Early childhood literacy and the role of the speech-language pathologist

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Overview of the presentation

- Emergent literacy – an overview
- Who is considered at risk?
- Prevention
- Preventive intervention
- Intervention
- Special populations
- An integrated approach
- Summary & Questions
Emergent literacy skills

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

**During this period, most 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

Source: Justice, 2006
Emergent literacy theory

- Literacy development begins at birth, and many milestones are achieved before children start school.
- There is a bidirectional relationship between literacy- and language development.
- Children are active participants in the literacy development process.
- Children acquire much of their literacy knowledge incidentally.
- Children’s literacy development is guided by adults.
- Early literacy achievements tend to follow a developmental sequence.

Source: Justice, 2006
Emergent literacy skills

A solid language foundation and early print-related skills are needed for successful literacy acquisition.

<table>
<thead>
<tr>
<th>Print related skills</th>
<th>Oral language related skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phonological awareness</td>
<td>Vocabulary knowledge</td>
</tr>
<tr>
<td>Letter knowledge</td>
<td>Grammatical ability</td>
</tr>
<tr>
<td>Print concepts</td>
<td>Discourse skills / story telling and comprehension</td>
</tr>
</tbody>
</table>

They can be subdivided into 4 domains: 1) Print knowledge, 2) Phonological Awareness, 3) Writing, and 4) Oral Language, and are influenced by the home literacy environment.
Theory – links between oral and written language

The simple view of reading

Reading comprehension = word recognition x language comprehension

• For RC to occur none can be equal to zero
• Unique contributions of WR and LC to RC
• Changing contributions over time

(Gough & Tunmer, 1986)
Unpacking the constructs – Print concepts

1. **Book conventions – how books ‘work’**
   - How to hold the book, book handling
   - Books have authors and illustrators
   - 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
Unpacking the constructs – 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.
- PA is not the same as phonics!

Test your knowledge:
1) Syllables
2) Sounds
3) Second sound
4) Last sound
Carroll et al. 2012

Diagram showing box plots of words with phonemes correctly identified for different groups: SLP, RTLit, RTLB, Teacher, ECE, T. Aide, 3YRBT, 1YRBT. The vertical axis represents the number of phonemes, with a range from 0 to 10.
Further findings and implications

- No change in performance in ECE PA skills over 9 week baseline period
- When providing a ‘training’ session for early childhood professionals, teacher aides, teachers etc, one cannot assume competency in PA.
- Carroll et al. (submitted) investigated the effects of PA training (90 mins) to PA + coaching training (compared to a non-training control group):
  » Teachers in PA and PA+C groups improved in PA compared to control.
  » Children in the PA+C centres improved post teachers’ PA training.
Assessment of phonological awareness

- Informal procedures: e.g., Gail Gillon’s preschool PA assessment probes: [http://www.education.canterbury.ac.nz/people/gillon/resources.shtml](http://www.education.canterbury.ac.nz/people/gillon/resources.shtml)
- More formal procedures: e.g., [https://dibels.uoregon.edu/market/assessment/material/](https://dibels.uoregon.edu/market/assessment/material/)
Unpacking the constructs - writing

Includes early name writing

McNeill, Westerveld, van Bysterveldt, Boyd, & Gillon, 2013
See Cabell et al. (2009) for scoring procedures
Unpacking the constructs - writing

Study of 92 four-year-old children attending NZ kindergarten (McNeill et al., 2013):

- More than 80% of the children used recognisable letters with placeholders to write their name
- There were strong correlations between name writing, writing home practice, and letter name knowledge.

These results highlight the importance of children’s home literacy environment and hence involving parents in emergent literacy training.
<table>
<thead>
<tr>
<th>Word</th>
<th>Target Elements</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>feet</td>
<td>f, ee, t (9)</td>
<td>feee</td>
</tr>
<tr>
<td>Back</td>
<td>b, a, ck (9)</td>
<td>Back</td>
</tr>
<tr>
<td>Mail</td>
<td>M, ai, l (9)</td>
<td>Mail</td>
</tr>
<tr>
<td>Side</td>
<td>S, iCe, d (9)</td>
<td>Side</td>
</tr>
<tr>
<td>Junk</td>
<td>J, u, n, k (12)</td>
<td>Juc</td>
</tr>
<tr>
<td>Chin</td>
<td>Ch, i, n (9)</td>
<td>Chin</td>
</tr>
<tr>
<td>Dress</td>
<td>D, r, c, ss (12)</td>
<td>Dress</td>
</tr>
<tr>
<td>Lamp</td>
<td>L, a, m, p (12)</td>
<td>Lamp</td>
</tr>
<tr>
<td>Step</td>
<td>S, t, c, p (12)</td>
<td>Step</td>
</tr>
<tr>
<td>Road</td>
<td>R, oa, d (9)</td>
<td>Road</td>
</tr>
<tr>
<td>Peked</td>
<td>P, ee, k, ed (12)</td>
<td>Peked</td>
</tr>
<tr>
<td>Picking</td>
<td>P, I, ck, ing (12)</td>
<td>Picking</td>
</tr>
</tbody>
</table>

**Invented spelling development**

Using the Spelling Sensitivity Scoring (Masterson & Apel, 2010)
Each element is scored:
3 – convention
2 – plausible
1 – incorrect, implausible
0 – not represented

*McNeill et al., 2013*
Early name writing was significantly associated with invented spelling performance in dictation and journal writing assessment contexts in the first year of schooling.

SSS seemed a sensitive assessment tool (Masterson & Apel, 2010)
findings and Implications

- Preschool children with identified language impairment lag behind their typical peers in early name writing ability (Cabell et al., 2009)
- Early name writing abilities in children with LI are associated with alphabet knowledge and print concepts.
- Speech pathologists and educators are encouraged to address print-related skills of children with LI in their clinical interventions (Cabell et al., 2009).

These results highlight the importance of evaluating and facilitating children’s early writing skills.
Oral language

- Includes grammar, vocabulary, and narrative skills.
- Vocabulary is a powerful predictor, but good vocabulary alone is not enough!
- Oral narrative skills in particular have been shown to be predictive of future academic performance (e.g., Bishop & Adams, 1990).

- “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” (Westerveld et al., 2012)
Oral narrative proficiency

- Text structure knowledge
- World knowledge
- Vocabulary knowledge
- Grammatical knowledge
- "Mental Model"
- Comprehension of (written) narrative
- Narrative production, e.g., story re/tell
- Working memory
- Meta-cognitive skills
Oral narrative

- Importance of evaluating young children’s oral narrative skills, both comprehension and production.

- To determine:
  - the child’s ability to answer questions,
  - the quality of the retell (is it a good story – taps story structure),
  - and the child’s ability to use correct grammar and appropriate vocabulary.
Oral Narrative Assessment

Different procedures available, including:

- the NAP (Justice et al., 2010) – Narrative Assessment Profile
- the Profile of Oral Narrative Ability (Westerveld et al., 2010; 2012) – using the *Ana Gets Lost* story (contact Marleen for a copy),
- the Bus story (Renfrew, 1995),
- the TNL (Gillam & Pearson, 2004),
- the ENNI (Schneider et al., 2002) – available for free from: [http://www.rehabresearch.ualberta.ca/enni/](http://www.rehabresearch.ualberta.ca/enni/)
Home literacy environment

MEASURING:

- Parents’ belief and knowledge
- Home activities such as shared book reading
- Home activities other than book reading
- Home environmental context
- Oral language and vocabulary supports

(reference for parent questionnaire: Boudreau, 2005)
Quality of book reading

- Child must understand at least 90% of the vocabulary.
- Naturally instruct the child in print functions.
- Children learn best when adults are responsive and engage the child, encouraging the child to actively participate and take turns.
Who is considered at risk?

- Children from low socio-economic backgrounds
- Children from culturally and linguistically diverse backgrounds
- Children at risk of language-learning difficulties
- (Preschool-age) children with identified speech and/or language impairment

Let’s look at prevention, preventive intervention, and intervention approaches and results.
Prevention

**Community programs** – targeting: a) the wider public, and/or b) ‘at risk’ groups

Aimed at promoting emergent literacy

Examples include:
- Read and Grow (NGCCC)
- Hanen programs ([www.hanen.org](http://www.hanen.org))

**Based on the premise that shared reading:**
Positively impacts vocab development, listening comprehension, and print conventions
Helps to promote PA and exposes children to conventional reading.

Professional Development Seminar Series
Prevention – some interesting results

- **Let’s Read Research**: Intensity is important – higher and broader (than just 4 visits + an info pack). Seems to be most beneficial to low-literacy families.

- **Frequency and quality of adult book reading** promote children’s emergent literacy (e.g., Reese & Cox, 1999). Provides the child with exposure to more complex language and to story structure.

- **Frequency of shared reading** related to expressive vocabulary but not to expressive narrative ability (Senechal et al., 2008).

- Impact of the frequency of shared reading on children’s grammar comprehension is mediated by the **parents’ level of literacy** (Senechal et al., 2008).

- **Use of print-focused read alouds** by preschool teachers impacts children’s early literacy comprehension 2 years later (Justice et al., 2010; 2012)
Preventive / primary intervention (Tier I)

Often implemented in early childhood centres, prep year or year 1. Mainly targeting schools/children from low socio-economic areas. Aimed at developing and strengthening students’ foundation skills in language and literacy – “Identifying effective proactive solutions to shift children’s odds toward healthier outcomes in the area of reading” (Justice, 2006, p. 21).

Examples in Queensland;
- Read it Again-FoundationQ! (Justice et al., 2010)
- PrepSTART
- ....

Agents of intervention:
Teachers, teacher aides, SLPs
Explicit, systematic, and purposeful

Explicit:
Make it clear what you expect the child to learn. E.g.,

- *We will look at some letters together. Let’s look at S and P. They are both in the word SPOT.*
- *Oh look at this word: mess. What does that mean? Have you ever made a mess?*

Systematic:
Follow a sequence, e.g., PA, or alphabet knowledge. (note re rhyme or excessive attention).

Purposeful:
Link the activity to reading with comprehension (not just to decoding – remember the Simple View of Reading).
Results re Tier 1 interventions

Early classroom-based interventions are generally effective in enhancing students’ emergent literacy and oral language skills, both immediately after intervention and longer term.

However, group size, school attendance, teacher characteristics, maternal reading beliefs, and initial language performance need to be taken into consideration.

Little research into the effectiveness of such interventions has focused on Australian schools. Despite the fact Australia is one of the most linguistically and culturally diverse countries in the world.

One in five primary-school aged students is considered at risk (AEDI) across one or more childhood development areas.
Australian data

Dodd and colleagues (McIntosh et al., 2007; O’Connor et al., 2009):
10 weeks of intervention targeting PA and oral language abilities of socially disadvantaged preschoolers.

Results showed an improvement in PA and oral language compared to a no-intervention class.

However, these gains did not lead to improved reading ability two years later.

PrepSTART – pilot project (Lennox & Westerveld, in press)

Compared to a no-intervention control group, students showed accelerated gains in PA, but not in oral language related skills. Did not catch up to their more advanced peers during prep.

More local research is needed

Read it Again – FoundationQ! – any results?

Professional Development Seminar Series
Feedback from teachers / teacher aides

Using a focus group methodology (Garvis et al, 2014)

Teachers liked the structure of the program, found it easy to use. Teacher aides were initially a little resistant and struggled to implement the program – importance of team approach and training.

Teachers and teacher aides preferred certain books over others. TA’s felt some were too difficult.

The importance of frequent feedback about implementation.

Perceived barriers included: interruptions to the normal class day, difficulty in getting relief teachers to continue the program, communication across classes – peer support really important
Bilingual children ...

There are few available instruments to assess emergent literacy skills across languages.

Three options:

- Assess the child in English, regardless of the home language
- Cross-linguistic assessment: assess in both languages and compare performance
- Some efforts have been put into composite scoring of bilingual children’s performance.

We know that:

PA learned in one language should transfer to the other language.
Cross-linguistic transfer of mental representations of stories, i.e., story structure knowledge.

Home literacy environment is important! (see Westerveld, 2013)
Intervention – secondary or tertiary for children with identified speech and/or language impairment

Children with a history of language impairment during the preschool years are at increased risk of persistent literacy difficulties. Therefore – we need to ensure these children develop their emergent literacy skills during the preschool period.

Children whose phonological disorder has resolved by the age of 5 have a better prognosis than children who show impaired phonology at that age – BUT…
Modified critical age hypothesis

Resolve impairment + Strong PA = Literacy success

Outcome depends on severity and persistence of the speech problem and whether or not language problems are also involved: Critical Age Hypothesis (Bird et al., 1995)

(Nathan et al, 2004)
Points to remember

Letter knowledge, PA, and speech production can be improved simultaneously (e.g., Gillon, 2000; 2002; 2005):

Children who received integrated PA intervention showed better speech production and reading performance two years later than a group of children who received traditional SLP intervention.

Gillon (2005): phoneme awareness can be facilitated in children with speech impairment as young as 3 years of age – associated with successful early reading and spelling development.
Points to remember

Letter knowledge, PA, and speech production can be improved simultaneously

Similar results were found for children with Childhood Apraxia of Speech (CAS) – (e.g., McNeill et al., 2009)

And for children with Down syndrome (van Bysterveldt et al., 2010)

Rupa: Age 7;6 in the emergent literacy stage. No /s/ blends WI, recognises S and P letters, emerging phoneme identity knowledge.

http://www.education.canterbury.ac.nz/people/gillon/resources.shtml
Points to remember

- **Book-reading is an excellent context for intervention** – this needs to occur across contexts and with different people.

- This clip shows a mother and her preschool-age child with Down syndrome – this was part of the intervention study conducted by van Bysterveldt et al. (2010) – parents received training to implement the home programme.

- Integrate goals: vocab building, print concepts, story structure, grammar, story comprehension, speech production, PA.
Other populations

- **Children with Autism Spectrum Disorders**

Often these children will show adequate word reading ability, but impaired reading comprehension performance (Nation, 2006).

Think back to the Simple View of Reading – promote early language comprehension skills through shared book reading (Lanter et al., 2008)
An integrated approach

- **People:** parents, teachers, teacher aide/s, SLP
- Speech, language, and literacy
- **Modalities:** Hear, Say, Read, and Write
- **Curriculum Links:** functional targets, social inclusion, academic inclusion, expectations across curriculum areas.
In summary:

The role of the SLP includes:

- General promotion of (emergent) literacy (SPA)
- Education and training
- Direct involvement in Tier I intervention – modeling & feedback
- Direct intervention (or preventive intervention) for children with identified speech and/or language disorders.

In partnership with families, educators, children, other (health) professionals
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