


Thanks for coming along! This webinar will begin shortly.

The webinar will be recorded so it is accessible to others after the live session.

Marleen will not be able to see the chat during the presentation. Questions put into the chat will be combined by our team members into "umbrella" questions at the end of the session.

Please be aware of spammers or scammers in the chat box. This event is free and we will not ask for any personal information in the chat box.

Early Literacy development in preschoolers and young children on the spectrum - what do we know and why does it matter?
A/Prof Marleen Westerveld, Griffith Institute for Educational Research



Early Literacy development in preschoolers and young children on the spectrum - what do we know and why does it matter?


A/Prof Marleen Westerveld, PhD
Griffith Institute for Educational Research
School of Allied Health Sciences
Griffith University

Webinar: 19 Nov 2020




This talk aims to increase your knowledge about (emergent) literacy in young children on the autism spectrum

- I will talk about our research and draw on my extensive experience as a certified practising speech pathologist.
- I have not experienced literacy difficulties first hand, nor am I on the spectrum.
- I recommend you seek advice from your child's teacher and/or local speech pathologist if you have any specific concerns about your child's oral language and/or literacy development.



Team members & Acknowledgements

Griffith University:

- Dr Jessica Paynter
- A/Prof David Trembath
- Prof Jacqueline Roberts
- Dr Kate Simpson
- Rachelle Wicks
- Dr Matthew Stainer

AEIOU Foundation:

- Dr Madonna Tucker

ASPECT:

- Dr Debra Costley

Sydney Children's Hospital at Westmead:

- Dr Antoinette Hodge

Research assistants:

- Megan Neveill
- Carla O'Brien
- Kim Leslie
- Marcia Williamsz
- Kate O'Leary
- Rhylee Sulek



CRC volunteer:

- Janette Over

We acknowledge the financial support of the Cooperative Research Centre for Living with Autism, established and supported under the Australian Government's Cooperative Research Centres Program. We acknowledge the funding received from the Queensland Registration Board, awarded by Speech Pathology Australia

Overview of the Presentation

- Literacy and emergent literacy
- What have we found?
- Where to from here: recommendations and future directions
- Questions?

An overview of literacy

- Why literacy?
- What is emergent literacy?
- How do we measure emergent literacy skills?




Why literacy?



- Literacy is a basic human right.
- Literacy helps us connect with the world around us.
- Literacy is a cornerstone of academic success.
- Literacy proficiency is linked to better academic achievement, socio-emotional wellbeing, academic outcomes, and vocational attainment.



Why literacy in autism?



- About 50% of children with autism struggle to read.
- Some children with autism do not learn to read at all.
- A majority of children with autism show difficulties in reading comprehension
- Improved knowledge of the development of early literacy skills in children with autism will help guide (early) intervention practices



Parents

Literacy is an essential life skill: 'If he has a basic understanding of not only learning to read but what is reading then he can do anything he wants to later, whether it is schooling or just managing in the real world'.

Literacy provides an alternative method of communication: 'because if they can't verbally communicate they can do it a different way'

Literacy is an important form of communication: 'after talking it's the most important form of communication'



Literacy helps the child to understand the world around him. 'It's a way for them to learn how things work and apply it if they get into that situation'.

How does literacy develop?

Children are typically in the *emergent literacy stage* from birth to about 5 years.

During this period, many children will:

- Show a keen interest in print
- Pretend to read books
- Play with writing utensils, write 'stories'
- Enjoy sharing books
- Participate in sound games, rhyming words, alliteration
- Use literacy themes in their play



Emergent literacy

- Many milestones are achieved before children start school
- A bidirectional relationship: *literacy* and *language* development
- Children are active participants in the literacy development process
- Children's literacy development is guided by adults but children may acquire these skills incidentally
- Early literacy achievements tend to follow a developmental sequence



Theory: links between spoken and written language "The Simple View of Reading"

Reading comprehension (RC) =

word recognition (WR) x language comprehension (LC)

- We need both WR and LC for RC to occur
- Changing contributions over time

Emergent literacy skills can thus be regarded as:
Code or print related skills and meaningful language related skills



Emergent Literacy Skills

1. We need **print-related skills** to decode the written word
2. We need **strong oral language skills** to understand the written word.

Print-related skills	Oral language related skills
Alphabet Knowledge	Vocabulary knowledge
Phonological Awareness	Grammatical ability
Print concepts	Discourse skills / story telling and comprehension
Emergent name writing	

A closer look at emergent literacy – alphabet knowledge

- Recognise or name the letters
- Knowing the sound/s the letter/s make



Lower Case Alphabet Recognition

a	g	m	i
b	r	l	f
h	w	t	q
j	c	o	v
p	x	d	u
o	y	n	z
k	e		

Phonological Awareness (PA)

"The conscious awareness of sounds in words"

- Typically develops from larger to smaller linguistic units (syllables, onset-rime, phonemes).
- PA can be seen in children as young as three years of age.
- We are particularly interested in phoneme-level awareness, for example, *'what is the first sound in 'dog'?*



Print concepts

1. Book conventions – how books 'work'

How to hold the book; There is a beginning and an ending; There are pages etc.



2. Print conventions

Read from front to back, page by page, top to bottom etc.

3. Print form

words are separated by spaces, difference between words, letters, numbers, point to individual words, words are made up of letters etc.

Writing - emergent name writing



What does that say?

Oral language skills

- Includes vocabulary, grammar, and story retell/comprehension skills.
- Vocabulary is a powerful predictor, but good vocabulary alone is not enough!
- Story retelling skills in particular have been shown to be predictive of future academic performance.



"Assessment of a child's oral language skills in a narrative context allows insight into the child's ability to use language in a decontextualised manner, a skill that is vital for accessing the curriculum and participating in classroom interactions"

Vocabulary

- How many words does the child know?
- How many different words does the child use?
- What types of words does the child know and/or use?
- How do we measure this?

Oral narrative (fictional stories)

- Importance of evaluating young children's story retelling skills, both comprehension and production.
- To determine:
 - the child's ability to answer questions (factual / inferential)
 - the quality of the retell (is it a good story – story structure),
 - and the child's ability to use correct grammar and appropriate vocabulary.

The home literacy environment is important

- Frequency of shared book reading is positively related to expressive vocabulary in 4-year-old children with typical development
- Frequency of book reading is also associated with higher levels of print knowledge in typically developing children
- Quality of shared book reading is also important
- However, relationship for children with language impairment less clear and there is little research on the home literacy environments of children with autism

What did we find?

- Print-related skills
- Meaning-related skills
- Overall conclusions

Some of our findings

BRIEF REPORT

No Differences in Code-Related Emergent Literacy Skills in Well-Matched 4-Year-Old Children With and Without ASD

Markelen F. Westerveld

RESEARCH ARTICLE

The Emergent Literacy Skills of Preschool Children with Autism Spectrum Disorder

W. A. Westerveld, J. E. Payne, B. Treadwell, A. A. Roberts, M. A. R. R. R.

RESEARCH ARTICLE

The Oral Narrative Comprehension and Production Abilities of Verbal Preschoolers on the Autism Spectrum

Markelen F. Westerveld and Jacqueline M. A. Roberts

RESEARCH ARTICLE

Parent perceptions of literacy learning of their young children on the autism spectrum in their first year of schooling

Kathryn A. O'Leary, Ben Flackley, Jessica Payne, Markelen F. Westerveld

RESEARCH ARTICLE

Preschool Predictors of Reading Ability in the First Year of Schooling in Children With ASD

Markelen F. Westerveld, Jessica Payne, Kathryn O'Leary, and David Trembath

The participants in our studies

Print related skills	Meaning related skills
Phonological awareness	Vocabulary knowledge
Letter name and sound knowledge	Grammatical ability
Print concepts	story telling and comprehension
Early writing	

- Adapted the tasks:
 - duration
 - language complexity

Home book reading observation

Speak in short sentences
Can participate in preschool type activities
Prior to school-entry

Home literacy questionnaire

What did we want to know?

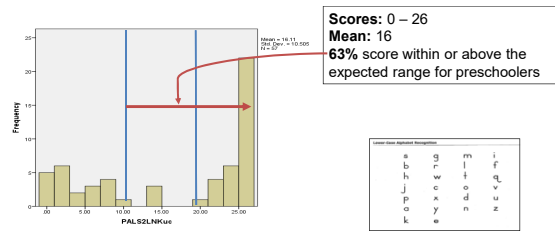
How do pre-schoolers on the spectrum perform on print-related and meaning-related emergent literacy skills?

Is their performance prior to school predictive of their performance one year later?

What may explain some of the difficulties these preschoolers have in literacy related skills?



Results: Letter name knowledge



Print-related skills

Letter name knowledge: 63% of the children scored within/above the expected range (range 0 – 26)

Letter sound knowledge: 52% of children scored within/above the expected range.

Phonological awareness: 75% of children scored within/above the expected range (beginning sound awareness)

Print concepts: 40% of children scored within/above the expected range

Name writing: 58% scored within/above the expected range.



Meaning - related skills

Vocabulary: 54% of the children scored within the expected range for their age (*Peabody Picture Vocabulary Test*).

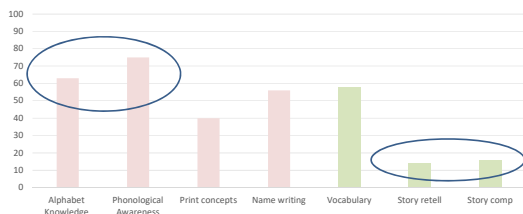
Story retelling: 14% scored within expected range for 4-year-old children (> 25th percentile).

Story comprehension: 16% scored within expected range for 4-year-old children (>25th %)

Overall our tasks were doable!



Relative strengths and challenges



Strengths in alphabet knowledge

As a group the children showed relative strengths in print-related skills of PA and Letter knowledge – consistent with previous findings.

Hypotheses:

Strong alphabet knowledge in children on the spectrum may be related to children's focus on detail (Weak Central Coherence)

Or – may be linked to a fascination with letters (restricted and / or repetitive behaviours).

Or – may be linked to **Enhanced Perceptual Functioning**

And/or - may (thus) be encouraged in the home environment through shared book reading



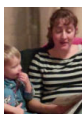
What did the parents tell us?

Home literacy questionnaire (compared to parents of children with Down syndrome):

No group differences in parents' reported *frequency* of teaching their child letter names.

Parents of preschoolers on the spectrum reported higher frequency of *pointing out signs/words in the environment*

Parents reported higher frequency of naming letters and better knowledge of letter names in their preschoolers on the spectrum.



When we observed parents sharing books

- No evidence of a focus on print when sharing unfamiliar story books
- Children's visual attention / verbal engagement during shared book reading was not related to their letter name knowledge.



Using eye-track technology



Preschoolers on the spectrum looked **more frequently at print**; overall, the **duration** was the same.

<https://youtu.be/fgQDzKzISNo>

Children on the spectrum did **not look at the pictures** as often or as long, with significant group differences.

Prompting was successful in **changing** where the preschoolers looked (both print and pictures).



Other explanations for emergent literacy profiles ?

- Autism traits?
- Language ability?
- Cognition?



Actually – our research suggests no group differences in **alphabet knowledge** when controlling for language ability, IQ, gender, SES.



What about alphabet knowledge as a predictor?

Letter sound knowledge at preschool is a **strong predictor** of single word reading approx. one year later. IQ was also a predictor.

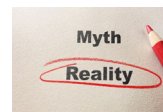
Children who show strong word reading skills in their first year of schooling, performed better on **all emergent literacy tasks** in preschool: vocabulary, letter sound knowledge, phonological awareness, name writing ..

So early strengths in emergent literacy skills matter!



Conclusions: print-related skills

- Letter knowledge is **only one aspect** of emergent literacy development and may not reflect literacy learning more broadly.
- ☹ up to 40% of preschool children **did not meet expectations** on print-related emergent literacy skills.
- We may be able to identify children on the spectrum who are at risk of early reading difficulties – even before they start school!
- At F/U (Prep): About half of the children demonstrated early challenges in word recognition →→



Conclusions: meaning-related skills

Most preschoolers struggled retelling a story:

- Limited inclusion of critical events
- Descriptive or action sequence, indicating a lack of understanding of goal-directed behaviour.



Many children had difficulty with **story comprehension**:

- **particularly answering inferential questions** (Why did Ana get bored / scared)



Potential explanations for narrative difficulties

- Cognitive skills - for some children the task was too hard. Note - we only considered children who had a language age of 3 years.
- Oral language ability more broadly?
- However, most children found retelling a story more challenging than expected based on their language/communication scores. Theory of Mind?
- Focus on detail (WCC) rather than the bigger picture.



Why does it matter?

- Reading comprehension is our ultimate aim of learning to read.
- To fully comprehend what we read we need more than word recognition skills:
 - Solid oral language skills (words, sentences, discourse)
 - Background knowledge and inferencing skills
- Difficulties with story comprehension pre-school is significantly related with reading comprehension once children start school ($r = .744$).



Where to from here?

- Shared book reading
- Collaboration
- Recommendations



Shared Book Reading is an amazing context for literacy learning

Shared book reading intervention for preschoolers on the autism spectrum, specifically targeting meaning-related emergent literacy skills in a context that is part of most families' routine.

Places heavy demands on social interaction, engagement, attention

You Tube <https://www.youtube.com/watch?v=Z-Zuh0y8f98>



Brief overview

- An 8 week intervention program, using a coaching model
- Commercially available books with a clear story structure
- Focus on:
 - Words words words (vocabulary building)
 - Story structure (narrative retell and comprehension)
 - **FUN (engagement)**



Take home messages from our SBR study

- **social validity** – Parents told us it was a positive way of engaging their children
- **effectiveness** - we saw significant increase in time spent sharing the book - coupled with higher verbal engagement in the children, higher use of parent book-reading behaviours
- **But** – establishing a book reading routine took time for some families. New book each week ☺

The importance of SBR as a routine activity



Autism friendly story times

Developed a professional development module for librarians to:

- Increase knowledge of autism
- ABC of behaviours
- Emergent literacy skills
- Adapting story time sessions
- Environmental audit

Parents told us the reasons for not attending related to the environment and their child's level of interest



Following the training:

I include more narrative stories. I blue-tack song words to the whiteboard in the sequence that we will do them to give people an outline of how the session will run.

It was fantastic training that should be made available to all adults who read with children

I have become more aware of needs and difficulties of children on the autism spectrum. I feel more confident in assisting parents of children on the autism spectrum with information and book choices.

It was a really positive experience and I felt like I really did learn a lot of new information at that workshop.



Easing transition into primary school and setting children up for reading success

- What are the parents' perceptions around literacy-learning for their child on the spectrum?



Parental expertise of their child's learning and factors that impact their learning:

Learning difficulties: 'my child needs time to process information' – may lead to falling below academic expectations.

Comorbidities: Including ADHD, language difficulties seen as huge barriers to learning at school

Behaviours of concern: 'impact literacy learning; willingness to do literacy homework, abilities shown at school vs home'.



Parent strategies:

Encouraging child understanding: 'use of visual cues, simplifying instructions, and lots of repetition'.

Literacy Learning Activities : A real need to work on literacy-related activities at home. Frequent use of commercially available literacy programs and computer programs.

Encouraging engagement in literacy learning 'apply to use anything on YouTube or whatever helps'. 'Anything that is of interest and 'fun'



Parental concerns:

Teacher knowledge:
'Teachers ... don't actually understand that there's a lot more that goes into our kids than being just able to read. It's their environments, it's their sensory, their cognitive stuff, its all of that.'

Resources and support-related :
'The school are trying to do the best they can within the boundaries and the resources they've got, it's still not enough and it pushes back a lot of responsibility at home. I don't have education training, I know my child and he knows me'

Communication:
'School hasn't been informing us much of what's going on at school. We really don't know what happens there.'

Delivery of curriculum: *'an absence of flexibility in how they present the curriculum', 'not conducive to the way their brains work.'*






What do teachers tell us?

Heterogeneity amongst students on the spectrum.


Challenges with parents' level of understanding and acceptance of child's needs

Resources, teacher knowledge and skills

Recommendations

- Communication is key
- Combine our expertise – parents/educators/speech pathologists
- Involve the speech pathologist
- For now, let's base our assessments and interventions on current evidence with children with language difficulties / reading challenges – and adapt to suit for children on the spectrum
- Using evidence-based approaches
 (AFIRM: <https://afirm.fpg.unc.edu/afirm-modules>)





Final words

- Many, but not all, children on the autism spectrum will demonstrate reading difficulties, so **Assess, don't Assume**
- Early identification is critical – don't wait until a child experiences difficulties – motivation/enjoyment/self-esteem
- Remember no one-size-fits-all.

You Tube

https://www.youtube.com/watch?v=4qcDksXtVE&ab_channel=AutismCRC

Contact Details

Marleen Westerveld, PhD
 School of Allied Health Sciences
 Griffith Institute for Educational Research
 Griffith University, Gold Coast Campus, QLD

For [links](#) to our work, YouTube videos, and other websites, visit www.marleenwesterveld.com

The more that you read, the more things you will know. The more that you learn, the more places you'll go.
 -Dr. Seuss

