically informed by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Extension for Scoping Reviews (ScR).

Results: This scoping review includes 21 peer-reviewed academic research articles, with data extracted from each article including details on study demographics, objectives, and results, using a three-step coding process. Four major themes were collectively identified as key areas of focus across the 21 articles: a) navigation, b) communication, c) resources, and d) well-being, and 21 minor themes were sorted into (10) barriers and (11) facilitators.

Conclusions: The divisive and inequitable barriers faced by immigrant parents versus non-immigrant parents across Canada still share commonalities, suggesting an intellectually neuro-ableist society. The qualitative inquiries into the lived experiences of ethnoculturally diverse immigrant parent-caregivers promote strengths-based language and positive coping for a healthier family quality of life for neurodivergent children.

Implications for children and families: The strategies highlighted in this review may improve the responsivity between service providers and immigrant parent-caregivers when discussing your concerns and communicating your needs.

Implications for practitioners: This report encourages social services organisations across Edmonton to prioritise creating and implementing neurodivergence guidelines that contain wraparound accommodations to accessible and relevant resources for immigrant and refugee parent-caregivers of neurodivergent children. Strengthening measures for privacy, consent, and personal boundaries would benefit your practice by improving intercultural and interfaith cooperation.

Funding: This project is funded by a City of Edmonton Community Safety and Well-being Grant.

Key words: children's voices: neurodivergent children, well-being; families' voices: immigrant and refugee parents, family quality of life, ethnocultural diversity, coping, vulnerability, resilience; professionals' voices: service providers, education, cooperation; communication: barriers and facilitators, guidelines; community services: mainstream support, resources, cooperation, wraparound accommodations; government: Government of Alberta, Canada-wide strategies, policy; interdisciplinary audience, qualitative methods: scoping review, thematic analysis; regional/rural communities

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 5: Gender Equality
- SDG 10: Reduced Inequality
- SDG 11: Sustainable Cities and Communities
- SDG 16: Peace and Justice Strong Institutions

ECV2024-455

Effectiveness of the ASD social communication group intervention in a resource constraint context: Case study in Fiji

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Background: With autism affecting 1 in 100 people globally, there is a growing need for innovative service delivery methods, especially in resource-constrained settings (RCSs). The implementation of social communication groups for children with autism would suggest an effective and efficient evidence-based service delivery model to support communication in the context of a lack of speech pathologists (SLPs) and behavioural therapists to manage a high caseload of children awaiting individual management and minimise the health disparity experienced by children with autism in Fiji.

Aim: To evaluate the effectiveness of an outpatient parent-child social communication group for Fijian children with suspected or confirmed autism.

Method: Fifteen children at risk for autism (Male: *n* = 13, Female: *n* = 2), with a mean age of 52.66 months, and their parents participated in a 10-week outpatient therapy program at the Frank Hilton Organisation speech pathology clinic in Suva, Fiji. All caregivers provided consent to use outcomes data for research. The program comprised one-hour weekly sessions, including theory and play-based sessions targeting linguistic facilitation techniques, play-based floor time, and behavioural management led by an SLP and a Positive Behavioural Support Officer. The post-evaluation questionnaire, which parents completed, underwent analysis using descriptive statistical methods and thematic analysis.

Results: Preliminary results suggest that in response to the therapy provided, outcomes included (a) heightened parents' responsiveness to their child's communication attempts, (b) increased social skills; initiation of social interaction, eye contact, imitation skills, and joint engagement, (c) enhanced functional communication using gestures, words, or AAC, (d) improved comprehension and (e) decreased frequency of challenging behaviours.

Conclusions: Social communication groups effectively deliver services to improve social communication skills in Fijian children with autism, especially with limited clinical resources.

Implications for children and families: Increased parental responsiveness during daily routine activities and play supports the language and communication development of children with autism.

Implications for practitioners: Interdisciplinary social communication group interventions are efficient for supporting children with autism and their families in resource-constrained settings.

Key words: autism, social communication, resource-constraint countries, interdisciplinary practice

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 10: Reduced Inequality

ECV2024-456
Understanding the needs of children from immigrant families when they serve as interpreters to develop a knowledge tool for healthcare providers

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Background: Newcomer families to Canada may face significant barriers when accessing healthcare due to limited proficiency in the mainstream language. This impacts health outcomes, access to services, patient satisfaction, and safety. Interpreter services are inconsistent and may not cover all languages adequately. Additionally, cultural or ethnic differences may affect trust in interpreters. To compensate, immigrant children often become language brokers for their families, translating across languages and cultures. The Canadian Pediatric Association has raised concerns that this practice may stress children, harm their mental health, and expose them to disturbing information.

Aim: Though healthcare providers should opt for professional interpretation services, community members have expressed concern that interpreters are not reliably available to meet the needs of their families. This places children in a position where they are burdened with bridging this gap without receiving sufficient support to do so. Within this context, this study aims to understand what support immigrant children need when they take on the role of language brokers.

Method: We recruited 13 participants aged 19–25 from immigrant backgrounds who had childhood experiences interpreting for their parents in healthcare settings. Semi-structured interviews were conducted with each participant, and data was analysed using thematic analysis.

Results: We will focus on themes that inform knowledge mobilisation strategies, such as barriers when accessing interpretation services, difficulties children encountered when interpreting, strategies used by healthcare providers that were viewed as helpful, and recommendations for developing knowledge mobilisation tools.

Implications for children and families: If your child interprets for you, it is important to recognise that this responsibility can be challenging and overwhelming. Our study aims to develop resources to help children navigate these challenges and advocate for better support for you and your family.

Implications for practitioners: As healthcare practitioners, it is crucial to recognise the significant burden on children interpreting for their parents and to actively seek ways to provide the necessary support and resources to help them in this role. There is also a need to advocate for systemic changes to better address the needs of families with significant language barriers.

Key words: children's voices, communication, health, interdisciplinary, qualitative methods, vulnerable communities, well-being

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 10: Reduced Inequality
- SDG 16: Peace and Justice Strong Institutions

ECV2024-457

Integrating children's interests and educators' choices in teaching STEAM through play-based learning: A cultural-historical study

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Background: Children's regular cultural experiences, everyday habits, and behaviour shape their mental habits and cultural minds. Therefore, to fully understand children's cultural development, we need to understand the process of children's learning and development. The current world requires skilled people in STEM (Science, Technology, Engineering and Mathematics), and we need to advocate STEM learning opportunities from the early years. Children consider play as serious work, and educators can create social conditions for creating play-based STEM learning experiences. However, many educators feel more comfortable teaching arts rather than STEM education in the early years. By integrating arts with STEM, thereby creating STEAM (Science, Technology, Engineering, Arts, and Mathematics) learning opportunities, educators can provide inclusive and engaging educational experiences for all children, regardless of their diverse cultural backgrounds and abilities, through play-based learning.

Aim: This paper explores how educators can create inclusive social conditions for the effective teaching of STEAM to all children through play-based learning.

Method: The cultural-historical research methodology was employed to conduct the study, utilising digital visual observation for data collection. This paper analysed 40-minute video data on toddlers' risk play, selected from 50 hours of footage gathered at a regional childcare centre over seven weeks. The inclusive STEAM pedagogy framework (which combines the 4P phases model for STEAM learning, the triple 'A' framework for full inclusion, and a pedagogical strategy model for educators' positioning, was used to analyse the visual data). Ethical approval for this study was obtained from CSU.

Results: The 4P phases model offers a clear guideline for educators' selection of play activities, taking into account children's interests, planning and play-based actions, and reflection to create social conditions conducive to implementing STEAM-based activities. All children's active participation, regardless of their diversities and disabilities, was ensured during play. Lastly, educators' positioning during play was crucial to teaching STEAM through play.

Conclusions: Inclusive STEAM pedagogy can ensure equity in teaching STEAM through play-based learning.

Implications for children and families: Every child can participate in a STEAM-based experience and achieve their learning goals. Parents and children can watch the video clip presented through this presentation to better understand STEAM learning.

Implications for practitioners: Educators can clearly comprehend guidelines for teaching STEM, including their preference for teaching Arts.

Funding: Charles Sturt University Internal Fund, Faculty of Arts and Education Research Establishment Grant.

Key words: play-based learning, STEAM education, inclusive learning, early years, educators' choice, children's interest

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 4: Quality Education
- SDG 5: Gender Equality
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-458

Positive/successful community participation for children with communication support needs

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Background: Community participation offers children opportunities to develop skills, improve their quality of life, build friendships, creatively express themselves, and establish a sense of identity and belonging. However, children with communication support needs experience reduced community participation due to barriers, including accessing communication aids, reduced community awareness of communication strategies, and increased communication breakdowns. Further research is required to explore the perspectives of families of young children with communication support needs and how their community participation can be supported.

Aim: This study explores primary carers' lived experiences of community participation for their child with communication support needs. This presentation focuses on one aspect of the data: participant perspectives on how they understand positive/successful community participation.

Method: Semi-structured 60–90 minute interviews were conducted with primary carers online and in-person. Participants were 11 parents (10 mothers and 1 father) of 10 children aged 3–6 years with communication support needs. All parents were based in Australia and lived across metropolitan and rural areas. Data were analysed using reflexive thematic analysis, managed within NVivo. Ethical approval was granted by Charles Sturt University Human Research Ethics Committee (H23665).

Results: All participants shared experiences and stories of community participation, with some requiring prompts to recall successful and 'positive' ones. Emerging themes include children's expression of fun and enjoyment, connecting through physical engagement, active facilitation by the parent, the role of routines, familiar and specialised environments, and supportive communication partners.

Conclusions: Parents of children with communication support needs are a vital part of these children's community participation, providing support and facilitating connections. Also key were relationships and environments that proactively support participation and interaction. Understanding the stories of these families' successful experiences provides opportunities to collaboratively work towards the right of every child and their family to positive and successful participation in the community.

Implications for children and families: You will hear how parents of children with communication support needs describe positive/successful community participation, including what these experiences mean for them and their children. Hopefully, these stories will reassure you and your therapists of what is possible and build confidence in reaching positive community participation outcomes for your child.

Implications for practitioners: Early childhood intervention therapy focuses on children's natural environments, building functional outcomes, and increasing participation. These stories will provide insight into how barriers can be overcome so that children have positive/successful experiences in the community.

Funding: This research is part of a larger research program funded by the Australian Government Research Training Program Scholarship.

Key words: community participation, young children, families' lived experience, complex communication needs

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 10: Reduced Inequality

ECV2024-459

Revolutionising infant education: The benefits of group dynamics in early learning environments

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Background: Traditional infant care focuses on attachment and individual development. However, this can limit social and collaborative skill development. This study explores innovative practices that leverage group dynamics to enhance infant learning and social development by reconfiguring educational environments to emphasise collective agency.

Aim: To explore the transformative impact of integrating group dynamics into infant care and education and to demonstrate the practical benefits observed in early childhood centres in rural Australia.

Method: The study involved reconfiguring the educational environments at two rural centres to emphasise group-based interactions. Key methodologies included structured group mealtimes and play sessions. Observations and data collection were conducted to assess the impact on infant learning and social development. Parent and educator approval was obtained.

Results: The implementation of group-based practices resulted in spontaneous peer teaching, enhanced social skills, and a more harmonious atmosphere. Infants in these settings were observed to be more engaged, communicative, and cooperative. Additionally, educators experienced reduced stress and were able to participate in more meaningful activities with the infants.

Conclusions: Group dynamics in early learning environments reveal the intrinsic social capabilities of infants and promote a more engaged and cooperative learning atmosphere.

Implications for practitioners: Integrating group dynamics into your educational practices can reduce your stress levels, allowing you to focus on more meaningful interactions and fostering a harmonious learning environment.

Key words: children's voices, professionals' voices, communication, quantitative methods, regional/rural communities

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 11: Sustainable Cities and Communities

ECV2024-460

The role of pre-service education in addressing barriers to nurses reporting child maltreatment

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Background: Registered nurses are well-placed to recognise and respond to child maltreatment, but national data has illustrated that they are not reporting as frequently as other professions. While several factors may impact a nurse's decision to report suspected child maltreatment, it is consistently identified in the literature that insufficient knowledge and confidence are factors that inhibit reporting.

Aim: To examine the literature to determine if pre-service nursing education has a role in addressing barriers to making mandatory reports for child maltreatment.

Method: A narrative review of the literature investigating "is pre-service education preparing registered nurses for their role in child protection and mandatory reporting of child maltreatment?"

Findings: Nurses need opportunities to examine their attitudes and preconceptions around child maltreatment as well as structured education around the signs and symptoms and the reporting process to feel confident about mandatory reporting. While these opportunities are not currently being delivered in a pre-service setting, this would be ideal to facilitate the above requirements.

Conclusions: Studies around nursing education for mandatory reporting show that it is largely delivered as in-service education. While high-quality in-service training may help address the attitudes of nurses and develop critical thinking skills, RNs' in-service training experiences have been reported as inadequate. Pre-service education is structured and pedagogically sound and can offer opportunities to address attitudes. Other advantages include the fact that it starts to build knowledge and skills early in a nurse's career, offers the opportunity to standardise the curriculum, and removes barriers to access. Implementing this change to how education about child maltreatment and mandatory reporting is delivered to nurses can increase mandatory reporting and lead to improved outcomes for children suffering maltreatment.

Implications for children and families: I want to find out what we can do to help nurses keep you and your friends safe from harm.

Implications for practitioners: This research aims to drive change to how education about mandatory reporting of child maltreatment is delivered to nurses and reduce barriers that prevent nurses from making reports.

Key words: children's voices, families' voices, professionals' voices, communication, community services, education, qualitative methods, review, vulnerable communities, well-being, workforce

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 10: Reduced Inequality

ECV2024-461

Normalising partnership working between speech and language therapists and early childhood educators: What we learnt from listening

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Background: The Northumberland Healthcare NHS Foundation Trust-Newcastle University-Universal-Targeted-Specialist (NNUTS) Framework was developed from a two-year longitudinal study to establish Universal, Targeted and Specialist (UTS) speech and language intervention in the early years provision of five schools in the north-east of England. Speech, language and communication (SLC) support was embedded in school policy. Trained specialist teaching assistants (TAs) led the UT provision, liaising closely with NHS speech and language therapists (SLTs) and collaborating across schools. SLT input required less time to obtain the same outcomes.

Aim: To establish important components of normalisation we investigated the perceptions of senior leaders and staff on the ground.

Method: Fifty structured interviews were conducted with staff across education and speech and language organisations. Participants comprised senior leaders, SLTs, class teachers and TAs. The Theoretical Domains Framework (TDF) and Capability-Opportunity-Motivation-Behaviour (COM-B) Model were used to analyse the interview content. Themes were extracted using the TDF and mapped onto the COM-B model as barriers and enablers. Ethical approval was gained from Newcastle University.

Results: A key component in normalisation was that SLC support for children was valued by staff at all levels of the organisations. Staff felt supported to develop knowledge and skills which increased their confidence working with children. Limited time and resources were still an issue but did not seem to impact normalisation. The NNUTS Framework laid a foundation for building sustained cross-organisational partnerships.

Conclusions: The normalisation of partnership working to provide SLC support to children in educational settings was achieved through embedding in organisational policy, valuing and supporting staff, and providing well focused training and expert specialist support, supported by the NNUTS Framework.

Implications for children and families: A good partnership working between the people who support your speech, language and communication needs will help you get the support you need sooner.

Implications for practitioners: Commitment at all levels of your organisation is essential to establish partnership working that will normalise the implementation of universal-targeted-specialist support for children with speech, language and communication needs.

Funding: The project was funded by Newcastle University, UK.

Key words: professionals' voices, interdisciplinary, partnership, normalisation

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-462

Early childhood and primary school teachers' experiences and needs in working with trauma-impacted children: A systematic review and thematic synthesis

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Background: Trauma experienced during childhood can have a harmful impact on children's social, emotional, and physical health. Teachers working in educational settings are uniquely positioned to respond to and support children impacted by trauma.

Aim: The aim of this systematic review and thematic synthesis is to explore the experiences and needs of early childhood and primary teachers in terms of their work with trauma-impacted children.

Method: This is a systematic review and qualitative evidence synthesis of primary studies. Systematic searching and screening were conducted following the PRISMA guidelines; an iterative three-stepped thematic synthesis procedure was followed in terms of coding and analysis.

Results: Fourteen studies were included in the final synthesis, with three themes emerging across the studies: (1) teachers lack training and support to work with trauma-impacted children, (2) the dilemma of teachers' roles, and (3) teachers need multifaceted support.

Conclusions: An under-examination of early childhood teachers' experiences and needs in working with trauma-impacted children was identified. Teachers are ill-prepared and lack confidence in working with children impacted by trauma. They report multiple challenges and face several dilemmas and confusion relating to the boundaries of their role. Working with trauma-impacted children without adequate preparation and support can harm teacher well-being. Multifaceted support, including training, collaboration with professionals with expertise in trauma, and trauma-informed organisational change is needed. Recommendations for future research and practices will be discussed.

Implications for practitioners: Your experiences, needs, and well-being matter; you need to be well-supported professionally and psychologically to support children and families impacted by trauma.

Key words: professionals' voices, interdisciplinary, qualitative methods, review, vulnerable communities

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 17: Partnerships to Achieve the Goals

ECV2024-463

Moral development in early years through religious education curriculum: A case study from a faith-based community

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Background: The moral development of young children is crucial in shaping their understanding of ethics and responsibility. This process is significantly influenced by religious education, particularly within faith-based communities, which aim to instil strong moral foundations from an early age. However, there is a risk that such education may become overly rigid and doctrinal, potentially limiting the broader development of moral reasoning.

Aim: The study examined the framework and pedagogical strategies employed to foster moral development among young learners.

Method: This abstract presents findings from an exploratory case study conducted on an international religious education curriculum designed for children aged 4–7, within a global faith-based community spanning 26 countries.

Results: The analysis of curriculum documents, including textbooks, parent and teacher guides, lesson plans, and supplementary resources, revealed a multifaceted approach to moral education. The curriculum integrates diverse perspectives—normative, humanistic, and civilisational—across its objectives, content, teaching methods, and assessment practices. This inclusive approach aims to cultivate a comprehensive understanding of morality that goes beyond mere adherence to rules, encouraging children to develop their moral reasoning through active engagement and constructivist learning strategies. Moreover, the study emphasises the importance of involving parents in the moral education process through guided home-based activities. This collaborative effort seeks to reinforce moral teachings across different facets of a child's life and acknowledges the significant influence parents have on their children's moral development.

Conclusions: The research advocates for a holistic approach to religious education in early childhood, one that prepares children to become ethical citizens capable of navigating the complexities of contemporary life. By fostering critical thinking from an early age, such an approach equips children to make informed decisions and uphold ethical values in an increasingly interconnected world.

Implications for children and families: You foster your child's ethical values and critical thinking through guided home activities.

Implications for practitioners: You must integrate normative, humanistic, and civilisational perspectives to create inclusive and reflective moral education.

Key words: moral education, normative, humanistic, civilisation, constructivist pedagogy, early childhood education

This presentation relates to the following United Nations Sustainable Development Goals:
SDG 4: Quality Education

ECV2024-465

Kindergarten teachers' practices in addressing the challenges encountered by parents in teaching beginning reading skills during the pandemic

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Background: The Philippines scored the lowest in reading comprehension among the 79 countries and economies that participated in the 2018 Programme for International Student Assessment (PISA). Reading was the primary subject assessed in the 2018 PISA for students aged 15 years and older. The Philippines' reading score was 340, which was more than 200 points lower than China's (555) and more than 100 points lower than the OECD average (487). This issue illustrated how far behind the Filipinos are when it comes to reading, particularly reading comprehension.

Aim: This study sought to identify the challenges Kindergarten parents experienced during the pandemic in teaching Kindergarten learners beginning reading skills.

Method: The research employed a quantitative descriptive-evaluative design, sampling 38 Kindergarten parents and 60 Kindergarten teachers from the Department of Education Schools Division of Nueva Ecija and Cabanatuan City using convenience sampling due to the pandemic. This research addressed ethical concerns by ensuring the respondents' identities and answers were kept confidential. Also, they were informed about their right to withdraw from the research.

Results: The results indicated that (1) parents rarely encountered difficulties in teaching beginning reading skills to their children, and (2) Kindergarten teachers frequently practised ways and strategies for addressing the difficulties encountered by Filipino parents in teaching beginning reading at home. Furthermore, while Filipino parents face occasional challenges in teaching beginning reading skills.

Conclusions: The study concludes that Kindergarten teachers and parents must be partners in further enhancing the beginning reading skills of Kindergarten learners.

Implications for children and families: Focus on creating a supportive home environment for learning to enhance your child's reading skills, especially during challenging times. Teachers are actively working to support you in teaching reading at home, so do not hesitate to seek their guidance. It is recommended that you stay engaged with educational programs and initiatives from the Department of Education to further aid your child's reading development.

Implications for practitioners: Based on this study, you should encourage parents to foster a supportive learning environment at home for Kindergarten children, especially in teaching beginning reading skills. Additionally, you should collaborate closely with parents to implement effective strategies that address any challenges they may face during home-based learning. Finally, consider advocating for the ongoing development of reading programs that enhance cooperation between parents, teachers, and Kindergarten students within your educational context.

Key words: families' voice, professionals' voice, early literacy, education, quantitative methods, beginning reading skills, challenges and opportunities

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 4: Quality Education

ECV2024-466

Phonological skills in Polish-speaking children with speech sound disorders: The diagnostic tool design

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Background: The phonological skills/processes of children with speech sound disorders are not a key focus of researchers and speech-language pathologists (SLPs) in Poland. There is a growing trend for mostly providing Polish-speaking children with myofunctional, manual, and articulation therapy, paying little attention to phonological skills/processes. This seems worrying given the high percentage of children with speech/language delays/disorders and the consequent increased risk of lower phonological and literacy skills. One reason might be the apparent deficiency of the standardised tools for assessing phonology-related issues in this group of children, which is the largest group taken care of by SLPs.

Aim: To develop a tool for assessing the phonological skills of 6–10 years old Polish-speaking children with speech sound disorders.

Method: The tool framework is: (a) a short-term phonological memory subtest based on non-words of high phonotactic probability, with no sounds difficult to produce (sibilants and [r] sound), (b) a working phonological memory subtest based on real words, with no sounds difficult to produce (sibilants and [r] sound), and (c) a phonological planning subtest (consistency) based on reals words of high and low frequency, including consonant clusters.

The word material for testing was chosen based on several criteria, depending on the subtest, e.g., the variety of language-specific phonotactic combinations, frequency of word occurrence, and word length. The selected words and non-words were reviewed by competent judges who were linguists and speech-language pathologists, both practitioners and theorists. A pre-pilot study for final word and non-word item selection is currently being planned as a next step. Then a validity study will be implemented to assess the psychometric properties of the tool.

Among the theoretical assumptions underlying the tool are: (a) eliminating speech confound in real word and non-word testing with speakers who misarticulate sounds, and (b) phonological planning deficit (within-word inconsistency in the production of syllable structures).

Results: The tool meets the gap in the phonological assessment of Polish-speaking children. It may help discriminate children with typical phonological skills from those with delay/disorder. It may also be useful for differential diagnosis of children with speech sound disorders or literacy skills assessment.

Conclusion: The designed tool addresses three aspects of phonological skills and might be substantively informative for research and practice with speakers who misarticulate and whose speech errors might be evidence of phonological skills difficulties.

Implications for families: Phonological skills practice may not only support the effectiveness of speech therapy but also improve (pre)literacy skills.

Implications for practitioners: More than working on articulation is required. If you want children with speech sound disorders to progress better, introduce phonological practice. By taking care of phonological skills, you also take care of (pre)literacy.

Funding: National Center of Science, MINIATURA 8, Registration number: 2024/08/X/HS6/00594.

Key words: professionals' voices, theory, education, speech sound disorders, phonological skills

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education

ECV2024-467

Play-based early childhood science education: A scoping review

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Background: An expanding corpus of research has investigated the role of play in early childhood science education. Nevertheless, a notable gap remains in the literature that comprehensively reviews these studies.

Aim: The objective of this scoping review is to systematically examine empirical research on this topic, elucidate consistent findings, identify gaps in the literature, and offer recommendations for future research and practice.

Method: A five-step scoping review methodology was employed and 26 peer-review articles written in English from 2000 to date were selected. These articles were categorised by publication year, country and context of study, journal, research area, and research theme.

Results: (1) since 2019, there has been an increasing emphasis on this research topic; (2) Australia has received the most research attention, followed by Sweden, with only one study incorporating the home environment as part of the research context; (3) most studies have been published in *Research in Science Education* and *Early Childhood Education Journal*; (4) four research areas were identified: education and child development, teacher and teacher education, educational methods and pedagogy, and educational assessment and evaluation; (5) development in science-related learning aspects, teacher's knowledge and practices, implementing play pedagogy, effects of interventions constitute four research themes.

Conclusions: Research on play-based early childhood science education worldwide remains significantly lacking, especially in family contexts. Future research and practice need to address the gap.

Implications for children and families: You can utilise numerous scientific play opportunities within everyday family life to enhance science learning in preschoolers. Collaborating with teachers to integrate these family experiences can establish a crucial foundation for preschool science education.

Implications for practitioners: You can leverage your strength in play pedagogy to integrate play with science education, enabling imaginary situations in play to be transformed into scientific narratives facilitating science learning.

Key words: children's voices, families' voices, professionals' voices, review, qualitative methods, quantitative methods, play, early childhood science education

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 4: Quality Education
- SDG 17: Partnerships to Achieve the Goals

ECV2024-468

What does neurodiversity-affirming practice look like in early childhood?

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Background: Children with autism, ADHD and related conditions have often been viewed through a deficit-based medical model that focuses on their challenges through a disability lens. The neurodiversity movement attempts to shift to a strengths-based perspective by identifying opportunities for advocacy and inclusion of neurodiverse individuals.

Aim: This presentation aims to describe the key features of neurodiversity, their common presentations in children and opportunities for accommodations in health and educational settings.

Method: This presentation collates existing evidence from the three dimensions of evidence-based practice to define and support neurodiversity-affirming practice: (1) the latest empirical research on neurodiversity (2) clinical expertise from neurodiversity-affirming practitioners and (3) the perspectives of neurodiverse people themselves to develop an innovative theory of the spectrum of neurodiversity.

Results: The results of this research are an innovative model of the neurodiverse brain, the wide range of features of neurodiversity, and their varying presentations based on the reports of people who experience these features in their daily lives. The model is developed by and for neurodiverse people to map the features of their neurodiversity and to advocate for the accommodations they/their children need to thrive.

Conclusions: This presentation provides an evidence-based model that professionals and parents can use to understand children's neurodiversity. It is accompanied by free resources that can be used to advocate for children's individual preferences to support their participation in daily life.

Implications for children and families: You can use this neurodiversity framework to map the features of your/your child's unique neurodiverse brain. Knowledge of individual features promotes understanding of how their brain functions best and helps identify environmental and interpersonal modifications that can be made to enhance your child's communication and participation in their lives.

Implications for practitioners: You can use this neurodiversity framework to understand the features children's unique neurodiverse brains. This will enable the identification of accommodations and strategies in the early childhood context and other social interactions that can enhance children's communication and participation in their lives.

Key words: children's voices, families' voices, professionals' voices, communication, health, interdisciplinary, innovation, qualitative methods, review, theory, vulnerable communities

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality

ECV2024-469

Diagnostic accuracy of three speech productions tasks of childhood apraxia of speech in Cantonese-speaking preschool children

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Background: Maximum performance tasks (MPT) and the syllable repetition task (SRT) are valid for identifying childhood apraxia of speech (CAS) in Dutch- and English-speaking children. Due to linguistic differences, whether they are valid in languages with lexical tones, such as Cantonese, is unknown. Cantonese speakers with CAS make tone errors. The tone sequencing task (TST) has been proposed for differential diagnosis.

Aim: To examine the validity and diagnostic accuracy of linguistically modified MPT and SRT, and of the TST in identifying childhood apraxia of speech in Cantonese-speaking children.

Method: The PolyU Institutional Review Board approved this study. A total of 90 Cantonese-speaking preschool children, aged 3–5 years, participated in three groups: typical speech-language development (TD) (n = 61), speech sound disorder only (SSD) (n = 22), and childhood apraxia of speech (CAS) (n = 7).

Results: The MPT, maximum phonation duration and maximum repetition rate of monosyllables, the SRT competency and memory scores, and the TST tone accuracy and consistency measures differentiated the CAS group from the others. The MPT dyspraxia score had 100% and 37.3% sensitivity and specificity, respectively. The SRT competency score had 85.7% and 97.6% sensitivity and specificity, respectively. All 10 TST measures had >80% sensitivity and specificity.

Conclusions: The linguistically modified MPT and SRT may not effectively identify CAS in Cantonese speakers. The TST may contribute significantly to a language-specific diagnosis.

Implications for children and families: This new measure will help determine if your Cantonese-speaking children have CAS so they can get appropriate treatment.

Implications for practitioners: The TST will help identify CAS in Cantonese-speaking children.

Funding: The General Research Fund (GRF) of the Hong Kong SAR Government (Project number: 15605821) supported this study.

Key words: children's voices, families' voices, professionals' voices, international communities, qualitative methods, quantitative methods, diagnostic accuracy

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education

ECV2024-470

Design and validation of a multisyllabic word test for preschool Persian-speaking children

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Background: A review of the literature related to the use of multisyllabic words in the assessment of speech sound disorders (SSD) in children reveals the importance of using these words for providing additional information such as prognostic information. Despite strong literature in other languages, there is limited research on examining the production of these words in the Persian language among preschool children.

Aim: This study aims to design and assess the psychometric properties of a multisyllabic words test (MWT) for evaluating speech sound production skills in Iranian preschool children.

Method: One hundred and twenty children with typical development (60 males, 60 females), and 20 children with SSD (10 males, 10 females) whose parents signed an informed consent form participated in a cross-sectional study. Forty words were extracted from an item pool, including 532 multisyllabic words with 3, 4, 5, and 6 syllables. The content, face, construct, and differential validity of MWT were examined. For evaluating construct validity, the differences among six age groups, between males and females, and between control and SSD children were examined in terms of total score, percent consonants correct (PCC), percent vowels correct (PVC), and percent phonemes correct (PPC). Reliability (test-retest, and score-rescore) and internal consistency were determined using 20 children at a one-week interval, and interrater reliability was determined. Descriptive statistics, ANOVA, independent t-test, and Tuckey's post hoc test were used for data analysis in SPSS software, version 26.

Results: In comparing the age groups, the results showed a significant difference in terms of total score, PCC and PPC ($P<0.001$), but no significant difference was found in PVC ($P=0.23$). No significant differences were found between males and females in total score, PCC, PPC, or PVC. In comparing control and SSD children, the results showed a significant difference between the two groups in total score, PCC, PPC ($P<0.001$), and PVC ($P=0.02$). The Intraclass correlation coefficient (ICC) was 0.98 for test-retest reliability and 0.79 for intra-rater reliability. The internal consistency was 0.75 for 3-syllable words, 0.65 for 4-syllable words, and 0.63 for 5-syllable words.

Conclusions: The Persian MWT can be used as a valid and reliable instrument for measuring the speech production ability of Iranian children with SSD aged 4–7 years in clinical settings or for research. This test is consistent with other tests, such as the Polysyllable Preschool Test in terms of considering methodological principles such as inclusion words with different lengths, phonetic forms, and stress patterns, high imageability, using common words for preschool children, and providing opportunities for eliciting common error patterns of the target language.

Implications for children and families: Your child's ability to produce multisyllabic (words of three or more syllables) is a significant milestone in their speech development. This skill lays the foundation for future literacy skills.

Implications for practitioners: The Persian multisyllabic word test is a reliable and valid instrument that could be utilised for evaluating speech production.

Key words: multisyllabic words, Persian, speech sound production, validity, reliability, test

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education

ECV2024-471

Building The Treehouse: A physical and virtual children's research environment co-designed with children, colleagues, community

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Background: The Treehouse will be a unique child-focused research environment on the international stage. It will be both a physical and virtual environment that will operate on the principle of inclusivity, ensuring that all children, regardless of age, language, culture, ability, socio-economic status, or geographical location have a platform to be heard and to contribute to conversations that shape their world. The creation of this physical and virtual children's research environment is informed by the Convention on the Rights of the Child that upholds children's right to have voice about matters impacting them, regardless of frontiers. Children will be active co-researchers and participants in designing The Treehouse so that it becomes a hub to address personal and societal issues to inform policy and practices ensuring that children have a direct say in their future.

Aim: To describe the first three theory-driven co-design processes with children, colleagues, and community to build The Treehouse as a physical and virtual children's research environment to house the Children's Voices Centre at Charles Sturt University, Australia.

Method:

Stage 1 (Children) consists of the application of child-focused participatory action research frameworks (Lundy Model, Shier's Participation Matrix, Clark and Moss' Mosaic Approach) to work with children to co-design The Treehouse using a consumer community involvement strategy. Children will advise on the research's ethics application.

Stage 2 (Colleagues) entails a two-part review of information about children on university campuses. An international literature review identified 301 papers that were entered into Covidence and 95 papers were included in the review. A national policy review identified 79 policies from 37 universities.

Stage 3 (Community) involves identifying stakeholders for supporting children's voices to be heard using Bronfenbrenner's Ecological Systems Theory. Children will work with the researchers to invite these stakeholders to provide advice for the creation of The Treehouse and their feedback will be incorporated into the co-design process using the Mosaic Model.

Results:

Stage 1. During the consumer community involvement phase children known to the researcher conceptualised The Treehouse as including a collaboration space (Campfire), calm space (Den/Hollow), voting space (Rabbit Hole), space for babies (Duckling Hutch), fun space (Treetops), and working/hiding/vantage point (Nest) and space for adults (Beehive). Children drew pictures of themselves talking and playing and in their imagined treehouse.

Stage 2. The review of literature and policies identified that children on university campuses were seen as postscripts (attending with parents, often as a health and safety risk), prospects (future university students, exhibits in lectures) and occasionally as partners (genuine engagement with children).

Stage 3. Children created questionnaires and activities during CCI to engage stakeholders to co-design The Treehouse. Stakeholders will include families, health and education professionals, early childhood, school, and university staff and students, architects, builders, web designers, businesses, governments, and media.

Conclusions: This paper outlines the first three discovery and planning stages of centring the voices of children to co-design The Treehouse. These processes demonstrate commitment to ensuring that the Children's Voices Centre will be a hub of research excellence that champions children's communication rights and fosters inclusivity, diversity, and innovation to empower all children to communicate, collaborate, and create a better future for themselves and the world.

Implications for children and families: We are working together to create The Treehouse as a place for children to have a say about things that matter to them – to be involved in research – and to create spaces for adults to listen to children. The Treehouse will be a fun building in Bathurst, Australia – and will also be online – so that everyone can come along, join in and have a say.

Implications for practitioners: This paper describes the initial co-design phases to create The Treehouse as a virtual and physical hub for the Children's Voices Centre. It demonstrates theories, methodologies, and decision-making processes to centre the voices of children in co-designing child-focused research environments.

Key words: children's voices, communication, community services, interdisciplinary, innovation, international communities, regional/rural communities, vulnerable communities

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-472

Personal narrative coherence of school-age autistic children in response to the Global TALES protocol

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Background: Sharing personal experiences through storytelling (personal narration) is a fundamental aspect of social communication, with personal narrative coherence linked to socio-emotional wellbeing and academic success. Despite the importance of personal narrative proficiency for participating in daily activities, and the knowledge that many autistic children show differences in social communication, research into the personal narrative skills of this group of children is limited.

Aim: We investigated the personal narrative coherence of autistic children and compared their performance to previously published results of similar-age children without an autism diagnosis.

Method: Following ethics approval, all parents and children gave informed consent to participate. Ten autistic children (8 male), ages 7;11 – 12;05, produced personal narratives in response to the six emotion-based prompts of the Global TALES protocol. All children scored within age expectations on tests of receptive vocabulary (PPVT) and nonverbal cognition. Personal narratives (max 6 per child) were transcribed and stories containing at least two past tense actions were analysed on three narrative coherence dimensions (Context, Chronology, Theme), using the Narrative Coherence Coding Scheme (NCCS).

Results: The children produced 30 personal narratives containing two past tense actions. On Context: 70% of stories contained no information about time/place; with time and place mentioned in two stories. Chronology: 60% of the stories contained minimal/no information about temporal order, with 13% of the stories containing an identifiable timeline. Theme: Scores included 0 (23%; difficult to identify topic), 1 (66%; identifiable topic with only limited evidence of causal connections or evaluations), and 2 (10%; substantial topic development). Compared to previously published results involving neurotypical children, the autistic children showed relative challenges in Chronology and Theme.

Conclusions: A case example will be provided to illustrate how analysing the coherence of children's personal narratives may inform clinical assessment and intervention practices.

Implications for children and families: Sharing clear, well-structured stories about personally experienced events helps you (your child) connect with friends and family at home, school, and in the community.

Implications for practitioners: We strongly encourage you to evaluate personal narrative coherence of autistic children on a routine basis to gain insight into this important discourse skill.

Key words: communication, quantitative methods, autism, wellbeing, education, children's voices.

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education

Early Childhood Voices 2024 (ECV2024)

STREAM 2: Multilingual children's speech development

With over 7,000 languages spoken worldwide, many children grow up learning one or more. Some, however, face challenges in speech development and require support from specialists. You can discover how children learn to speak more than 45 home languages by watching over 70 presentations provided by international experts in each language. The experts explain where the language is spoken, the components of the language (vowels, consonants, tones), and the assessments and interventions available to support children learning to speak that language.

Once you have listened to the presentations in English, you can listen to the same information presented in the language being spoken about. For example, you can hear how children learn to speak Kurdish in an English presentation and then listen again in Kurdish, or you can listen to a presentation about Greek in English and in Greek. These presentations will appeal to speech-language pathologists, teachers, psychologists, and linguists, as well as others wanting to learn linguistic terminology for information about each language. They may also be of interest to parents, second language learners, and people who want to listen to professional language users speaking in the language.

These presentations provide insights from global researchers, covering general language information, typical speech acquisition, and guidance on assessing and supporting children with speech sound disorders. They are available in English and 40+ other languages and growing.

Our YouTube channel is here: https://research.csu.edu.au/multilingual-speech-playlist

ECV2024-500

Multilingual children's speech development

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There is a long history of research about children's speech development. While some languages have well established and easily accessible data, assessments, and methods regarding children's speech development, research in other languages starts with the creation of culturally and linguistically appropriate assessment tools and methods. The research presented in Early Childhood Voices 2024 (ECV2024) Stream 2: Multilingual children's speech development and The Oxford Handbook of Speech Development in Languages of the World (McLeod, 2025) presents a paradigm shift in the world's knowledge of children's speech development. It provides a transformative solution for how disciplines can reduce disparities and overcome traditional English- and Western-centric biases. We present research from 172 international authors writing about 49 languages and 26 dialects across six languages (including knowledge not previously translated into English and from traditionally marginalized groups). We provide evidence of the importance of everyone's right to communicate without distinction of language, the benefits of multilingualism and international collaborations to build diverse interdisciplinary knowledge. The curated data within the presentations and chapters enable identification of common and unique elements of children's speech development across languages and dialects, assessments, interventions, and terminology. The presentations use a rights-based, transformative social justice approach to support communication specialists to make a difference in children's lives across the world.

Key words: speech, multilingual, communication, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- McLeod, S. (2025). Children's speech development around the world: A transformative paradigm shift. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Presentation

- McLeod, S. & Blake, H. L. (2024). *Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-501

Children's speech development: Afrikaans

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Afrikaans is spoken primarily in South Africa, Namibia, Botswana, and by a significant number of emigrants around the globe. Afrikaans belongs to the West Germanic group and is a member of the Indo-European family of languages. It is one of 11 official languages in South Africa with a wide geographical, demographic, and racial distribution. Afrikaans has several varieties, namely Standard Afrikaans, and non-Standard Afrikaans, such as Cape Afrikaans, and Namakwaland Afrikaans. The language is characterized by 26 consonants, 34 consonant clusters, 12 monophthongs, three diphthongs, and an alphabetic writing system. Available research studies include children's acquisition of Afrikaans phonemes across the age groups 2;0–7;0 years as well as the occurrence of phonological patterns across these age groups. A limited number of speech assessments have been developed in Afrikaans. Speech-language pathologists draw on a wide range of intervention approaches, mostly developed for English-speaking children.

Key words: Afrikaans, speech, multilingual, communication, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Louw, B., Le Roux, M., & Geertsema, S. (2025). Afrikaans speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Le Roux, M., & Geertsema, S. (2024). *Afrikaans: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: Afrikaans [Afrikaans version] – Children's Speech Development
- Video: Afrikaans [English version] – Children's Speech Development
- PowerPoint: Afrikaans [Afrikaans version] – Children's Speech Development (pdf)
- PowerPoint: Afrikaans [English version] – Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-502
Children's speech development: Akan
(Asante Twi)

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Akan is spoken in Ghana, West Africa and there are three major dialects, namely Akwapem, Asante-Twi and Fante. Akan is characterized by 21 plain consonants (including alveolo-palatal consonants and the labiopalatal approximant /ɥ/) plus consonants with secondary articulations (labiovelarization, labiopalatalization, palatalization), syllabic consonants (nasals and /r/), nine simple oral vowels (including a distinction between advanced tongue root and retracted tongue root vowels), three additional predictable vowels (including high front rounded vowels), five contrastively nasalized vowels, long (doubled) vowels, many vowel sequences (diphthongs), and tones (H vs L). Syllables are simple (a nucleus, optional onset, and never a coda), but words range from monosyllabic to six or more syllables. The writing system is based on the Latin alphabet. There are few studies of children's acquisition of Akan phonology. Researchers have focused on children who are typically developing or with speech sound disorders. Common speech assessments include The Osei-Bagyina Twi Articulation Test, and other informal assessment materials. Speech interventions include traditional articulation therapy, auditory discrimination, and minimal pairs.

Key words: Akan, Asante-Twi, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Amoako, W. K., Stemberger, J.P., & MacLeod, A. A. N. (2025). Akan speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation - forthcoming

- Amoako, W. K., Stemberger, J.P., & MacLeod, A. A. N. (forthcoming). *Akan: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-503
Children's speech development: Arabic (Egyptian)

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Egyptian Arabic is spoken by more than 110 million people, mainly in Egypt. It is one of the most understood varieties of Arabic, due to the widespread distribution of Egyptian films and television shows throughout the Arabic-speaking world. Egyptian Arabic has a consonant inventory of 27 phonemes, 8 vowel phonemes, and no diphthongs. Egyptian Arabic does not contain syllables with complex onsets or vowel-initial syllables. The few studies of children's acquisition of Egyptian Arabic describe the phonetic inventory, phonological patterns, word structure, prosody, and phonological awareness. Researchers have focused on children with speech sound disorders, childhood apraxia of speech, and cleft palate. Common speech assessments include the Mansoura Arabic Articulation Test, Arabic Phonological Awareness Test, Mansoura Arabic Test for Phonological Processes, Arabic Phonological Processing Assessment, Arabic Speech Intelligibility Test, and the Arabic Adaptation of the MacArthur-Bates Communicative Development Inventory. Interventions for Egyptian Arabic-speaking children include traditional articulation therapy, phonological awareness training, and a prosody treatment program.

Key words: Egyptian, Arabic, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Abou-Elsaad, T., Afsah, O., Saad, M., & Mansour, A. (2025). Arabic (Egyptian) speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Abou-Elsaad, T., Afsah, O., Saad, M., & Mansour, A. (forthcoming). *Arabic (Egyptian): Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: Arabic (Egyptian) [English version] – Children's Speech Development
- PowerPoint: Arabic (Egyptian) [English version] – Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-504
Children's speech development: Arabic (Kuwaiti)

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Kuwaiti Arabic is characterized by a wide range of consonants including pharyngeals, consonant clusters, a small vowel system (with a length distinction and diphthongs) and an alphabetic writing system (Arabic script). There are two main varieties/dialects, Modern Kuwaiti Arabic (MKA) and Bedouin Kuwaiti Arabic (BKA). Research on phonological acquisition of Kuwaiti Arabic has increased over the past decade, with studies of children with typical development, and speech sound disorders, including as a result of Down Syndrome. Ayyad and Bernhardt (2017, 2021) have designed recent assessment tools for Kuwaiti Arabic based on nonlinear phonology. Phonological intervention includes approaches found elsewhere such as minimal pair opposition therapy (Alsaad et al., 2019), and more recently, nonlinear approaches to goal-setting and treatment strategy development (Ayyad & Bernhardt, 2022).

Key words: Kuwaiti Arabic, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Ayyad, H., AlQuattan, S., & Bernhardt, B.M. (2025). Arabic (Kuwaiti) speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Ayyad, H., AlQuattan, S., & Bernhardt, B.M. (2024). *Arabic (Kuwaiti): Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: Arabic (Kuwaiti) [English version] - Children's Speech Development
- PowerPoint: Arabic (Kuwaiti) [English version] - Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-505
Children's speech development: Arabic (Lebanese)

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Lebanese Arabic is spoken in Lebanon and has a few dialects that can be roughly categorized into its main geographical areas, but that remain largely undocumented. Lebanese Arabic is characterized by 27 consonants, 8 vowels and 2 diphthongs; consonant clusters are permissible in coda position but onset clusters that result from vowel elision are also attested. Lebanese Arabic has no tones and uses an Arabic writing system. There are very few studies of children's acquisition of Lebanese Arabic. Researchers have focused on children with speech sound disorders. Common speech assessments include Epreuve de Discrimination Phonémique Arabe (EDiPhAr), the LITMUS Quasi-Universal Nonword Repetition Test (QU-NWR), and Evaluation du Langage Oral Libanais (ELO-L) and interventions include phonological awareness, traditional articulation therapy, auditory discrimination, and minimal pair therapy.

Key words: Lebanese Arabic, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Khattab, G. (2025). Arabic (Lebanese) speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation - forthcoming

- Khattab, G. (forthcoming). *Arabic (Lebanese): Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-506
Children's speech development: Azerbaijani/Azeri Turkish

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Azerbaijani/Azeri Turkish is spoken in the Islamic Republic of Iran. Also, there are Azerbaijani communities in Azerbaijan, Canada, Iraq, Sweden, Syria, Turkey and United States. Azeri Turkish is an intonational language characterized by 23 consonants, a few final consonant clusters CVC(C), and 9 vowels. The writing system in the Azeri Turkish alphabet is Arabic script. There are few studies of children's acquisition of Azeri Turkish. These studies demonstrated that speech sounds emerge by 3;0, and children master all consonants except /d, ʤ, ʦ, ʒ, v, ɟ/ by 6 years of age. There are no data about speech sound disorders, childhood apraxia of speech, dysarthria, or cleft lip and palate in Azeri Turkish speaking children. Common speech assessments include the Azeri Speech Test and the Azeri phonological test. There is no evidence-based intervention protocol for Azeri Turkish-speaking children.

Key words: Azerbaijani Turkish, Azeri Turkish, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Zarifian, T., Ahmadi, A., & Fekar-Gharamaleki, F. (2025). Azerbaijani/Azeri Turkish speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Zarifian, T., Fekar-Gharamaleki, F., & Ahmadi, A. (2024). *Azerbaijani/Azeri Turkish: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: Azerbaijani_Azeri Turkish [Azeri version] – Children's Speech Development
- Video: Azerbaijani_Azeri Turkish [English version] – Children's Speech Development
- PowerPoint: Azerbaijani_Azeri Turkish [English version] – Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
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ECV2024-507
Children's speech development: Bulgarian

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Bulgarian is an official language in Bulgaria and the European Union, and is a recognized minority language in some regions of Albania, the Czech Republic, Greece, Hungary, Moldova, Romania, Serbia, and Ukraine. Bulgarian words have optional onsets and codas and a variety of word lengths, stress patterns, and word-initial and -medial clusters. There are both plain and palatalized consonants (or consonant-/j/ sequences), phonemic and allophonic vowels and dialectal differences. Bulgarian orthography is relatively transparent and uses the Cyrillic alphabet. The studies of children's acquisition of Bulgarian generally demonstrate patterns found in other languages regarding early- and late-developing speech sounds and word structures, and developmental mismatch patterns. Researchers have focused minimally on children with speech sound disorders (Tsenova, 1997; Todorova, 2013). Common speech assessments include The Assessment of Articulation and Phonology in Childhood (Georgieva, 2004), and more recently Diagnostics of Speech and Speech Disorders in Childhood (Boyadzhieva-Deleva, 2022) and Phonological Development Test for Bulgarian Children (Ignatova et al., 2015). Speech interventions include approaches used in western countries, including nonlinear phonological intervention for goal setting and strategy planning (Ignatova et al., 2022), and Logorithmics (Tsenova, 2021), which is used as a supplementary intervention method.

Key words: Bulgarian, phonological awareness, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Ignatova, D., Bernhardt, B.M., & Marinova-Todd, S. (2025). Bulgarian speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Ignatova, D., Marinova-Todd, S., & Bernhardt, B.M. (2024). *Bulgarian: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: Bulgarian [English version] – Children's Speech Development
- PowerPoint: Bulgarian [Bulgarian version] – Children's Speech Development (pdf)
- PowerPoint: Bulgarian [English version] – Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
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- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-508
Children's speech development: Cantonese

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Cantonese is a tone language with 9 lexical tones. Its speech sound inventory includes 19 consonants, 11 vowels, 11 diphthongs, and no consonant clusters. Chinese script is a logographic writing system with characters as the basic unit. Studies on children's acquisition of Cantonese speech have demonstrated language specific features as well as patterns common in the acquisition of English. Researchers have focused on Cantonese speech problems related to speech sound disorders, hearing impairment, and cleft-palate. Common speech assessments include the Hong Kong Cantonese Articulation Test and the Cantonese Segmental Phonology Test.

Key words: Chinese, Cantonese, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- To, C., K. S., & Cheung, P. (2025). Cantonese speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- To, C., K. S., & Cheung, P. (2025). *Cantonese: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: Cantonese [English version] – Children's Speech Development
- PowerPoint: Cantonese [English version] – Children's Speech Development (pdf)

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ECV2024-509
Children's speech development: Danish

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Danish is spoken in Denmark, the Danish minority in northern Germany, in Greenland and the Faroe Islands. Several dialects are spoken in Denmark. However, today most people in Denmark speak a regional standard which is the National Standard with local traits. Danish is characterized by a rich vowel system and an unclear sound structure due to consonant weakening and schwa-assimilation which leads to many vocalic sounds. Danish includes 19 consonants, 41 distinctive vowels, 45 initial and 70 final consonant clusters, 49 diphthongs and does not use tone. Studies of children's acquisition of Danish indicate that children finish their acquisition of speech sounds around 4;0. Studies have also been carried out on Danish children with speech sound disorders of unknown origin as well as in children with cleft lip and palate. Common speech assessments for Danish include LogoFoVa and Kaj-testen, and often-used interventions are a psycholinguistic oriented phonology therapy (POPT) and the minimal pair approach.

Key words: Danish, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Clausen, M. C. (2025). Danish speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Clausen, M. C. (2024). *Danish: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: Danish [Danish version] – Children's Speech Development
- Video: Danish [English version] – Children's Speech Development
- PowerPoint: Danish [Danish version] – Children's Speech Development (pdf)
- PowerPoint: Danish [English version] – Children's Speech Development (pdf)

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ECV2024-510
Children's speech development: Dutch

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Dutch is spoken in Netherlands, Belgium, Suriname, Aruba, Curacao, and Sint Maarten, and there are many varieties, namely different forms of northern and southern accent and, recently, Moroccan Flavored Dutch. Standard Dutch is characterized by 22 consonants, many consonant clusters, 13 vowels, and 3 diphthongs. The writing system is not entirely transparent. There are many studies of children's acquisition of Dutch that provide a detailed description of typical development, speech sound disorders as well as of the processes underlying speech. Researchers have particularly focused on children with speech sound disorders, childhood apraxia of speech, dysarthria, and cleft lip and palate. Research on the underlying processes of speech yielded a process-oriented approach to diagnosis and therapy planning. Common speech assessments include picture naming tasks as well as phonological analyses of spontaneous speech. Interventions include phonological approaches consistent and inconsistent phonological disorders, classic articulation intervention detailed in Logo-Art, and speech motor interventions.

Key words: Dutch, Moroccan Flavored Dutch, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- van Doornik, A., Gerrits, E., Fikkert, P., Beers, M., & Terband, H. (2025). Dutch speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- van Doornik, A., Gerrits, E., Fikkert, P., Beers, M., & Terband, H. (2024). *Dutch: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: Dutch [Dutch version] – Children's Speech Development
- Video: Dutch [English version] – Children's Speech Development
- PowerPoint: Dutch [Dutch version] – Children's Speech Development (pdf)
- PowerPoint: Dutch [English version] – Children's Speech Development (pdf)

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ECV2024-511
Children's speech development: English (African American)

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This chapter focuses on an English dialect that is spoken by persons of African descent with a slave history in the USA. It is referred to as African American English (AAE). Its use varies with geographical location, social status, gender, discourse context and age. AAE is characterized by 24 consonants, 50+ consonant clusters, 13 vowels and 3 diphthongs. There are no phonemic tones nor is there a formal writing system. Acquisition of speech sounds and phonological rules generally follow the pattern of General American English (GAE). Research has focused mainly on children with developmental speech sound disorders without comorbidity. Speech assessments include norm-referenced standardized tests and criterion-referenced analyses of spontaneous oral language samples. Interventions include strategies for eradicating articulatory/phonological error patterns that differ from other AAE and GAE speakers, and strategies for teaching GAE as a second dialect to native-born typical and atypical AAE speakers.

Key words: English, African American English, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Stockman, I. J. (2025). English (African American) speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation - forthcoming

- Stockman, I. J. (2024). *English (African American): Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- PowerPoint: English (African American) [English version] – Children's Speech Development (pdf)

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ECV2024-512
Children's speech development: English (Appalachian)

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Appalachian English (AppE) is spoken in the east central region of the United States, an area including all of the state of West Virginia and the adjoining parts of several surrounding states. It includes the same consonants, consonant clusters, vowels, diphthongs, and writing system as General American English (GAE). As with all dialects it is characterized by a series of systematic variations of consonants, consonant clusters, and vowels which define much of its unique nature. There are only two known studies of children's acquisition of AppE making it difficult to reach definitive conclusions about acquisition of specific phonemes in this dialect at this time. There have been no studies regarding speech sound disorders in this population, and no specific speech assessments or interventions have been developed to date for use with speakers of this dialect.

Key words: English, Appalachian, dialect, consonant, vowels, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Flipsen, P. Jr. (2025). English (Appalachian) speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Flipsen, P. Jr. (2024). *English (Appalachian): Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: English (Appalachian) [English version] – Children's Speech Development
- PowerPoint: English (Appalachian) [English version] – Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
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ECV2024-513
Children's speech development: English (Australian)

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Australian English is spoken in Australia with the main dialects being Standard Australian English, Australian Aboriginal English, and Ethnocultural Australian English. Similar to most varieties of English, Australian English is characterized by 24 consonants, syllable-initial and syllable-final consonant clusters, approximately 20 vowels and diphthongs, and no tones. Studies of Australian English demonstrate that children are intelligible and can produce most consonants, consonant clusters, and vowels by 4- to 5-years of age. Many Australian researchers focus on children's speech and have provided evidence-based innovations that are used throughout the world regarding development, assessment, intervention, and service delivery for children with speech sound disorders, childhood apraxia of speech, dysarthria, cleft lip and palate, and hearing loss.

Key words: English, Australian, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- McLeod, S., & Blake, H. L. (2025). English (Australian) speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- McLeod, S., & Blake, H. L. (2024). *English (Australian): Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: English (Australian) [English version] – Children's Speech Development
- PowerPoint: English (Australian) [English version] – Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
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ECV2024-514
Children's speech development: English (Cajun)

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Cajun English is spoken in the Acadian Triangle (Acadiana) of Louisiana in the United States. Cajun French is considered the heritage dialect, which was brought to Louisiana in the mid-1700s. Cajun English is characterized by a similar phoneme inventory as General American English; however, defining phonological features of the dialect include distinct vowel and consonant productions as well as distinct stress patterns at the word and sentence level. There are very few studies of children's acquisition and use of Cajun English. Thus, little is known about children's development of this dialect and the dialectal changes they make as they age and become exposed to other English dialects. No studies have examined children with speech sound disorders within the context of Cajun English. Common speech assessments and interventions include those designed for General American English.

Key words: Cajun English, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Chung, H., & Oetting, J. B. (2025). English (Cajun) speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Chung, H., & Oetting, J. B. (2024). *English (Cajun): Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: English (Cajun) [English version] – Children's Speech Development
- PowerPoint: English (Cajun) [English version] – Children's Speech Development (pdf)

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- SDG 3: Good Health and Well-being
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ECV2024-515
Children's speech development: English (Canadian)

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Canadian English is spoken throughout Canada, although less so in Quebec where French is the official language. Standard Canadian is widespread notwithstanding marked dialectical differences in Newfoundland. The phonetic repertoire is similar to that of General American English, including stops, nasals, fricatives, affricates, semivowels, vowels and diphthongs along a range of place values and an obstruent voicing contrast; the rhotic /ɹ/ can be syllabic and occurs in codas. Canadian English is written from left to right using the Modern Latin Alphabet (Roman script). The few studies of children's acquisition of Canadian English that have been published demonstrate an acquisition trajectory similar to that of General American English with most phonemes acquired by age 7;0; except /θ, ð, s, z/ which may be mastered as late as 9 years. Canadian researchers have shown that a nonlinear approach to assessment and treatment as well as speech perception and phonological awareness treatment procedures are efficacious for speech sound disorders. Assessments that were developed in other English-speaking countries are commonly used.

Key words: English (Canadian), multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Rvachew, S., Bernhardt, B., Black, A., & Morgan, G. (2025). English (Canadian) speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation - forthcoming

- Rvachew, S., Bernhardt, B., Black, A., & Morgan, G. (2024). *English (Canadian): Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- PowerPoint: English (Canadian) [English version] – Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
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ECV2024-516
Children's speech development: English (English)

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Sara HOWARD, University of Sheffield, UK (s.howard@sheffield.ac.uk)

English (English) is spoken in England and can be distinguished from the other varieties of British English spoken in Scotland and Wales. There are many different varieties, with a broad distinction between northern England and the Midlands, on the one hand, and the southwest, southeast and East Anglia, on the other. English (English) is characterized by 24 consonants, 12 vowels and 7 diphthongs, and complex phonotactic patterns, with words containing up to three initial and four coda consonants. There are a number of studies, including some large-scale ones, that describe typical patterns of children acquiring English (English) although they commonly underreport social and regional variation. There are many studies on speech sound disorders in children from England as well as on children with cleft lip and palate. A common speech assessment is the Diagnostic Evaluation of Articulation and Phonology (DEAP, Dodd et al., 2002), and a common intervention is conventional minimal pairs (Weiner, 1981).

Key words: English (English), multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Mayr, R., Knight, R., Bates, S., Wren, Y., & Howard, S. (2025). English (English) speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Mayr, R., Knight, R., Bates, S., Wren, Y., & Howard, S. (2024). *English (English): Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: English (English) [English version] – Children's Speech Development
- PowerPoint: English (English) [English version] – Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
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ECV2024-517
Children's speech development: English (Fiji)

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Fiji English is an English dialect spoken in Fiji and among the Fijian diaspora. There are many sub-dialects of Fiji English (e.g., Fijian-Fiji English, Fiji Hindi-Fiji English) and considerable variability in the vowel and diphthong production of Fiji English within these sub-dialects. The consonant and consonant cluster production of all acrolectal variants is consistent with other English dialects containing up to 24 consonants. Studies of intelligibility and acquisition of Fiji English consonants demonstrate that school-aged Fijian children are intelligible and acquire Fiji English consonant sounds and consonant clusters at a similar age and in a similar sequence to other English-speaking children around the world; however, some Fijian children present with a speech sound disorder beyond expected ages of acquisition. The Intelligibility in Context Scale has been translated into Fiji English. To date, no speech interventions have been specifically designed for Fiji English speakers.

Key words: Fiji English, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- McAlister, H., Hopf, S. C., Geraghty, P. A., & McLeod, S. (2025). English (Fiji) speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- McAlister, H., Hopf, S. C., Geraghty, P. A., & McLeod, S. (2024). *English (Fiji): Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: English (Fiji) [English version] – Children's Speech Development
- PowerPoint: English (Fiji) [English version] – Children's Speech Development (pdf)

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ECV2024-518
Children's speech development: English (General American English)

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This chapter addresses the acquisition of General American English (GAE), which is one of more than 25 dialects of American English and is the most commonly used and understood dialect in the United States. General American English is characterized by 24 consonants, 26 word-initial consonant clusters, 18-19 vowels, and 3-4 diphthongs. There are a number of studies of children's acquisition of General American English that demonstrate children have largely acquired all English consonants by age 5-6 years. Researchers have also focused on children who have speech sound disorders that fall along a spectrum that involves an interaction between articulation and phonology which ranges from motor speech difficulty (e.g., articulation impairment, developmental dysarthria) to linguistic/phonological rules (e.g., speech delay, phonological impairment) with motor planning and/or programming falling between these two (e.g., childhood apraxia of speech). Common speech assessments include standardized articulation assessments (e.g., Goldman-Fristoe Test of Articulation-3, Arizona Articulation Proficiency Scale-4) and assessments that focus on phonological patterns (e.g., Hodson Assessment of Phonological Patterns, Bankson-Bernthal Test of Phonology). The most frequently used intervention for speech sound disorders in children continues to be the traditional articulation approach, but other phonological-based approaches include phonological awareness, minimal pairs, and cycles, along with newer contrastive variations that include multiple oppositions and maximal oppositions.

Key words: General American English, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Farquharson, K., Stoel-Gammon, C., Williams, A.L. & Bosma Smit, A. (2025). English (General American English) speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Presentation

- Farquharson, K., Stoel-Gammon, C., & Williams, A.L. (2023). *English (General American English): Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages

Presentation link

- English (General American English) – Children's Speech Development

Language overview presentation

- Farquharson, K., Stoel-Gammon, C., & Williams, A.L. (2023). *English (General American English): Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: English (General American English) [English version] – Children's Speech Development

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This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-519
Children's speech development: English (Irish)

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Irish English is spoken in Ireland and has two main varieties: Northern and Southern Irish English, relative to the border implemented by partition in 1921. Reference dialects have been described for key locations: Belfast (Northern Irish) English and Dublin (Southern Irish) English, for example, representing the speech in and close to the respective capital cities, and broader dialect zones across the island (Ulster Scots, for example, in the north; and east coast and west coast varieties in the south). Irish English varieties are differentiated from one another by their vowel and diphthongal systems, consonantal differences and aspects of suprasegmental organization. There are 24 consonants and 13 vowels (6 long and 7 short) plus 3 diphthongs. Researchers have focused on application of evidence to practice for children with speech sound disorders (SSD) resulting in a co-produced online resource supporting SLPs with evidence-based practice (SuSSD: also relevant UK-wide). A common speech assessment is the DEAP (Dodd et al., 2002; Leahy & Dodd, 2011), and the most frequently used intervention approach is conventional minimal pairs (Weiner, 1981).

Key words: Irish English [northern and southern varieties], multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Rahilly, J., & Titterington, J. (2025). English (Irish) speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Rahilly, J., & Titterington, J. (2024). *English (Irish): Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: English (Irish) [English version] – Children's Speech Development
- PowerPoint: English (Irish) [English version] – Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-520
Children's speech development: English (New Zealand)

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New Zealand English (NZE) is spoken in New Zealand and the Cook Islands. There are few varieties, namely Southland English and Māori English. New Zealand English is characterized by 24 consonants and consonant clusters typically associated with Australian English and English spoken in the United Kingdom. In terms of vowels, NZE is a non-rhotic dialect, with the main difference with General American English being the absence of rhotic vowels in NZE. There are several studies of children's acquisition of NZE that demonstrate similarities as well as differences with children learning other dialects of English. Researchers have focused on integrated phonological awareness, letter knowledge, and speech sound interventions for children with speech sound disorders, including those with childhood apraxia of speech. Common speech assessments include the New Zealand Articulation Test and the Diagnostic Evaluation of Articulation and Phonology. Interventions for children with speech sound disorder (SSD) are similar to those used with children who speak other dialects of English.

Key words: New Zealand English, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Macrae, T., McNeill, B., Gillon, G. T., & Maclagan, M. (2025). English (New Zealand) speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation - forthcoming

- Macrae, T., McNeill, B., Gillon, G. T., & Maclagan, M. (forthcoming). *English (New Zealand): Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
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ECV2024-521
Children's speech development: English (Scottish)

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Scottish English is primarily spoken in Scotland, U.K. It is a national quasi-standard variety of English with a range of social and geographical variants. It can be characterized as a highly distinctive accent (or accent group) of English, mainly due to its relationship to Scots. Its strongly distinct character may be more phonetic, prosodic and lexical than strictly phonemic and phonological, so for practical reasons it can be assumed that its inventory and consonant phonotactics overlap sufficiently with other varieties for many "British English" clinical resources to be applicable. Scottish English is, however, rhotic in its prestige varieties, which makes it markedly different from non-rhotic Southern Standard British English and other non-rhotic varieties. There are few specific studies of children's acquisition of Scottish English, though Scottish children are often incorporated in larger studies in the U.K. Research on Scottish English has focused on social variation, speech production, and remediation techniques augmented with real time visual biofeedback, involving children with speech sound disorders and cleft palate. Commonly-used speech assessments and interventions have not been developed specifically for this variety of English.

Key words: Scottish English, Scots, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Scobbie, J. M., Cleland, J., Lawson, E. & Schaeffler, S. (2025). English (Scottish) speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Scobbie, J. M., Cleland, J., Lawson, E. & Schaeffler, S. (2024). *English (Scottish): Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: English (Scottish) [English version] – Children's Speech Development
- PowerPoint: English (Scottish) [English version] – Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

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ECV2024-522
Children's speech development: English (South African)

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South African English (SAE) is a variety of English spoken in South Africa. It has its own varieties, which have been identified as belonging to three broad ethnolects, each of which is related to the geographical regions of speakers, and their socioeconomic backgrounds. SAE is characterized by 24 consonants, 14 vowels, and seven diphthongs. It is written from left to right using the Roman script and follows the conventions of British English spelling. There are few studies detailing speech acquisition of SAE. The trajectory of speech acquisition in SAE appears to be similar to that of British English. Some variations have been noted in the speech of monolingual and multilingual children, and these were found to be typical for the varieties of SAE spoken. For instance, word-final devoicing of plosives is typical for children acquiring SAE as a second language but is a phonological process typical in younger monolingual children. Furthermore, preliminary data estimated the prevalence of children with speech sound disorders (SSDs) in children acquiring SAE as 9.09%.

Key words: South African English, sociolects, ethnolects, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Mahura, O., Pascoe, M., & Ribbens-Klein, Y. (2025). English (South African) speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation - forthcoming

- Mahura, O., Pascoe, M., & Ribbens-Klein, Y. (forthcoming). *English (South African): Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages

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- SDG 3: Good Health and Well-being
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ECV2024-523
Children's speech development: English + Cantonese

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Cantonese-English is spoken in Hong Kong and Macau where Cantonese is one of the official languages and most of the locally born residents learn English as a second language. Cantonese speakers have also migrated around the world, particularly to Australia, Canada, New Zealand, Singapore, the UK, and the USA. Language-transfer depends on language dominance and environment. Besides having differences in consonants and vowels, Cantonese is a syllable-timed tone language while English is a stress-timed intonation language. English uses an alphabetic script while Chinese uses characters (traditional or simplified scripts). Studies on bilingual children's speech acquisition of Cantonese and English reported similar developmental patterns to monolingual speakers of the languages, but with evidence of cross-linguistic transfer. There have only been a few studies on speech sound disorders in Cantonese-English, no specifically designed speech assessments, and one intervention study that compared articulation and phonology approaches.

Key words: English, Cantonese, bilingual, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- To, C., K. S., Cheung, P., & McLeod, S. (2025). English + Cantonese speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation - forthcoming

- To, C., K. S., Cheung, P., & McLeod, S. (forthcoming). *English + Cantonese: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages

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ECV2024-524
Children's speech development: English + French

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There are many bilingual speakers of English and French across the world; and this chapter focuses on the Canadian context. Both English and French are the official languages of Canada and nearly one out of five Canadians speak both languages. Canadian French includes 20 consonants and Canadian English a total of 24. Both languages allow for a variety of consonant clusters in syllable initial and final position that occur in different word positions, and a large vowel inventory including allophonic variation, and a writing system based on the roman alphabet. However, the specific consonants and vowels differ in type and also frequency of occurrence. In addition, Canadian English is a stress-timed language whereas Canadian French is a syllable timed language. There are few studies of children's bilingual acquisition of Canadian French and English, and fewer studies of children with speech sound disorders. There are no speech assessments specifically designed for these bilingual children.

Key words: English, French, bilingual, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- MacLeod, A., Bérubé, D., & Brosseau-Lapré, F. (2025). English + French speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation - forthcoming

- MacLeod, A., Bérubé, D., & Brosseau-Lapré, F. (forthcoming). *English + French: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages

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ECV2024-525
Children's speech development: English + Greek

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Bilingual English and Greek speakers primarily live in the United States, Australia, Canada, Britain, but also in Greece and Cyprus. English + Greek variants comprise a standard and/or a dialect in the language pair, e.g., General American English and Standard Modern Greek. English + Greek combines typologically different languages with shared and divergent patterns in their segmental inventories, cluster types, phonotactics, syllable structures, and stress. Greek phonology is simpler than English, but its words are longer with more cluster types and carry dynamic stress, in contrast to the predominant monosyllables and complex prosody of English. Few production studies of children's typical acquisition of English + Greek speech investigate vocabulary, segmental/cluster acquisition, and phonological awareness (e.g., Babatsouli, 2017, 2022c; Geronikou et al., 2022; Papastefanou et al., 2019; Papastergiou & Sanoudaki, 2021), while research on perception is scarce (Georgiou, 2019). There are no assessments, interventions, or research on English + Greek children with speech sound disorders, although the constraints-based and complexity theoretical frameworks are advanced (Babatsouli, 2016a, 2019c), and there is some overlap with SLI (Kambanaros et al. 2017).

Key words: English, Greek (Standard, Cypriot), multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Babatsouli, E. (2025). English+Greek speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Babatsouli, E. (2024). *English+Greek: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: English + Greek [Greek version] – Children's Speech Development
- Video: English + Greek [English version] – Children's Speech Development
- PowerPoint: English + Greek [Greek version] – Children's Speech Development (pdf)
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ECV2024-526
Children's speech development: English + Spanish

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Spanish and English as a language pair are spoken in a myriad of countries in which Spanish or English is the major or official language, including many other countries. Spanish is characterized generally as having 18 consonant and five vowel phonemes. Spanish also contains many syllable-onset consonant clusters and word-internal abutting consonant pairs. English generally has 24 consonants and 13 monophthong and diphthong vowel phonemes. English also contains many syllable-onset consonant clusters and word-internal abutting consonant pairs. Research studies of Spanish-English speech sound development of typically developing children indicate a similar acquisition timetable to cross-linguistic studies of English and Spanish. There are far fewer studies examining speech sound development in Spanish-English–speaking children with speech sound disorders. Formal and informal assessments are used to determine speech sound skills in Spanish-English–speaking children. Best practice intervention is the use of a bilingual approach.

Key words: Spanish, English, bilingual, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Goldstein, B. A., & Prezas, R. (2025). English + Spanish speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation - forthcoming

- Goldstein, B. A., & Prezas, R. (2024). *English + Spanish: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- PowerPoint: English + Spanish [English version] – Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
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ECV2024-527
Children's speech development: English + Vietnamese

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Bilingual Vietnamese-English speakers predominantly live in Vietnam, Australia, Canada, the United States, and New Zealand. There are four main Vietnamese dialects and many English dialects. Standard Vietnamese has 23 consonants and many English dialects have 24 consonants. Vietnamese and English share 16 consonants, and many vowels, although overlap varies according to dialects. Vietnamese has 13 unshared consonants and uses tone to differentiate meaning. English has 8 unshared consonants and frequently uses consonant clusters. While Vietnamese and English use Modern Latin Alphabet, graphemes and phonemes do not always match. Vietnamese also uses diacritics for tone markings in their orthography. There is one major study of bilingual Vietnamese-English-speaking children's speech acquisition, and case studies. Speech assessments used with bilingual Vietnamese-English-speaking children include the Vietnamese Speech Assessment, Intelligibility in Context Scale, and Speech Participation and Activity Assessment of Children; and interventions include VietSpeech SuperSpeech.

Key words: Vietnamese, English, bilingual, Standard Vietnamese, Northern Vietnamese, Central Vietnamese, Southern Vietnamese, tones, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Margetson, K., McLeod, S., Tran, V., Verdon, S., & Phạm, B. (2025). English + Vietnamese speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Margetson, K., McLeod, S., Tran, V., Verdon, S., & Phạm, B. (2024). *English + Vietnamese: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: English + Vietnamese [English version] – Children's Speech Development
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ECV2024-528
Children's speech development: Finnish

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Finnish is mainly spoken in Finland, although small Finnish-speaking minority groups exist in Sweden, Norway, Estonia, Russia, and North America. Finnish is characterized by relatively small consonant and vowel paradigms and is among the few languages with a phonologically contrastive length independently of stress. Word-initial and word-final consonant clusters are rare, whereas within word heterosyllabic clusters are very common. The orthography is very transparent. There are several studies of children's acquisition of Finnish that demonstrate both universal and language-specific characteristics. In addition to the typical acquisition, researchers have focused on children with speech sound disorders. Common speech assessments include the Finnish Test of Phonology and the Finnish version of the Intelligibility in Context Scale. In addition, some non-standardized tests are used. An eclectic intervention approach blending different approaches is mainly adopted in clinical practice.

Key words: Finnish, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Kunnari, S., Savinainen-Makkonen, T., Saaristo-Helin, K., & Martikainen, A-L. (2025). Finnish speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Kunnari, S., Savinainen-Makkonen, T., Saaristo-Helin, K., & Martikainen, A-L. (2024). *Finnish: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: Finnish [Finnish version] – Children's Speech Development
- Video: Finnish [English version] – Children's Speech Development
- PowerPoint: Finnish [Finnish version] – Children's Speech Development (pdf)
- PowerPoint: Finnish [English version] – Children's Speech Development (pdf)

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ECV2024-529
Children's speech development: Flemish

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Flemish is a variant of Dutch. It is spoken in Flanders (i.e., the Northern part of Belgium) and in some southern areas in the Netherlands. There are different Flemish dialects, namely West and East Flemish, Brabantian, and Limburgish. Flemish is characterized by 23 consonants, consonant clusters, 13 vowels, and 3 diphthongs. There are several studies of children's acquisition of Flemish that demonstrate that most consonants are correctly produced by 75% of the children around the age of 4;0. Around the age of 3;0, all vowels are correctly produced by 90% of the Flemish children. Researchers have focused on children with speech sound disorders, childhood apraxia of speech, dysarthria, cleft lip and palate, and children with hearing loss. Common speech assessments include the Antwerp Phonological Processes Analysis, Phonological Awareness Assessment, and Logo-Art articulation assessment. Common speech interventions include phonetic articulation therapy, auditory discrimination, Metaphon Approach, Cycles approach, and PROMPT.

Key words: Flemish, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Alighieri, C., D'haeseleer, E., & Van Lierde, K. (2025). Flemish speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Alighieri, C., D'haeseleer, E., & Van Lierde, K. (2024). *Flemish: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: Flemish [Flemish version] – Children's Speech Development
- Video: Flemish [English version] – Children's Speech Development
- PowerPoint: Flemish [Flemish version] – Children's Speech Development (pdf)
- PowerPoint: Flemish [English version] – Children's Speech Development (pdf)

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ECV2024-530
Children's speech development: French (Canadian)

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Susan RVACHEW, McGill University, Canada, (susan.rvachew@mcgill.ca)
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Canadian French is spoken in Canada and there are two main varieties: Laurentian and Acadian. Canadian French is characterized by 20 consonants, a variety of consonant clusters in syllable initial and final position that occur in different word positions, a large vowel inventory including allophonic variation, and a writing system based on the Roman alphabet. There are several studies of children's acquisition of Canadian French, particularly the Laurentian variety that demonstrate early consonant acquisition between the ages of 20 months to 7 years. Researchers have also focused on children with speech sound disorders. Common speech assessments include Évaluation Sommaire de la Phonologie des enfants d'âge Préscolaire, Test de Phonologie du Français Canadien-Depistage, and Test de Dépistage Francophone de la Phonologie.

Key words: French, Canadian French, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- MacLeod, A., Bérubé, D., Rvachew, S., & Brosseau-Lapré, F. (2025). French (Canadian) speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation - forthcoming

- MacLeod, A., Bérubé, D., Rvachew, S., & Brosseau-Lapré, F. (2024). *French (Canadian): Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- PowerPoint: French (Canadian) [English version] – Children's Speech Development (pdf)

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ECV2024-531
Children's speech development: French (France)

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French is the official language of 31 countries and there are a large number of French dialects. In this chapter, we focus on French spoken in France, specifically, the dialect that is theoretically taught in school (this variety is also named français de référence 'Reference French'). French has 17 consonants, 3 semi-vowels and 14 vowels, where 11 are oral and 3 are nasal. It allows for consonant clusters word-initially, word-medially and word-finally. There are several studies of children's acquisition of French that demonstrate that French phonology tends to be acquired quite early. Researchers have focused on children with developmental language disorders. Common speech assessments include picture naming tasks, word and nonword repetition.

Key words: French, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Almeida, L., & dos Santos, C. (2025). French (France) speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- • Almeida, L., & dos Santos, C. (2024). *French (France): Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: French (France) [French version] – Children's Speech Development
- Video: French (France) [English version] – Children's Speech Development
- PowerPoint: French (France) [French version] – Children's Speech Development (pdf)
- PowerPoint: French (France) [English version] – Children's Speech Development (pdf)

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- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-532
Children's speech development: French (Swiss)

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Swiss French is spoken in the western part of Switzerland and consists of many different varieties, including the dialect subgroups of Geneva, Vaud, Valais, Fribourg, Neuchâtel, and Jura. Swiss French is characterized by 20 consonants and 16 vowels as well as consonant clusters that occur in syllable-initial and -final positions. There are a few studies of children's acquisition of Swiss French that document the percentage correct of consonants, consonant clusters, and vowels as well as phonological processes and common mismatches. There are no studies on the age of acquisition of consonants, consonant clusters, and vowels nor any studies of children with speech sound disorders. The Dépistage Rapide Articulation et Phonologie (DRAP) is a screening test designed to detect Swiss French (and other European French) monolingual and bilingual children at risk for having speech sound disorders.

Key words: Swiss French, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Kehoe, M. & Niederberger, N. (2025). French (Swiss) speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Kehoe, M. & Niederberger, N. (2024). *French (Swiss): Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: French (Swiss) [French version] – Children's Speech Development
- Video: French (Swiss) [English version] – Children's Speech Development
- PowerPoint: French (Swiss) [French version] – Children's Speech Development (pdf)
- PowerPoint: French (Swiss) [English version] – Children's Speech Development (pdf)

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- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-533
Children's speech development: German

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German is spoken in a number of central European countries, specifically Germany, Austria, Switzerland, and Liechtenstein and there are many varieties as well as dialects. Standard German is characterized by 23 consonants, 2- and 3-element consonant clusters, seven vowels, and three diphthongs. German uses the Modern Latin Alphabet. There are several studies of children's acquisition of German that demonstrate that systematic phonological patterns can be found from the age of 2;6 and that phonological acquisition is completed by 5 years of age. Researchers have focused on children with speech sound disorders (SSD) and dysarthria. Small studies exist on childhood apraxia of speech and hearing impairment. Common speech assessments include Psycholinguistische Analyse kindlicher Sprechstörungen (PLAKSS-II; Fox-Boyer, 2014), Patholinguistische Diagnostik von Sprachentwicklungsstörungen – Teil: Phonologie (PDSS; Kauschke et al., 2022), Analyseverfahren zu Aussprachestörungen bei Kindern (AVAK; Hacker & Wilgermenin,, 2002), and LOGO Ausspracheprüfung (Wagner, 2011) and interventions include traditional articulation therapy, phonological therapy, seldom inconsistency treatment, and a number of unpublished treatments for childhood apraxia of speech (CAS).

Key words: German, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Fox-Boyer, A., & Lang, S. (2025). German speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Fox-Boyer, A., & Lang, S. (2024). *German: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: German [German version] – Children's Speech Development
- Video: German [English version] – Children's Speech Development
- PowerPoint: German [German version] – Children's Speech Development (pdf)
- PowerPoint: German [English version] – Children's Speech Development (pdf)

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- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
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ECV2024-534
Children's speech development: Greek (Cypriot)

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Cypriot Greek is spoken primarily in Cyprus and is currently characterized by levelling of local sub-varieties and by the emergence of a dialectal continuum ranging from basilectal to acrolectal forms. Cypriot Greek is characterized by its geminate consonants, which can be found in word-initial and within-word positions. There are several studies on children's acquisition of Cypriot Greek demonstrating that phonetic inventories increase as a function of age with significant developmental trends occurring between the ages of 1;6 and 5;0. Latest acquired segments include the establishment of affricates and the normalization of the voicing categories (e.g., voice onset time). Studies on children with speech sound disorders suggested that protracted phonological patterns include persisted omission of word-initial onsets, occurrence of regressive assimilation, and inconsistent realization of multisyllabic targets. Common interventions include: auditory discrimination, minimal pairs, cued articulation, phonological awareness, traditional articulation therapy, auditory bombardment, the Nuffield Centre Dyspraxia Program, and core vocabulary.

Key words: Greek, Cypriot, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Petinou, K., Armostis, S., & Babatsouli, E. (2025). Greek (Cypriot):speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation - forthcoming

- Petinou, K., Armostis, S., & Babatsouli, E. (2024). *Greek (Cypriot): Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- PowerPoint: Greek (Cypriot): [English version] – Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-535
Children's speech development: Greek (Standard)

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Greek is spoken in Greece and in Greek-speaking diaspora and there are few varieties/dialects including Cretan, Cypriot-Greek, Tsakonian, Cappadocian. Greek is characterized by multisyllabic words carrying dynamic stress, 32 consonants including allophones, 5 vowels, two diphthongs, several consonant and vowel sequences, and its own alphabetical writing system. There are several studies of children's acquisition of Greek that demonstrate extensive phonological variety by the occurrence of multiple and parallel phonological grammars and, also, language-specific phonetic characteristics. Researchers have focused on children with hearing loss, phonological delay, and diadochokinetic skills. Speech sound disorders research focusing on phonological delay indicates difficulties in acquiring phonological complexity in terms of features, segmental sequences, and word length (Babatsouli, 2019a; Babatsouli & Geronikou, 2022). Diadochokinetic (DDK) results support the differential diagnosis classification (Tafiadis et al., 2021). Speech assessments include those of the Panhellenic Association of Logopaedics (PAL, 1995; 2000; 2007) and the Phono¬logical Assessment Test for Greek (PAel) (Babatsouli, 2019a). Lastly, interventions include motor-phonetic, auditory-phonological, and linguistic-phonological approaches (e.g., Babatsouli & Geronikou, 2022; Okalidou et al. 2011; Van Riper & Erickson, 1996; Weiner, 1981).

Key words: Greek, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Okalidou, A., & Babatsouli, E. (2025). Greek (Standard) speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation - forthcoming

- Okalidou, A., & Babatsouli, E. (2024). *Greek (Standard): Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: Greek (Standard) [English version] – Children's Speech Development
- PowerPoint: Greek (Standard) [Greek version] – Children's Speech Development (pdf)
- PowerPoint: Greek (Standard) [English version] – Children's Speech Development (pdf)

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ECV2024-536
Children's speech development: Hebrew

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Israeli Hebrew is spoken in Israel and there is one main dialect. Israeli Hebrew (henceforth, Hebrew) is characterized by 23 consonants, several dozen consonant clusters, five vowels, debatable diphthongs, and a syllabary writing system. There are several studies of children's acquisition of Hebrew that demonstrate the acquisition of consonants, vowels and the prosodic structures of the language. Researchers have focused on children with typical development, with few studies on children with speech sound disorders (SSD). Common speech assessments include two normed articulation tests (HAFAKA, Ben-David, 2021 and the articulation subtest of the Goralnik Language Screening Test, 1995) and interventions include motor and phonological therapy methods used internationally, as well as methods developed specifically for the Hebrew-speaking population, such as Color-Shape-Sound (Nachmani, 2004).

Key words: Israeli Hebrew, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Ben-David, A., & Paltiel-Gedalyovich, L. R. (2025). Hebrew speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation - forthcoming

- Ben-David, A., & Paltiel-Gedalyovich, L. R. (2024 forthcoming). *Hebrew: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages

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- SDG 3: Good Health and Well-being
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ECV2024-537
Children's speech development: Hungarian

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Hungarian is spoken by 12-13 million people in Hungary, Austria, Slovakia, Ukraine, Romania, Serbia, Croatia, and communities worldwide. There are eleven main dialects, including Standard Hungarian. Standard Hungarian is characterized by 25 consonants that can be geminated, over 435 consonant clusters, 14 vowels, no diphthongs/triphthongs, no tones, and a Latin-based nearly perfectly phonemic writing system. Studies of Standard Hungarian acquisition in children point to relatively late acquisition of front rounded vowels /ø(ː), y(ː)/ and palatalized consonants /c, ɟ, ɲ/; and even later acquisition of /l/ and trilled /r/. Major phonological processes in typically developing children under 6;0 include fronting, fricativization, stopping, depalatalization of /c, ɟ/, lateralization, and approximantization. Further, at 6;0, context-dependent devoicing still operates in word-initial and word-final obstruents. The commonly used speech assessment is part of the SZÓL-E? screening test for 5-year-olds. The typically used intervention is traditional articulation therapy, but phonological intervention is gaining ground.

Key words: Hungarian, Standard Hungarian, Hungarian dialects, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Zajdó, K., & Jacobs, A., L. (2025). Hungarian speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation - forthcoming

- Zajdó, K., & Jacobs, A., L. (2024). *Hungarian: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- PowerPoint: Hungarian [English version] – Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
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ECV2024-538
Children's speech development: Icelandic

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Icelandic is spoken in Iceland with few dialectal variations. Icelandic is a Germanic language, characterized by approximately 25 consonants, more than 500 consonant clusters in three word positions, eight vowels and five diphthongs. There are a small number of studies on the acquisition of Icelandic that demonstrate phonological development of children at 2;4-7;11 years of age. Most children have acquired most singleton phonemes at age 4;6-4;11 and most consonant clusters at age 5;0-5;5. Percentage of consonants correct (PCC) ranges from 73.12% at age 2;6-2;11 to 98.55% at age 7;0-7;11. Common phonological patterns in the speech of typically developing children are substitution patterns (e.g., dentalization and interdentalization) and simplification patterns (e.g., cluster reduction). Most children with speech sound disorders (SSD) follow the same phonological patterns as typically developing children, however, at a slower rate. One speech assessment for Icelandic has been standardized, Málhljóðapróf ÞM. Limited attention has been on intervention for children with SSD.

Key words: Icelandic, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Másdóttir, T. (2025). Icelandic speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Másdóttir, T. (2024). *Icelandic: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: Icelandic [Icelandic version] – Children's Speech Development
- Video: Icelandic [English version] – Children's Speech Development
- PowerPoint: Icelandic [Icelandic version] – Children's Speech Development (pdf)
- PowerPoint: Icelandic [English version] – Children's Speech Development (pdf)

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ECV2024-539
Children's speech development: Irish

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Irish is a minority language spoken in Ireland, predominantly in 'Gaeltacht' areas along the South and West coasts. The three main dialects are Donegal/Ulster, Connacht and Munster. Irish is characterized by velarised (broad) and palatalised (narrow) consonants, consonant clusters, vowels, diphthongs and uses a Roman written script. Most children acquiring Irish do so in a bilingual context with English as the majority language. There are only two studies of children's acquisition of Irish, both with small numbers of participants. They mainly describe the acquisition of consonants and note the presence of phonological processes. There have been no studies on Irish speaking children with speech sound disorder. Although Irish speakers have statutory rights to receive speech-language pathology (SLP) services in Irish, clinicians are not trained to work in the language and there are no standardised assessment or intervention materials, apart from those translated from English.

Key words: Irish, Donegal/ Ulster, Connacht, Munster, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- O'Toole, C., O'Malley, M. and Ní Chonghaile, Í. (2025). Irish speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- O'Toole, C., O'Malley, M. and Ní Chonghaile, Í. (2023). *Irish: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: Irish [English version] – Children's Speech Development
- PowerPoint: Irish [English version] – Children's Speech Development (pdf)

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- SDG 3: Good Health and Well-being
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- SDG 17: Partnerships to Achieve the Goals

ECV2024-540
Children's speech development: Italian

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Italian is the official language of the Italian peninsula and the Canton Ticino. It is also spoken across several countries as a first or subsequent language (L1/L2). It presents local/regional variations and independent local dialects. Italian is characterized by 23 consonants, 7 vowels, and 9 diphthongs (plus 12 glide+V) and is considered a transparent language. Studies of children's acquisition of Italian mostly focus on consonants, demonstrating continuing development beyond the age of 5;0. Typically developing children present both structural and systemic patterns. Research on children with speedh sound disorders (SSD) focused on children with phonological disorder or with childhood apraxia of speech (CAS). Several speech assessments are available. Interventions include, among others, perceptive-motor and cognitive-linguistic training, non-speech oral motor treatment (NSOMT), and Prompts for Restructuring Oral Muscular Phonetic Targets (PROMPT).

Key words: Italian, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Lavaggi, S., Fox-Boyer, A., & Fricke, S. (2025). Italian speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Lavaggi, S., Fox-Boyer, A., & Fricke, S. (2024). *Italian: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: Italian [Italian version] – Children's Speech Development
- Video: Italian [English version] – Children's Speech Development
- PowerPoint: Italian [Italian version] – Children's Speech Development (pdf)
- PowerPoint: Italian [English version] – Children's Speech Development (pdf)

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ECV2024-541
Children's speech development: Jamaican Creole

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Joseph FARQUHARSON, University of the West Indies (Mona), Jamaica (joseph.farquharson@uwimona.edu.jm)

Jamaican Creole is spoken primarily in Jamaica but is also spoken in other countries where Jamaicans reside in large communities (e.g., Canada, the United Kingdom). Many Jamaicans are simultaneous speakers of Jamaican Creole and English, demonstrating varying levels of proficiency and movement along the continuum (Jamaican Creole to English). Jamaican Creole is characterized by 21 consonant and 15 vowel phonemes. It is primarily an oral language, but a standardized phonemic orthography has recently been developed. There is one published study of children's phonological acquisition of Jamaican Creole and English (n = 24, longitudinal design) and two studies of children's intelligibility. Historically, researchers have focused on adult speakers, with limited knowledge of children's acquisition, either children with typical development or speech sound disorders. No common speech assessments or interventions are currently available for this population.

Key words: Jamaican Creole, Standard Jamaican English, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Washington, K. N., Crowe, K., Basinger, M., & Farquharson, J. (2025). Jamaican Creole speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Washington, K. N., Crowe, K., Basinger, M., & Farquharson, J. (2024). *Jamaican Creole: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: Jamaican Creole [Creole version] – Children's Speech Development
- Video: Jamaican Creole [English version] – Children's Speech Development
- PowerPoint: Jamaican Creole [Creole version] – Children's Speech Development (pdf)
- PowerPoint: Jamaican Creole [English version] – Children's Speech Development (pdf)

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- SDG 3: Good Health and Well-being
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ECV2024-542
Children's speech development: Japanese

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Japanese is spoken primarily in Japan and there are many varieties, including those spoken around Tokyo, Kyoto/Osaka, Tohoku and Okinawa. Japanese has 15 consonants, five short vowels, five long vowels, and seven consonant clusters. It is characterized by durational contrasts in both consonants and vowels and a pitch accent system. Japanese uses mora as a unit of metaphonological organization and has a complex writing system that includes two sets of syllabaries (hiragana and katakana) and a large number of kanji characters borrowed from Chinese. There are many studies of Japanese children's speech development of consonants and vowels, pitch accent, and phonological awareness. Clinical research has focused on the assessment and treatment of speech sound disorders, dysarthria, cleft lip/palate and stuttering. Common speech assessments include Shinteiban Kotoba no Tesuto Ehon [Revised word test picture book], Kōon Hattatsu Yosoku Kensa [Articulation development prognosis test], and Kōon Kensahō [Articulation test method], and one of the most commonly used intervention is Van Riper and Erickson's (1996) traditional articulation therapy.

Key words: Japanese, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Ota, M., & Ueda, I. (2025). Japanese speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Ota, M., & Ueda, I. (2024). *Japanese: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: Japanese [Japanese version] – Children's Speech Development
- Video: Japanese [English version] – Children's Speech Development
- PowerPoint: Japanese [Japanese version] – Children's Speech Development (pdf)
- PowerPoint: Japanese [English version] – Children's Speech Development (pdf)

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ECV2024-543
Children's speech development: Kurdish

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Kurdish is spoken in Iran, Turkey, Iraq, and Syria. There are three major varieties, namely Southern, Central (Sorani), and Northern Kurdish. Kurdish as a syllable-timed/transparent language, is characterized by having 30 consonants, 8 vowels, and 6 diphthongs. There are initial and final consonant clusters in Kurdish C(C)V(C)(C)(C). A twin-standard writing system known as Arami (Arabic) and Latin is applied in Kurdish. There are a few studies of children's acquisition of Kurdish that demonstrate that Kurdish speech sounds emerge until 3;6 and children master the sounds after 5 years. Researchers have focused on children with typical development, childhood apraxia of speech, and cleft lip and palate. The most common speech assessment is Kurdish speech-language pathologists (SLPs) use the the Kurdish Speech Test (KST) and traditional and new interventions designed for the treatment of speech sound disorders; however, there is no adaptation of any program or new method developed specifically for Kurdish-speaking children.

Key words: Kurdish, Central Kurdish, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Fatemi-Syadar, S. & Zarifian, T. (2025). Kurdish speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Fatemi-Syadar, S. & Zarifian, T. (2024). *Kurdish: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: Kurdish [Kurdish version] – Children's Speech Development
- Video: Kurdish [English version] – Children's Speech Development
- PowerPoint: Kurdish [Kurdish version] – Children's Speech Development (pdf)
- PowerPoint: Kurdish [English version] – Children's Speech Development (pdf)

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ECV2024-544
Children's speech development: Laki

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Marjan LARIMIAN, Babol University of Medical Sciences, Iran (Marjan.larimian@gmail.com)

Laki is spoken in the Islamic Republic of Iran, Iraq, and Turkey. This language comprised of 27 consonants, a few initial and final consonant clusters [C(C)VC(C)], and eight vowels. There is one study about Laki-speaking children's typical speech sound acquisition and there are no data about Laki-speaking children with speech sound disorders, childhood apraxia of speech, dysarthria, or cleft lip and palate. Recently, a test has been validated for the assessment of speech sounds in Laki-speaking children. To date, no evidence-based intervention protocol has been developed for Laki-speaking children.

Key words: Laki, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Ahmadi, A., Malmir, Z., Pascoe, M., Zarifian, T., & Larimian, M. (2025). Laki speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Ahmadi, A., Malmir, Z., Pascoe, M., Zarifian, T., & Larimian, M. (2024). *Laki: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: Laki [Laki version] – Children's Speech Development
- Video: Laki [English version] – Children's Speech Development
- PowerPoint: Laki [English version] – Children's Speech Development (pdf)

Comparison with other languages
This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-545
Children's speech development: Maltese

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Maltese is spoken in the Maltese Islands and there are few varieties/dialects. Maltese phonology is characterized by 22 consonantal phonemes, 23 when /dz/ is given phonemic status (Borg & Azzopardi-Alexander, 1997). Many cluster combinations can exist. Maltese has 11 monophthongs (5 short vowels and 6 long vowels); it also includes 7 diphthongs. Stress is generally on the penultimate syllable. Maltese is the only Semitic language written with a Roman alphabet. There are a few studies of children's acquisition of Maltese that demonstrate typical development between 2;0–6;0 years of age. Phonetic and phonemic inventories of Maltese children have been compiled as well as typical developmental processes of Maltese and Maltese-English bilingual children. The only standardized speech assessment is the Maltese-English Speech Assessment: MESA (Grech et al., 2011).

Key words: Maltese, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Grech, H. (2025). Maltese speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation - forthcoming

- Grech, H. (2024). *Maltese: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- PowerPoint: Maltese [English version] – Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-546
Children's speech development: Mandarin (Putonghua)

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Mandarin (Putonghua) is the official language of Mainland China and one official language of Singapore and Taiwan. It is also commonly spoken in Indonesia, and is a minority language in many other regions of the world. Beijing Mandarin is the most widespread variant. There are over 20 consonants and glides, and vowels include monophthongs, diphthongs, and arguably, triphthongs. (Linguists disagree on the exact numbers of phonemes versus allophones for both vowels and consonants.). Mandarin has five lexical tones (including a neutral tone in final syllables), trochaic word stress and phrasal intonation. Disyllabic words and CV syllables are frequent. Although vocabulary and pronunciation vary regionally, the logographic and alphabetic writing systems (Pinyin, Zhuyin) are shared as is the general syntax. Research on phonological acquisition of Mandarin has increased over the past decade and generally concurs with research on other languages, with differences reflecting the phonetic inventory of Mandarin and its restricted word structure. Speech assessment tools include the Phonological Test for Mandarin-Speaking Children (Jeng, 2018), Mandarin Articulation and Phonology Test (Wang et al., 2010), Putonghua Segmental Phonology Test (So & Zhou, 2000) and Mandarin Phonology Test (Zhao et al., 2015). Intervention programs utilize articulatory facilitation and speech awareness training, e.g., minimal pair comparisons, and more recently, nonlinear phonological goal-setting and intervention (e.g., Bernhardt et al., 2022; Bernhardt & Zhao, 2010).

Key words: Mandarin, Putonghua, Standard Chinese, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Zhao, J., Chung, S., Lin, C.-Y., & Bernhardt, B.M. (2025). Mandarin (Putonghua) speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Zhao, J., Chung, S., Lin, C.-Y., & Bernhardt, B.M. (2024). *Mandarin (Putonghua): Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: Mandarin (Putonghua) [Mandarin version] – Children's Speech Development
- Video: Mandarin (Putonghua) [English version] – Children's Speech Development
- PowerPoint: Mandarin (Putonghua) [Mandarin version] – Children's Speech Development (pdf)
- PowerPoint: Mandarin (Putonghua) [English version] – Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-547
Children's speech development: Māori

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Te Reo Māori is the language of the indigenous population of Aotearoa/New Zealand. There are 10 consonants, no consonant clusters, five qualitative vowels, and multiple diphthongs in the language. Te Reo Māori is written using the Latin alphabet. There are as yet no studies on children's acquisition of Māori speech sounds, nor are there any studies on Māori speaking children with speech sound disorders, childhood apraxia of speech, dysarthria, cleft lip and palate. Given the paucity of information on speech acquisition or speech sound disorders in Māori, there are no common speech assessments or interventions designed by Māori or others, for Māori children. The article briefly discusses how the needs of children with speech sound disorders are met using Māori cultural practices that emphasize learning through rote.

Key words: Māori, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Ballard, E., & Andrews, W. (2025). Māori speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Ballard, E., & Andrews, W. (2024). *Māori: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: Māori [English version] – Children's Speech Development
- PowerPoint: Māori [English version] – Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-548
Children's speech development: Norwegian

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Norwegian is spoken in Norway and in a few areas in the United States. Norwegian dialects can be grouped in four broad regional varieties: East Norwegian, West Norwegian, Central Norwegian, and North Norwegian. The dialect spoken by the majority of Norwegians, Urban East Norwegian, is characterized by 23 consonants, consonant clusters with up to three elements word initially and four elements word finally, 19 vowels, three diphthongs and two lexical tones. Studies of children's acquisition of Norwegian show that vowels are acquired before consonants; among them the high front rounded vowels are acquired last. Fricatives and liquids are the latest consonants acquired. Children speaking Norwegian start producing consonant clusters around the age of two, some children still have problems with consonant clusters at four. In atypical speech, researchers have focused on children with cleft lip and palate, speech sound disorders, cri du chat syndrome and children with hearing loss. Common speech assessments include Norsk fonemtest and Svante-N, and interventions include Metaphon, POPT (Psycholinguistich Orientierte Phonologische Therapie), and Praxis.

Key words: Norwegian, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Kristoffersen, K. E., Garmann, N. G., & Simonsen, H. G. (2025). Norwegian speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Kristoffersen, K. E., Garmann, N. G., & Simonsen, H. G. (2023). *Norwegian: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: Norwegian [English version] – Children's Speech Development
- PowerPoint: Norwegian [English version] – Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-549
Children's speech development: Persian

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Mina FOTUHI, Iran University of Medical Sciences, Tehran, Iran (mi.fotouhi@uswr.ac.ir)
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Persian (also called Farsi) is mainly spoken in Iran, Afghanistan, Tajikistan and in other countries such as Bahrain and the United Arab Emirates and has many local and social varieties. Persian, as an intonational language is characterized by having 23 consonants and six vowels. Consonant clusters only occur in syllable final. Persian is written from right to left using the Arabic script. The few studies of children's speech acquisition in Persian indicate that Persian speech sounds emerge before 3;0, and children are still mastering the sounds until 6;0. Although there are several speech assessments designed specifically for Persian-speaking children, there are currently no interventions, so Persian speech-language pathologists use those widely used in other languages. Researchers have focused on children with speech sound disorders, childhood apraxia of speech, dysarthria, and cleft lip and palate.

Key words: Persian, Farsi, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Zarifian, T., Shooshtaryzadeh, F., Blake, H. L., Fotuhi, M., Kazemi, Y., & Modarresi, Y. (2025). Persian speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Zarifian, T., Shooshtaryzadeh, F., Blake, H. L., Fotuhi, M., Kazemi, Y., & Modarresi, Y. (2024). *Persian: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: Persian [Persian version] – Children's Speech Development
- Video: Persian [English version] – Children's Speech Development
- PowerPoint: Persian [Persian version] – Children's Speech Development (pdf)
- PowerPoint: Persian [English version] – Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-550
Children's speech development: Polish

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Polish is characterized by 33 consonants, 6 vowels, and an abundance of consonant clusters in all word positions. Tones are not used to differentiate word meanings. The writing system is largely phonemic – Polish uses the Latin alphabet with a set of diacritics and diagraphs. There are several studies of children's acquisition of Polish that generally reflect cross-linguistic trends in the acquisition of phonology. Early-developing sounds include plosives /p, b, t, d, k, g/, fricatives /f, v, ɕ, ʑ, x/, affricates /t͡ɕ, d͡ʑ/, nasals /m, n, ɲ/, lateral /l/ and semi-vowels /w, j/. Next, the dentalized sibilants /s, z, t͡s, d͡z/ are acquired; then /ʂ, ʐ, t͡ʂ, d͡ʐ/ and the rhotic /r/ take the longest to be mastered. Researchers have focused on children with typical development as well as children with ankyloglossia (tongue tie), cleft palate, hearing disorders, and occlusion deficits. Common speech assessments include Test Powtarzania Pseudosłów (TPP) and interventions include Strategiczna metoda usprawniania realizacji fonemów (SMURF).

Key words: Polish, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Zydorowicz, P., & Czaplewska, E. (2025). Polish speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Zydorowicz, P., & Czaplewska, E. (2024). *Polish: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: Polish [Polish version] – Children's Speech Development
- Video: Polish [English version] – Children's Speech Development
- PowerPoint: Polish [Polish version] – Children's Speech Development (pdf)
- PowerPoint: Polish [English version] – Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
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- SDG 17: Partnerships to Achieve the Goals

ECV2024-551
Children's speech development: Portuguese (Brazilian)

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Brazilian Portuguese is spoken across several countries, including Brazil, French Guyana, Paraguay, Suriname, Uruguay, and Colombia. It comprises multiple dialects such as baiano, caipira, carioca, florianopolitano or manezinho da ilha, fluminense, gaúcho, mineiro, nordestino central, nortista, paulistano, recifense, serra amazônica, and sulista. Brazilian Portuguese contains 19 consonants, 15 consonant clusters, seven vowels, 26 oral diphthongs and triphthongs, and an alphabetic writing system with letter-sound correspondence. Several studies have examined speech sound acquisition and mastery in Brazilian Portuguese-speaking children. While most of these studies involve children with speech sound disorders, especially phonological disorders, recent research has been focused on motor speech disorders, especially childhood apraxia of speech. There are many speech assessment tools in these populations that are used to evaluate speech sound disorders. The interventions used in these populations include modified cycles, phonological contrasts (minimal opposition, maximum opposition/empty set, or multiple opposition pairs), complexity-based, metaphonological, and stimulability approaches.

Key words: Brazil, Brazilian Portuguese, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Ceron, M. I., Gubiani, M. B. & Keske-Soares, M. (2025). Portuguese (Brazilian) speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation - forthcoming

- Ceron, M. I., Gubiani, M. B. & Keske-Soares, M. (2024). *Portuguese (Brazilian): Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- PowerPoint: Portuguese (Brazilian) [Portuguese version] – Children's Speech Development (pdf)
- PowerPoint: Portuguese (Brazilian) [English version] – Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-552
Children's speech development: Portuguese (European)

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European Portuguese is spoken in Portugal, one of the eight countries where Portuguese is the official language. Several dialects have been described for European Portuguese. Standard European Portuguese has 19 consonants (with a larger inventory of phones), 14 vowels, and four glides. Word stress is regularly associated with a word-final trochaic foot; intonation is used for sentence meaning assignment. Portuguese is written from left to right using the Modern Latin Alphabet. Several studies on Portuguese children's phonological acquisition demonstrate universal tendencies in the acquisition of segments, syllables, and prosody. Portuguese researchers have studied children with typical and atypical language profiles. Common speech assessments include Teste Fonético-Fonológico – Avaliação da Linguagem Pré-Escolar, Teste de Avaliação Verbal and Crosslinguistic Child Phonology – Português Europeu. Interventions include auditory discrimination, minimal pairs, phonological awareness, traditional articulation therapy, and parent-based work.

Key words European Portuguese, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Freitas, M. J., Lousada, M. & Ramalho, A. M. (2025). Portuguese (European) speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Freitas, M. J., Lousada, M. & Ramalho, A. M. (2024). *Portuguese (European): Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: Portuguese (European) [Portuguese version] – Children's Speech Development
- Video: Portuguese (European) [English version]– Children's Speech Development
- PowerPoint: Portuguese (European) [Portuguese version] – Children's Speech Development (pdf)
- PowerPoint: Portuguese (European) [English version] – Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
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- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-553
Children's speech development: Samoan

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Samoan is spoken in Samoa, American Samoa, and the diaspora communities in the United States, Australia and New Zealand. The language is characterized by having two stylistic registers (formal and colloquial) that have differences across all aspects of the language. The phonological differences between the two registers impact on the number of consonants in the phonemic inventory; 13 in the formal and 10 in the colloquial. In addition to the consonants Samoan has five qualitative vowels (articulated in long and short forms), multiple vowel clusters, and no consonant clusters. Samoan is written in the Latin alphabet. To date, there is only one study that gives an overview of children's acquisition of Samoan speech sounds. This study describes the phonetic inventory and phonological processes for 4-year-old Samoan speakers in a bilingual context. There are no studies on Samoan-speaking children with speech sound disorders, childhood apraxia of speech, dysarthria, or cleft lip and palate.

Key words: Samoan, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Ballard, E., & Toaetolu-Fautua, I. (2025). Samoan speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Ballard, E., & Toaetolu-Fautua, I. (2024). *Samoan: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: Samoan [English version] – Children's Speech Development
- PowerPoint: Samoan [English version] – Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
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- SDG 17: Partnerships to Achieve the Goals

ECV2024-554
Children's speech development: Sesotho

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Sesotho is spoken in Lesotho and adjacent parts of South Africa. It is characterized by CV syllable structure, 9 short vowels (including mid vowel harmony raising), an extensive consonant system with a 3-way voicing distinction (voiced, voiceless, voiceless aspirated), a rich inventory of fricatives and affricates, a palatal-alveolar click, and syllabic nasals and liquids. It also has two tones (High and (default) Low), as well as an extensive grammatical tone system, including tone sandhi effects. There are two orthographies (developed by different missionaries), one used in Lesotho, and the other used in South Africa. There are only a few studies of children's acquisition of Sesotho – mostly by Demuth and colleagues, examining aspects of both phonology and morphosyntax. In general, most segments are acquired by around 3 years, though there has been little detailed research on some of the phonological processes, and little clinical research regarding disorders.

Key words: Sesotho, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Demuth, K. Matlosa, L., & Qhala, T. (2025). Sesotho speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation - forthcoming

- Demuth, K. Matlosa, L., & Qhala, T. (forthcoming). *Sesotho: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-555
Children's speech development: Setswana

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Setswana is spoken in South Africa, Botswana, and some parts of Namibia and Zimbabwe. There are several varieties of Setswana, including Sengwato, Setlhaping, and Sekwena. Setswana is characterized by 28 consonants, and 7 vowels. Tone is semantically significant in Setswana and distinguishes meaning of phonetically identical words. Setswana is written from left to right using the Modern Latin Alphabet (Roman script). There are few studies that describe typical speech development in children acquiring Setswana, including both segmental and suprasegmental phonology. The majority of Setswana consonants are acquired by 2;6–2;11 years, and the ones missing from the inventories of 2-year-old children are mastered at 3;0–3;5 years. At 2;6–2;11 years, Setswana vowels have been acquired and lexical tone is used accurately. While knowledge on speech sound disorders in Setswana is limited, preliminary data suggests that the prevalence rate of SSDs in children acquiring Setswana is 4.9%.

Key words: Setswana, Sekwena, Setlhaping, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Mahura, O., Pascoe, M., & Brookes, H. (2025). Setswana speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation - forthcoming

- Mahura, O., Pascoe, M., & Brookes, H. (forthcoming). *Setswana: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-556
Children's speech development: Slovak

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Slovak is spoken in Slovakia and has three main dialects (western, middle, and eastern Slovak). Slovak is characterized by 29 consonants, many combinations of consonant clusters, 11 vowels, four diphthongs, and a transparent writing system based on Latin script. There are many studies of children's acquisition of Slovak. Researchers have focused on children with speech sound disorders, cleft lip and palate, late talkers, and children with developmental language disorders. Common speech assessments and analyses involve evaluating intelligibility, articulation, phonetic repertoires, phonological processes and awareness, and calculation of the percentage of consonants and vowels correct (PCC and PVC). Common interventions include articulation and phonological therapies and naturalistic early stimulation of sound acquisition.

Key words: Slovak, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Buntová, D. & Oravkinová Z. (2025). Slovak speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Buntová, D. & Oravkinová Z. (2024). *Slovak: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: Slovak [Slovak version] – Children's Speech Development
- Video: Slovak [English version] – Children's Speech Development
- PowerPoint: Slovak [Slovak version] – Children's Speech Development (pdf)
- PowerPoint: Slovak [English version] – Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-557
Children's speech development: Slovenian

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Slovenian is spoken in Slovenia and countries with Slovenian minorities, such as Austria, Italy, Hungary, Croatia, and in communities of emigrantsin Canada, Italy, Germany, France, Argentina. There are approximately 50 dialects in 8 subgroups in Slovenian. Slovenian is characterized by 20 consonants: six plosives, two nasals, seven fricatives, one rhotic, one lateral, one glide and two affricates and their allophones, and eight vowels. Consonant clusters in every position of the word are more typical than diphthongs are. Words may have from one up to six syllables or more. Word stress is not predictable, and there are many stress patterns, which may differ across dialects. The writing system is alphabetic with transparent orthography. While there have been few studies of Slovenian children's language acquisition researchers have focused on children with speech sound disorders. Speech assessments for Slovenian-speaking children include the Test of Articulation and oral movements evaluation, and interventions include direct speech production interventions, metaphonological interventions and nonspeech oral motor interventions.

Key words: Slovenian, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Ozbič, M., & Kogovšek, D. (2025). Slovenian speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation - forthcoming

- Ozbič, M., & Kogovšek, D. (forthcoming). *Slovenian: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-558
Children's speech development: Spanish (Andalusian)

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Andalusian Spanish (eastern/western) is spoken in southern Spain. There are 17 (19) consonants (plus onset and heterosyllabic clusters), 5 vowels and 14 diphthongs. Codas are optional. Dentoalveolar fricatives and liquids vary across speakers. Written Spanish has a relatively shallow orthography. Phonological acquisition studies of Andalusian Spanish have investigated typical development, general speech sound disorders, and those with associated conditions (e.g., cleft lip and palate, cochlear implants, and cognitive delay). Results generally accord with studies of other languages, although with dialectal effects: Phonological assessments include Phonological Evaluation of Child Speech (FON) and the Test of Phonological Awareness (PECO). Intrevention programs include the Program for Phonological Development (PRODEFON).

Key words: Spanish (Andalusian), multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Ávila C., Muñoz J. & Bernhardt B.M. (2025). Spanish (Andalusian) speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Ávila C., Muñoz J. & Bernhardt B.M. (2024). Spanish (Andalusian)*: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: Spanish (Andalusian) [Spanish version] – Children's Speech Development
- Video: Spanish (Andalusian) [English version] – Children's Speech Development
- PowerPoint: Spanish (Andalusian) [Spanish version] – Children's Speech Development (pdf)
- PowerPoint: Spanish (Andalusian) [English version] – Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-559
Children's speech development: Spanish (Castilian)

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Spanish (Castilian) is spoken in central and northern regions of Spain including areas where other languages are also official (Galicia, Basque Country, Catalonia, Valencia, and Balearic Islands). There are many varieties, namely Western, Eastern, Northern, and Southern Castilian, and Castilian in bilingual areas. It consists of 19 consonants, 5 vowels, 14 diphthongs, 3 triphthongs, and 13 consonant clusters (tautosyllabic). The writing system shows orthographic transparency. There are several studies of children's typical acquisition of Spanish (Castilian) that indicate early acquisition of vowels, nasals, and plosives, and later acquisition of the remaining consonants, consonant clusters, and diphthongs. Researchers have focused on children with speech sound disorders, childhood apraxia of speech, dysarthria, cleft lip and palate, genetic syndromes, hearing loss, and cochlear implant. Common speech assessments include: Registro Fonológico Inducido, Prueba de Lenguaje Oral Navarra (PLON), Evaluación Fonológica del Habla Infantil, and Análisis del Retraso del Habla (A-RE-HA). Interventions include speech processing, phonological processes, minimal pairs and auditory discrimination, oral motor exercises, and MetaVox.

Key words: Spanish, Castilian, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Diez-Itza, E., & Vergara, P. (2025). Spanish (Castilian) speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation - forthcoming

- Diez-Itza, E., & Vergara, P. (forthcoming). *Spanish (Castilian): Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-560
Children's speech development: Spanish (Chilean)

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This chapter brings together studies related to the speech of children whose primary language is Chilean Spanish. Chilean Spanish is spoken from Arica in the north of Chile to Punta Arenas in the south. There are no dialects. It has 22 phonemes: 17 consonants, five vowels, and diphthongs (triphthongs are rare), and word-initial consonant clusters. The writing system has orthographic transparency. Studies of children's typical acquisition of Chilean Spanish are oriented toward phonemic acquisition and phonetic-phonological modifications. Children with speech sound disorders have been studied. There are a range of common speech assessments including: Test para Evaluar los Procesos de Simplificación Fonológica (TEPROSIF-R) and Test de Articulación a la Repetición (TAR). Interventions have been developed for children with speech sound disorders and cleft palate.

Key words: Spanish (Chilean), multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Herrera, D. P., Vergara, P., León, H., & Soto-Barba, J. (2025). Spanish (Chilean) speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation - forthcoming

- Herrera, D. P., Vergara, P., León, H., & Soto-Barba, J. (forthcoming). *Spanish (Chilean): Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
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ECV2024-561
Children's speech development: Spanish (Mexican)

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Spanish is spoken in the Iberian Peninsula (Spain) and Latin America (except Brazil), with a considerable dialectal and sociolinguistic variation. Spanish is characterised by five vowels, several diphthongs, 24 consonants, consonant clusters, and a complex syllabic structure with various consonant clusters. In this study, we describe the main research undertaken on Mexican Spanish acquisition, mainly focussing on consonants and consonant clusters, using different methodological approaches (from descriptive studies from cross-sectional or longitudinal corpora, as in CHILDES). Few studies have focused on children with speech sound disorders (SSD) who speak Mexican Spanish. Researchers have focused on children with SSD, cleft lip and palate compensatory articulation, and SSD associated with other language disorders. Common speech analyses include the percent of correct consonants and comparison with the age of acquisition milestones. Interventions focus on traditional articulation therapy, phonetic and/or phonological intervention, and/or the complexity-based approach.

Key words: Spanish, Mexican, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Chávez-Peón, M. E., & Auza, A. (2025). Spanish (Mexican) speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation - forthcoming

- Chávez-Peón, M. E., & Auza, A. (2024). Spanish (Mexican)*: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- PowerPoint: Spanish (Mexican) [English version] – Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-562
Children's speech development: Spanish (Peruvian)

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Peruvian Spanish is spoken in Peru and there are five dialects: the Andean highlands, Lima/central coast, northern coast, southern coast/southeast of the Andes, and the Amazonian lowlands (Lipski, 2017). Peruvian Spanish is characterized by 25 consonants, 12 consonant clusters, 5 vowels, 13 diphthongs, and uses the Latin Alphabet (Roman script) for the writing system. There are few studies on children's speech acquisition in Peru. One study focused on the speech acquisition of children 3-6 years of age (Susaníbar Chavez et al., 2013). The findings from this study supported universals in speech sound development in that nasals and stops develop before the flap or trill. There are few journal articles on children with speech sound disorders in Peru; however, there are many theses. Theses from university students have focused on the evaluation of psychometric properties for assessments and have measured the efficacy of speech intervention programs.

Key words: Spanish, Peruvian, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Sommer, C., Cáceres Nano, E., Flores, T., & Delgado Maldonado, D. (2025). Spanish (Peruvian) speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation - forthcoming

- Sommer, C., Cáceres Nano, E., Flores, T., & Delgado Maldonado, D. (2024). *Spanish (Peruvian): Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: Spanish (Peruvian) [Spanish version] – Children's Speech Development
- Video: Spanish (Peruvian) [English version] – Children's Speech Development
- PowerPoint: Spanish (Peruvian) [Spanish version] – Children's Speech Development (pdf)
- Spanish (Peruvian) [English version] – Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-563
Children's speech development: Swedish

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Swedish is spoken in Sweden and eastern Finland and there are three major dialects, namely South Swedish, Finland Swedish, and Central Swedish. Swedish is characterized by 18 consonants, a fairly large number of consonant clusters occurring both word-initially and word finally, nine distinctive vowel qualities which contrast for length in stressed syllables, and two phonologically distinctive tonal configurations. The standard script of Swedish is the Latin script plus three additional letters. Studies of children's acquisition of Swedish demonstrate that most typically developing children master the phonological components by the age of five. Researchers have focused on children with speech sound disorders and cleft lip and palate. Common speech assessments include Nya Fonemtestet, LINUS and The Swedish Intelligibility in Context Scale. Intervention includes auditory discrimination, minimal pairs (including both receptive and expressive training), phonological awareness, and articulatory training.

Key words: Swedish, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Strömbergsson, S., & Lundeborg Hammarström, I. (2025). Swedish speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation - forthcoming

- Strömbergsson, S., & Lundeborg Hammarström, I. (2024). *Swedish: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video Swedish [Swedish version] – Children's Speech Development
- Video Swedish [English version] – Children's Speech Development
- PowerPoint: Swedish [Swedish version] – Children's Speech Development (pdf)
- PowerPoint: Swedish [English version] – Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

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- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-564
Children's speech development: Tagalog/Filipino

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Tagalog is one the major languages of the Philippines and is spoken in more than 40 other countries. Its dialects include Manila, Bataan, Batangas, Bulacan, Lubang, Marinduque, Puray, Tanay-Paete, and Tayabas. Tagalog is characterized by 16 consonants, 5 vowels, and 8 diphthongs. Eight additional letters and consonant clusters occur in loan words from Spanish and English. Contemporary Tagalog uses a writing system using Roman alphabets which has twenty letters. Tagalog does not use tones to differentiate meaning. There are currently only few studies of children's acquisition of Tagalog, and they demonstrate that Tagalog-speaking children have acquired most of the phonemes and exhibit few phonological errors when they reach four years of age. Researchers have focused on typically developing children and children with cleft lip and palate. Most common speech assessments include non-standardized picture articulation tests and connected speech sampling; and there is currently no intervention which is specific for Tagalog.

Key words: Tagalog, Filipino, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Bondoc, I. P., Garcia, R., & Garcia, F. D. S. (2025). Tagalog speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Bondoc, I. P., Garcia, R., & Garcia, F. D. S. (2024). Tagalog*: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: Tagalog [English version] – Children's Speech Development
- PowerPoint: Tagalog [English version] – Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
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- SDG 17: Partnerships to Achieve the Goals

ECV2024-565
Children's speech development: Tamil

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Tamil and its dialects are spoken predominantly in South Asian countries including India, Sri Lanka, Singapore, Malaysia, and in an extensive diaspora around the world. Tamil is characterized by 26 consonants, 11 vowels, and 2 diphthongs, and uses the Tamil-Brahmi script. Research on acquisition of Tamil has mainly focused on consonant acquisition, phonological patterns, and word structure among typically developing children. Majority of Tamil consonants are acquired by three years of age with children producing increasingly complex word structures with age. Development of speech sound patterns have been analyzed in Tamil speaking children with suspected speech sound disorders and those associated with cleft lip and palate, and cerebral palsy. SLPs commonly use single-word lists for assessing speech sounds in Tamil, with the Test of Articulation in Tamil (Usha, 1986) being the most common. Intervention approaches commonly used in practice draw from motor- and linguistic-based approaches developed for English-speaking children.

Key words: Tamil, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Venkatesh, L., & Hariharan, S. V. (2025). Tamil speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation - forthcoming

- Venkatesh, L., & Hariharan, S. V. (forthcoming). *Tamil: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-566
Children's speech development: Thai

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The Thai language, the official spoken and literary language of Thailand, is part of the Sino-Tibetan language family of Southeast Asia. Thai uses a phonemic alphabet system with 44 consonant forms, 32 vowel symbols, and four lexical tones. Thai grammar is simple, with no articles, tenses, or gender; however, the phonetic aspect of the language is complex. There are normative data on typical children ages 0 to 7 years of age. The age of acquisition for Thai speech sounds is mastered by 5-6 years of age, except for some complicated sounds. Most speech-language pathologists develop their own tests to assess children's speech and there are two versions of the Thai Speech and Language Test (TSLT). Common intervention modalities identified include individual or group treatment sessions and parent involvement. Articulation therapy, phonological therapy, and speech intelligibility interventions have been used with some modifications to fit individual cases. Academic training programs and the national professional organization are committed to quality clinical service to further research, standardized assessment tools, and improve intervention protocols.

Key words: Thai, Central Thai dialect, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Maroonroge, S. Lorwatanapongsa, P., & Prathanee, B. (2025). Thai speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Maroonroge, S. Lorwatanapongsa, P., & Prathanee, B. (2024). *Thai: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: Thai [Thai version] – Children's Speech Development
- Video: Thai [English version] – Children's Speech Development
- PowerPoint: Thai [Thai version] – Children's Speech Development (pdf)
- PowerPoint: Thai [English version] – Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

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- SDG 4: Quality Education
- SDG 10: Reduced Inequality
- SDG 17: Partnerships to Achieve the Goals

ECV2024-567
Children's speech development: Tok Pisin

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Tok Pisin is spoken in Papua New Guinea (PNG) as the largest lingua franca. There are regional and sociolinguistic variations, but all are mutually comprehensible. Tok Pisin is characterized by a simplified English-based phonology of five core vowels and 17 core consonant phonemes. The orthography is English and is both transparent and consistent. The suprasegmental features and phonotactic rules are derived from PNG vernacular languages and German. The one study of children's acquisition of Tok Pisin consonants shows a core phonology with wide variation arising from the impact of local languages and emerging phonemes used in borrowed words. Tok Pisin research has previously focused on descriptive linguistics. There are no training courses or establishments for speech-language pathology (SLP) in PNG. Current speech assessments and therapies are mainly informal and unpublished.

Key words: Tok Pisin, Papua New Guinea, PNG highlands creole, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Boer, J.M., Claessen, M., Williams, C. (2025). Tok Pisin speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Boer, J.M., Claessen, M., Williams, C. (2024). *Tok Pisin: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: Tok Pisin [Tok Pisin version] – Children's Speech Development
- Video: Tok Pisin [English version] – Children's Speech Development
- PowerPoint: Tok Pisin [Tok Pisin version] – Children's Speech Development (pdf)
- PowerPoint: Tok Pisin [English version] – Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

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- SDG 17: Partnerships to Achieve the Goals

ECV2024-568
Children's speech development: Turkish

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Turkish is spoken in Republic of Türkiye (previously known as Turkey), Northern Cyprus, and as a minority language in many countries within the former borders of the Ottoman Empire. There are many dialects spread over a very large geography, which can be grouped into three, namely Eastern, Northeast, and Western Turkish. Turkish is characterized by 21 consonants and eight vowels. There are a number of studies of children's acquisition of Turkish that demonstrate Turkish children acquire certain phonemes and affixes quite early presumably due to being an agglutinative language. There are few studies focusing on speech sound disorders, childhood apraxia of speech, cleft lip and palate, and hearing loss. Common speech assessments include the Türkçe Sesletim-Sesbilgisi Testi-SST [Turkish Articulation and Phonology Test] and the Ankara Artikülasyon Testi-AAT [Ankara Articulation Test] in addition to using family interview, other standardized tests, and instrumental assessments (nasopharyngoscopy, nasometer, and acoustic measurements). Interventions include traditional articulation therapy, auditory discrimination, minimal pairs, maximal opposition, multiple oppositions, core vocabulary, stimulability treatment, Rapid Syllable Transition Training (ReST) and Prompts for Restructuring Oral Muscular Phonetic Targets (PROMPT).

Key words: Turkish, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Zengin-Bolatkale, H., Ünal Logacev, Ö., & Topbaş, S. (2025). Turkish speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Zengin-Bolatkale, H., Ünal Logacev, Ö., & Topbaş, S. (2024). *Turkish: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: Turkish [Turkish version] – Children's Speech Development
- Video: Turkish [English version] – Children's Speech Development
- PowerPoint: Turkish [Turkish version] – Children's Speech Development (pdf)
- PowerPoint: Turkish [English version] – Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
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ECV2024-569
Children's speech development: Urdu

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Urdu is the national language of Pakistan and is spoken by people in a number of countries including India, Afghanistan, Australia, Bahrain, Bangladesh, Canada, Denmark, Germany, Iran, Iraq, Oman, Qatar, Saudi Arabia, the UK, and the USA. There are several dialects of Urdu, namely Bhojpuri, Bihari, Deccani, Dhakaiya, Haryanvi, and Hyderabadi. Urdu is characterized by 38 consonants, 15 consonant clusters, 23 vowels, and 15 diphthongs, and uses a Perso-Arabic script. Research on children's acquisition of Urdu is emerging and mainly focused on consonant acquisition. The acquisition of Urdu consonants continues beyond age seven. A few researchers have examined speech sound disorders in children with hearing loss and found that they produced more errors on velars and fricatives as compared to other consonants. SLPs generally use self-developed or self-translated assessments. Several tests including the Test of Articulation and Phonology of Urdu (TAAPU; Noveen et al., 2017a), Urdu Articulation Screening Test (UAST; Muzaffar et al., 2019), and the Urdu wordlist (Shabbir & Zahra., 2016) have been developed. Intervention approaches commonly used in practice include traditional articulation therapy and the minimal pair approach.

Key words: Urdu, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Ambreen, S. & To, C. K. S. (2025). Urdu speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation

- Ambreen, S. & To, C. K. S. (2024). *Urdu: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- Video: Urdu [English version] – Children's Speech Development
- PowerPoint: Urdu [English version] – Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
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- SDG 17: Partnerships to Achieve the Goals

ECV2024-570
Children's speech development: Vietnamese

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Vietnamese is spoken in Vietnam and there are four main Vietnamese dialects, including Standard, Northern, Central and Southern Vietnamese. Standard Vietnamese is characterized by 23 consonants, 11 single-vowels, three diphthongs and six tones. Vietnamese uses the Modern Latin Alphabet and orthographical diacritics for six vowels and tone markings. There are seven studies of children's acquisition of Vietnamese that demonstrate age of acquisition, percentage of phonemes correct and phonological processes; three studies that describe speech characteristics of children with speech sound disorders, and two studies that describe speech accuracy and speech intervention for children after surgery to repair cleft lip and palate. Speech assessment includes Vietnamese Speech Assessment, and Vietnamese versions of the Intelligibility in Context Scale (ICS-VN), and the Speech Participation and Activity Assessment of Children. Phonological and articulation interventions have been examined in research and implemented in clinical settings.

Key words: Vietnamese, Standard Vietnamese, Northern Vietnamese, Central Vietnamese, Southern Vietnamese, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Phạm, B., Margetson, K., McLeod, S., Tran, V., & Verdon, S. (2025). Vietnamese speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation - forthcoming

- Phạm, B., Margetson, K., McLeod, S., Tran, V., & Verdon, S. (forthcoming). *Vietnamese: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
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ECV2024-571
Children's speech development: Warlpiri

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Warlpiri is an Indigenous Australian language spoken by over 3,000 people in four communities in the Tanami Desert area of the Northern Territory of Australia: Lajamanu, Nyirrpi, Willowra, and Yuendumu. There are also speakers in the major towns and cities in the Northern Territory, and in other parts of Australia. There are several varieties, and communolects, or community dialects, are also present. In one community a new language has emerged, known as Light Warlpiri. There are several studies of children's acquisition of Warlpiri that demonstrate the input to children in a child-directed speech register, the phonology of children's early productions, and children's morphosyntactic development. Researchers have focused on typically-developing children. There is a single speech assessment tool dedicated to Warlpiri, a MacArthur-Bates Communicative Development Inventory app called the Little Kids Word List <https://mywordlist.app/app/little-kids-word-list> .

Key words: Warlpiri, Light Warlpiri, Australia, Indigenous, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- O'Shannessy, C., Nelson, A. N., Bartlett, J. N., & Davis, V. P. (2025). Warlpiri speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation - forthcoming

- O'Shannessy, C., Nelson, A. N., Bartlett, J. N., & Davis, V. P. (forthcoming). *Warlpiri: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
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- SDG 10: Reduced Inequality
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ECV2024-572
Children's speech development: Welsh

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Welsh is spoken in Wales and in a small number of areas within Chubut Province, Argentina. There are many socially and geographically defined varieties, with particularly salient differences between northern and southern pronunciations. Welsh is characterized by an extensive system of consonants, onset and coda clusters, vowels, and diphthongs. Studies of children's acquisition of Welsh to date have a particular focus on consonants, consonant clusters, and early word forms. Research on atypical development is restricted to a small number of case studies. No formal assessments and interventions are available that have been specifically developed for Welsh.

Key words: Welsh, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Mayr, M., Lewis, R., & Wren, Y. (2025). Welsh speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation - forthcoming

- Mayr, M., Lewis, R., & Wren, Y. (2024). Welsh*: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages
- PowerPoint: Welsh [English version] – Children's Speech Development (pdf)

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
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- SDG 17: Partnerships to Achieve the Goals

ECV2024-573
Children's speech development: Xhosa

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isiXhosa is spoken in South Africa and there are several varieties including Mpondo, Hlubi, and Bhaca. isiXhosa is characterized by five vowels and 52 consonants. Sixteen clicks are derived from three basic clicks (dental, alveolar and palatal) using a non-pulmonic airstream. isiXhosa is a tonal language with high and low surface tones used to differentiate between words. The orthography is transparent and consistent, but its conjunctive characteristics and complex graphemes make spelling a challenge. Acquisition of consonants (including clicks) and vowels is largely completed by the age of 4;0. Only a few consonants are mastered later and they almost certainly include some clicks and affricates (although this is debated). To date researchers have focused on describing the typical development of children acquiring isiXhosa and there is minimal research on children with speech sound disorders in this language.

Key words: isiXhosa, click, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Mahura, O., Pascoe, M., & Ludidi, B. P. (2025). Xhosa speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation - forthcoming

- Mahura, O., Pascoe, M., & Ludidi, B. P. (forthcoming). *Xhosa: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages

This presentation relates to the following United Nations Sustainable Development Goals:

- SDG 3: Good Health and Well-being
- SDG 4: Quality Education
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ECV2024-574
Children's speech development: Zapotec

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Zapotec is spoken in Oaxaca, Mexico, and every town has its own variety/dialect; this chapter is based on the dialect of Valley Zapotec spoken in San Lucas Quiaviní. Valley Zapotec is characterized by relatively short word length (1-3 syllables), a consonant system with cross-linguistically common place and manner distinctions but with a fortis-lenis distinction (where lenis consonants are short and can be highly variable), a large number of root-initial consonant clusters (most of which violate the Sonority Sequencing Principle) and a few root-final and intervocalic clusters, a six-vowel system complicated by four contrastive voice qualities (which can be combined within a single vowel), both stress (predictable) and tone (H, L, rising, falling), and a rarely-used writing system adapted from Spanish and guided by phonetics. There are few studies of children's acquisition of Valley Zapotec that address phonology. Researchers have focused on typically developing children. There are no tools for speech assessments or interventions.

Key words: Valley Zapotec, San Lucas Quiaviní, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Stemberger, J. P., & Chávez-Peón, M. E. (2025). Zapotec speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation - forthcoming

- Stemberger, J. P., & Chávez-Peón, M. E. (forthcoming). *Zapotec: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages

This presentation relates to the following United Nations Sustainable Development Goals:

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- SDG 17: Partnerships to Achieve the Goals

ECV2024-575
Children's speech development: Zulu

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IsiZulu is one of South Africa's officially recognized languages. It is a Bantu language belonging to the Nguni family of languages. IsiZulu is characterized by 59 consonant phonemes (including clicks and prenasalized consonants) and seven vowels. It is a tonal language, with tone used to distinguish meaning between words that are phonetically identical. IsiZulu uses the 26 letters of the Modern Latin Alphabet (Roman script). There are limited data on typical acquisition of isiZulu speech. Most consonant phonemes are acquired as early as 2;6 years by isiZulu-speaking children, with prenasalized consonants and clicks being later acquired phonemes. As with most languages, all vowels were acquired by 2;6 years, and are likely acquired much earlier. Additionally, isiZulu words consisting of up to six syllables are produced accurately by 3;0–4;0 years.

Key words: isiZulu, Sekwena, multilingual, communication, speech, language, children's development, interdisciplinary, international communities, assessment, intervention

Book chapter

- Mahura, O., & Pascoe, M. (2025). Zulu speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Language overview presentation - forthcoming

- Mahura, O., & Pascoe, M. (forthcoming). Zulu*: Multilingual children's speech development*. Charles Sturt University, Australia. https://www.csu.edu.au/research/multilingual-speech/languages

This presentation relates to the following United Nations Sustainable Development Goals:

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