

## **PHONOLOGICAL EARLY READING INTERVENTION (PERI) or (Pre-ERIK strategies)**

Acknowledgement: All content for this PL activity has been taken from Dr Munro's resource: Assessing & Teaching Phonological Knowledge – John Munro (1998), available online through ACER, \$139.00 <http://shop.acer.edu.au/acer-shop/group/ATP/2>

### **PROGRAM OUTLINE**

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  - Pre-literate developments
  - Early letter-sound links
  - Alternative word recognition strategies
  - Recognising letter-groups and words
5. Assessing phonological knowledge (using a Developmental Sequence)
  - Assessing & Teaching Phonological Knowledge – Dr J Munro (1998)
6. Teaching phonological knowledge (Enrol in the CEOM PERI PL activity through CEVN.)

### **THE PROGRAM**

#### **1. What is Phonological Knowledge?**

Phonological Knowledge is the foundation of our understanding of how spoken words translate into written words. Phonological Knowledge is what we know about the sound patterns in our words.

It includes being able to learn how to say an unfamiliar word (prosy, baft), being aware that words can share the same sound ('house', 'crowd', 'bough'), that sound blends ('sl', 'ed') can be integrated with a word to create a longer sound sequence, and that pronouncing 'conservation' and 'conversation' involves a manipulation (switching) of sounds.

We use our phonological knowledge in a range of ways.

We use it when we learn how to say new words – "on-o-mat-o-poe-ia".

We use it to help us remember information for a short time - recalling a phone number (we say it over and over to ourselves, rather than trying to remember what it looked like).

We use it when we read - segmenting, blending, manipulating sounds, using analogy, and ...

We use it when we spell. When we need to spell an unfamiliar word we may segment it into smaller sound groups before we start to write it.

## 2. Definitions

In order to clarify exactly what it is we are going to be teaching, we must distinguish between various terms.

Term	Definition	Example
phonological knowledge	Our knowledge of the sound properties (or phonology) of our language.	How many sounds are there in these words? to            two            too
phonemic knowledge	Our knowledge of individual speech sounds or phonemes. <i>(Having the knowledge, not just an awareness.)</i> Phoneme – a single sound. In English they are typically represented by a group of more than one letter, called a digraph.	What sound is made by “g”? What sound is more likely to follow “g”? “r” or “b”? Phoneme - “a,” “t”, “sh”, “ee”, “ai”
phonemic awareness	Our awareness of individual sounds. <i>(A step on from this is phonemic knowledge.)</i>	How well we can pick the difference between “m” and “n”, “map” and “nap” You are <u>aware</u> there is a difference.
phonetic knowledge	Our knowledge about saying single sounds with other sounds.	The sound “p” is affected by the other sounds around it. Say “pin” now say “spin” notice how the “p” is affected by the “s”. It sounds more like “sbin” than “spin”.
phonic knowledge	Our knowledge of letter-sound patterns; linking sounds with letters. The sound knowledge provides the coat-hanger for the orthographic knowledge.	sound knowledge (sounds)        - “shun” orthographic knowledge (letters)    - tion
phonological recoding	The process by which we convert a written string of letters to match a sequence of sounds.	to            two            too 2            2            2 <i>Phonological recoding = number of sounds</i>
orthographic knowledge	Patterns of letters used in written English to write words (symbols). Letter-cluster knowledge without the intervening sound knowledge.	Graphemes – the written individual letter <span style="border: 1px solid black; padding: 2px;">tion</span> Digraph – two successive letters whose phonetic value is a single sound (a phoneme) - ai, sh, ee, ch...

### 3. The Phonological Knowledge Developmental Sequence

Phonological abilities are acquired over several years, from the preschool years to the 3<sup>rd</sup> and 4<sup>th</sup> grade levels (Lenchner, Gerber & Routh 1990 cited in Munro 1998). Some abilities are prerequisites to reading acquisition, others are learnt in parallel with gains in reading.

*The following developmental sequence is derived from the investigations by Lenchner et al. (1990), Maclean et al. (1998), Vandervelden and Siegal (1995) and Yopp (1998), cited in Munro 1998.*

You need to be familiar with this developmental sequence if you intend to assess, diagnose or implement teaching in the area of phonological knowledge.

#### 1. The development of phonological knowledge begins when children learn to communicate orally.

Children learn to:

- imitate words and learn how to pronounce them (eg. ambulance, criminal);
- remember how words are pronounced;
- remember brief statements (eg. 'Want more cake', 'My dolly in car')
- remember the names of familiar objects, in both familiar and unfamiliar situations; and
- remember the sequence of names, eg. Jack and Bethany (neighbours).

*It should be noted that word pronunciation difficulties are not due exclusively to the development of phonological knowledge (eg. articulation difficulties...).*

#### 2. Recognising sound patterns in words.

*This may be referred to as implicit or 'unconscious' awareness of sound properties.*

Children learn to:

- recognise rhyming patterns and produce rhyming words (mat, cat, fat, ...);
- recognise alliteration\* ("She sells sea shells by the sea shore...");
- learn songs and nursery rhymes; and
- detect syllables in words by clapping (tapping...) for each syllable, and imitate a simple syllabic pattern (bow-wow, moo-moo, baa-baa).

\* alliteration: repeating the same consonant sound at the beginning of two or more words in close succession. Eg. "**P**eter **P**iper **p**icked a **p**eck of **p**ickled **p**eppers ..."

#### 3. Recognising syllables and individual sounds in words.

*This may be referred to as explicit 'conscious' awareness of the sound properties.*

Children learn to:

- segment words into onset and rime, breaking words at the vowel (eg. segment 'flip' into 'fl' + 'ip', or 'cat' into 'c' + 'at');
- strip the first sound away from words (eg. segment 'stop' into 's-top');
- isolate a sound within a word (eg. What is the last sound in cat?);
- verbalise the syllables in 2, 3 and 4-syllable words (eg. segment 'adventure' into 'ad-venture');
- segment 1-syllable words into individual phonemes (eg. segment 'cat' into 'c-a-t' and 'stop' into 's-t-o-p').

#### 4. Combining or blending sounds into words.

Children learn to:

- integrate onsets and rimes (eg. 'st' and 'op' into 'stop');
- integrate a string of sounds into a 1-syllable word (eg. 'c-l-o-t' to 'clot').

5. Manipulating syllables in words (eg. “Which one sounds like a word you know - ‘pre / tend’ or ‘pr / etend’?”)
6. Manipulating individual sound patterns in more complex ways.  
Children learn to:
  - match sounds in two or more words (eg. Do ‘pat’ and ‘pin’ start with the same sound? Do ‘pig’ and ‘got’ end with the same sound?);
  - delete sounds from a word (eg. ‘What word is left if you take “m” out of “camp”?’);
  - recognise a specified sound (eg. ‘What sound do you hear in “plane” but not in “lane”?’);
  - substitute a consonant or vowel (eg. ‘Say “mate” but instead of “m” say “l”.’); and
  - categorise groups of sounds (eg. ‘Sort the vowels in words into long versus short vowels’.)
7. Linking sound and letter information. That is, recoding letters and strings of letters to sounds and vice versa. *This is referred to as phonological or phonic recoding.*

\* When we assess a child’s phonological and phonemic knowledge we are attempting to locate the child on this developmental sequence.

#### 4. Phonological Knowledge and learning to read

Repeatedly over the last few decades investigations have shown a relationship between children’s awareness of sound patterns in their speech and later reading and spelling ability.

In particular, children’s level of phonemic knowledge has an influence on their ability to learn to recognise written words automatically. The individual sounds and sound patterns that they can recognise in spoken words determine, in large measure, the written letter groups they can learn to recognise automatically. The maximum number of sounds that a child can process at one time provides an upper limit to the complexity of words the child can learn to read orthographically.

Phonological knowledge provides us with a foundation in three vital areas of learning.

1. It helps us to understand the sound composition of words; it allows us to:
  - a. segment a spoken word into sounds (eg. ‘bed’ into ‘b’ ‘e’ ‘d’); and
  - b. combine or blend segments into a whole word (eg. ‘sh’ ‘o’ ‘p’ into ‘shop’).
2. It helps us to retrieve the names of written words from our oral language word bank.
3. It helps us to hold ideas in our short-term memory when we read or spell.

#### Pre-literate developments

The journey children make towards learning to read words begins through early communication. Prior to learning to read, children build and store: meanings; how words and word groups are said; and how they are used. By using these words and word groups (phrases), they learn to recognise individual words in speech and begin build up a bank of words. Each word is represented by how it is said and what it means (see figure 1).

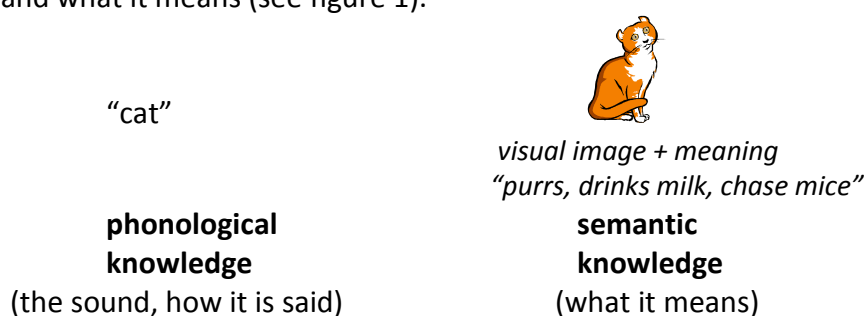


Figure 1. The sound and meaning forms of the word ‘cat’.

Difficulty learning to recognise separate words in speech may restrict building a word-meaning bank. Phonological knowledge allows children to learn how words are said. Most children do this relatively easily and with little practice. Those who have difficulty doing this may later have difficulties both in pronouncing words accurately and in recognising words. Inaccurate representations of spoken words may cause later word recognition difficulties, because the written word would not match the student's spoken form. Many disabled readers have difficulty pronouncing accurately multi-syllabic words; they may juxtapose, omit or substitute individual sounds or syllables (eg. 'crinimal' for 'criminal'). *It should be noted that word pronunciation difficulties are not due exclusively to the development of phonological knowledge.*

### Early letter-sound links

Children's increasing awareness of sound patterns within words, shown through rhyming and alliteration type activities, allows them to use a repeated sound pattern to predict words in stories that use rhyming. Their ability to segment short spoken words into smaller sound groups for example, into onset and rime (such as 'flip' into 'fl' + 'ip') leads them to an awareness of single sounds that will be used later as a base for corresponding letters and letter clusters. An awareness of individual letters, particularly upper case, begin to appear in children's attempts at writing at this stage. The 'concept of a word', 'rhyming' and 'onset-rime segmentation' are all powerful predictors of later reading ability. Not only do these gains improve word recognition but also reading comprehension.

### Alternative word recognition strategies (Beginning to read)

To read written words, children need to link written words with how they are said. To link them, that is, to match the letters and the sounds, children need to break the spoken word into individual sounds. This ability is critical in the early stages of learning to read words.

When first learning to read words, young readers use a range of different strategies (Freebody & Byrne 1988; Stuart & Coltheart 1988, cited in Munro 1998), some of which are more useful than others. These include:

- selecting and memorising distinctive visual features of words and the context in which they are used and linking these with how they hear the word said (Seymour & MacGregor, cited in Munro 1998).
- converting systematically each letter in a word to a sound and then blending the sounds.
- using part of the letter-sound information rather than sounding out the whole word, letter-by-letter (eg. Converting the first few letters of a word to sounds and using contextual information; and
- using a combination of these strategies.

Of these strategies, using distinctive visual features is least effective in the long term (Frith 1985; Freebody & Byrne 1988, cited in Munro 1998). While recoding written words into sounds is slower and demands more attention.

### Recognising letter-groups and words

As children continue to read, build up their knowledge of sound patterns in spoken words and recode systematically written words, they learn to recognise letter clusters rather than individual letters. This increases their word recognition efficiency. As an example of what is meant here, consider two children A and B reading the word 'spent' by recoding. Child A has built the 'sp' and 'ent' letter cluster units while Child B has the separate units 's' 'p' 'e' 'n' and 't'. To read 'spent', Child A needs to handle two pieces of information, while Child B needs to handle five. Child A can also recognise the clusters 'sp' and 'ent' in other words.

Readers learn these letter clusters by linking their written and sound forms (Barron 1986; Ehri 1987; Jorm et al. 1984, cited in Munro 1998). The letter clusters learnt first are those for which children already have the sound patterns (Treiman 1985, cited in Munro 1998).

Children who don't learn the sound patterns are less likely to learn the letter clusters. Phonemic segmentation span is a measure of the longest spoken words children can segment accurately into separate sounds. For any child this span provides an estimate of the longest words (particularly for regular short-vowel words that have a 1:1 letter-sound mapping) that children can learn automatically. This strategy applies orthographic knowledge and is used progressively with more complex words, it does not develop all at once. Therefore, a child may read some words automatically and others by segmentation and letter or letter-group sound recoding.

### **5. Assessing Phonological Knowledge**

The assessment profile consists of the following five major tasks that cover the span of phonological development relevant to early literacy development.

The five tasks are as follows:

**Task 1** Acquiring implicit awareness of sound patterns in words

**Task 2** Segmenting words into sounds

**Task 3** Sound Blending

**Task 4** Manipulating sounds within word

**Task 5** Phonemic recoding: bridging to written word

Once you have determined a student's level of phonological knowledge, you may decide to implement teaching activities. A set of follow-up teaching activities is provided for each of the skill areas assessed.

When you are assessing a student's phonological knowledge there are two questions you need to answer.

1. What phonological knowledge can the student show, both by investing attention and automatically?
2. What are the longest words (in sounds) to which the student can apply each phonemic awareness ability?

#### **Is the task being performed automatically?**

The more attention a student needs to put into doing any phonological knowledge task, the less the student can use his/her knowledge when learning related aspects of reading, because there are competing demands for attention.

#### **What is the extent of the student's phonological ability?**

Some students can apply phonological ability to shorter words (consisting of 3 or 4 sounds) but not to longer words. The tasks used here allow you to examine how well the student can apply each ability to words of increasing sound length.

### **ALTERNATIVE TEST**

➤ SPAT-R (Sutherland Phonological Awareness Test-Revised) – Dr R Neilsen (2005)

*This could be used for post-testing to ensure an independent measure of improved outcomes in Phonological Awareness.*

