Phonological awareness. What comes before letters and sounds: Getting children ready for phonics

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1. What is phonological awareness and how does it develop?

Phonological awareness (PA) is a crucial skill that underpins speech, vocabulary and literacy. Early syllable level stages of PA acquisition are required before children can progress to phoneme level skills (and phonics). Children who have difficulty acquiring PA skills will always have difficulty unless given help. It is never too late for children to learn PA skills. Children with good PA skills will have better vocabulary skills and learn to read more easily. Find out how to quickly assess PA skills and accurately target effective teaching activities so that children are primed for learning phonics.

1.1. Phonological awareness

According to Gillon (2004), phonological awareness is the individual's awareness of the sound or phonological structure of a spoken word.

Implicit phonological knowledge enables children to recognise words that are part of their home language, to self-correct speech errors, and distinguish between variations of spoken words. Explicit knowledge of phonological structure of words allows a child to make connections between the spoken form of a word and its written representation (Gillon, 2004). Phonological awareness is recognised as a crucial skill for learning to read alphabetic languages.

1.2. Development of phonological awareness

Most of the research that gives us information about the development of phonological awareness is related to reading disorder not development of speech, yet children develop phonological awareness skills long before they begin learning to read. The phonological deficit theory, which is the predominant etiological view on dyslexia, proposes that literacy problems originate from a cognitive deficit that is specific to the representation and processing of speech sounds (Snowling, 2001). Phonological processing deficits have been demonstrated in three broad areas (Wagner & Torgesen, 1987): phonological awareness (e.g. Fischer, Shankweiler, & Liberman, 1985; Mann &

Liberman, 1984), retrieval of phonological codes from long-term memory (phonological access to lexical storage evidenced by rapid automatized naming) (e.g. Bowers & Swanson, 1991), and verbal short-term (phonological) memory (e.g. Catts, 1991; Mann & Liberman, 1984). Anthony and Francis (2005) provide a succinct overview of the research. They state that phonological awareness is the ability most strongly related to literacy. A review of 52 controlled experimental studies (National Reading Panel 2000 report to US Congress) indicated that intensive phonological awareness instruction will have a significant effect on reading and spelling, with benefits for all children regardless of reading ability.

Anthony and Francis (2005) report a meta-analysis of cross sectional and longitudinal research on large populations of 2-8 year olds (Anthony & Lonigan, 2004) which concludes that phonological awareness is a single cognitive ability that manifests in a variety of skills; and individual differences in phonological awareness skills are stable across time and across different phonological awareness skills.

Two overlapping patterns of development are evident in the research on phonological awareness development (Anthony & Francis, 2005). Firstly, as children grow older they become increasingly sensitive to smaller and smaller units. They can detect and manipulate syllables at the same time as they can manipulate onset rimes, which they can do before they can detect or manipulate individual phonemes within syllables in word units (Carroll, Snowling, Hulme, & Stevenson, 2003). Secondly, children can detect similar and dissimilar before they can manipulate sounds in words and can blend phonological information before they can segment it (Anthony, Lonigan, Driscoll, Phillips, & Burgess, 2003). There is a degree of overlap (not completely linear or in stages) so children can refine skills they have acquired while learning new skills. This the same as other aspects of phonological development, where children are acquiring many phonological rules simultaneously, not one after the other in a linear progression. Carroll et al. (2003) suggest that syllabic phonological awareness skills arise totally from, or at least are so tightly integrated with, receptive lexical knowledge that they should be considered part of typical linguistic, rather than metalinguistic development. This strengthens the argument that syllabic skills should be well established on school entry and before phoneme level skills are introduced. They further suggest that there is an important reciprocal relationship between the growth of letter sound knowledge and phoneme awareness.

This is a crucial bit of knowledge for us if children who enter school are entered into phoneme level literacy instruction straight away. The research indicates that if they do not have good syllable level skills, they will not be able to progress with phoneme level skills. Similarly, as the child's profile is stable, if children are struggling, they will always struggle without support. Much of the development of PA, speech, vocabulary and literacy is reciprocal with two-way influence.

1.3. The impact of spoken language development

Phonological awareness develops in relation to spoken language, as evidenced by the existence of phonological awareness skills before children begin learning to read (i.e. pre-literate children). Cross linguistic studies indicate that the rate of phonological awareness development is different in different languages. For example syllable saliency e.g. children speaking Turkish, Greek and Italian (simple syllable structures, limited vowel repertoire, well marked syllable boundaries) develop syllable awareness more quickly than children who speak English or French. Pre-literate children who speak English are better at isolating singleton onsets e.g. **f**og, than pre-literate Czech speaking

children, who in turn are better at isolating initial phonemes from cluster onsets e.g. **fr**og (there are 258 cluster onsets in Czech and only 31 in English).

Phonological rules that differ from language to language also affect the rate of phonological awareness acquisition. For example Turkish speaking children are able to delete final phonemes earlier than English speaking children because Turkish phonology requires vowel harmony (with consonants) and on a morphological level Turkish has multiple suffixes that must be selected on the basis of phonetic harmony with the word root. Children who speak English, Dutch, French and German are able to segment CVC syllables into onset and rime (C-VC) before they can segment it into body and coda (CV-C) due to the greater number of words with phonological neighbourhood density at rime level (e.g. hat, fat, mat, cat) than at body level (e.g. cat, cap, can). The position of a phoneme in a word also contributes to the difficulty of the phonological awareness task e.g. the first phoneme in syllable initial consonant clusters and the final phoneme in syllable final consonant clusters are easier to identify and manipulate than the medial consonants (see Anthony & Francis, 2005).

Articulatory factors also influence the development of phonological awareness. Manner, place and voicing all interact to determine the linguistic complexity of the word and the child is affected by this. Some sounds are more salient (easy to detect or attend to) for children and therefore affect phonological awareness development (see Anthony & Francis, 2005).

1.4. The impact of speech sound disorder

The evidence from cross linguistic studies leads us to question the effect of non-typical speech and language development on phonological awareness. Children with speech sound disorder (SSD) do not all perform in the same way on tests of phonological awareness. Children who make more atypical speech sound errors perform more poorly on phonological awareness tasks than children who make more typical errors or sound distortions. For children with SSD, both age and vocabulary knowledge are significant predictors of phonological awareness skill (accounting for about 33.3 % combined, with vocabulary alone predicting 27% of the variance). However, presence of atypical sound errors (phonological errors) is the only SSD type to predict variance in phonological awareness performance (a further 6%). It is suggested that atypical sound error reflects weak phonological representations (Preston & Edwards, 2010). This would fit in with our observations of children who present with SSD in speech and language therapy clinics: Children with articulation difficulties (i.e. sound distortions) may not have any co-occurring phonological difficulties and are also likely to have better phonological awareness skills. Children with delayed phonological development (typical sound errors) are likely to perform on phonological awareness tasks in line with younger children who have a similar level of speech development. Children with disordered phonological development (atypical sound errors) are likely also to have more typical sound errors and perform in unpredictable ways on phonological awareness tasks. Furthermore, Smith, Downs, and Mogford-Bevan (1998) showed that children with SSD who had been resistant to intervention, improved significantly when phonological awareness intervention preceded more traditional (and previously unsuccessful) phonological intervention.

1.5. The impact of language disorder

Phonological processing skills are an essential part of the process of learning new words. Phonological awareness skills are required to identify the word as a single unit distinct from the

phrase or sentence it occurs in. The phonological structure of the word has to be analysed, compared to other words in the lexicon and if found to be novel, stored in the lexicon. Strong phonological representations are required in order to retrieve and correctly produce the word (see Gathercole, 2006). Children with language impairment typically experience difficulty acquiring vocabulary due to a combination of phonological processing and semantic difficulties. Of the three areas of phonological processing, phonological awareness is likely to have the most impact on word learning as it is required to perform the phonological analysis required to place the new word in the lexicon. Intervention on a phonological and semantic level are both typically used to support word learning in children with language impairment. In a well designed, controlled study, Zens, Gillon, and Moran (2009) showed that phonological awareness intervention enhanced both phonological and semantic skills in word learning, whereas semantic intervention only influenced semantic skills. The children made significant gains in learning new words only when phonological awareness intervention preceded semantic intervention, leading them to conclude that a sound basis of phonological awareness is necessary for children with language impairment to use semantic skills for efficient word learning.

A longitudinal study of French speaking children with language impairment (Zourou, Ecalle, Magnan, & Sanchez, 2010) showed that children who had received intervention to bring their phonological awareness skills to an equivalent level with age matched children with typical language development were still vulnerable to literacy difficulties. The children were unable to generalise their phonological awareness skills from oral language into the new contexts of reading and spelling. While acknowledging the interplay of other factors the tentative conclusion we can draw from this study is that children with language impairment require more robust phonological awareness skills than children with typically developing language in order to learn to read and spell.

1.6. The impact of learning to read

When children start to encounter written language it has a significant effect on phonological awareness development, particularly at phoneme level. Children learning to read alphabetic languages with transparent orthography e.g. German, Arabic, Dutch develop phoneme awareness more quickly than children learning to read non-transparent languages such as English. The visual representation of the word has an immediate impact on phonological awareness skills e.g. rhyme is harder to detect if the words are spelt differently, it is harder to count phonemes if the number of sounds does not match the number of letters. Therefore, learning to read does not have the same beneficial effect on phonological awareness development for English speaking children as it does for e.g. German speaking children. The relationship between phonological awareness and literacy acquisition is reciprocal and is strongest during the time it takes children to develop letter sound knowledge which can take 1-3 years depending upon the orthographic transparency of the language. Reading and writing also feed back into phonological awareness development (Anthony & Francis, 2005).

1.7. Conclusion

There is evidence that the ambient language in the child's environment influences the order and speed in which phonological awareness skills are acquired. This acquisition is further influenced by the child's proficiency in that language, being adversely affected by delayed and disordered development. Children with poorly developed phonological awareness skills (whether or not they

also have speech and language difficulties) are at risk for literacy difficulties, which in turn will adversely affect further phonological awareness development. They are also at risk for poor vocabulary development, which is correlated with poor phonological awareness development, suggesting yet another reciprocal relationship. Phonological awareness intervention is known to be effective and is possibly an essential foundation for other types of learning related to speech and language development prior to literacy learning e.g. to improve word learning and for speech sound intervention at a phonological level. However, children with language impairment and age appropriate phonological awareness skills have difficulty applying phonological awareness knowledge in context of literacy development, possibly indicating that learning is required beyond their age-matched peers.

All of this research leads us to the conclusion that all children would benefit from assessment of their phonological awareness skills. Furthermore, children with poor phonological awareness skills would benefit from intervention to a level where they exceed the level of competence of children at the same age as a precursor to vocabulary intervention and learning to read.

2. Assessment

The aim of the assessment process, functioning within an ethical framework, should always be transparent. We should only assess if we can do something meaningful with the outcome and we should assess everything necessary to ensure our *diagnosis* (excuse the medical terminology) is as accurate as it can be and our intervention is as effective as it can be.

2.1.Aspects of phonological awareness to be assessed

Three levels of phonological awareness are generally proposed in the literature, based on research with typically developing children with now speech and language difficulties: syllable, onset-rime and phoneme.

Syllable recognition has three principles:

1. A syllable always has a vowel sound
2. Syllable division follows stress pattern and stressed syllables start with more, rather than fewer, consonants (avoiding consonant cluster split across syllable boundary)
3. Syllable division avoids creation of illegal consonant clusters

Phoneme awareness is based on the abstract concept of phonemes (25 consonants and 16 vowels in Standard English) existing in a state that is not affected by them being blended together and that we can recognise them as separate entities.

Onset-rime recognition is based on the premise that children understand that syllables can be split in two parts consisting of the initial sound (onset) and the rest (rime). However see above regarding the influence of ambient language and body-coda vs onset-rime.

Research supports the view that sensitivity to rhyme, phonemic awareness, segmental awareness and phonological sensitivity are not distinct phonological abilities but manifestations of phonological sensitivity (Anthony & Lonigan, 2004, Carroll et al. 2003). Furthermore, rhyme detection and production (and alliteration production) do not predict phonological awareness. This in turn supports the need for assessment of syllable level skills, but not rhyme or alliteration, as part of all phonological awareness assessment. Rhyme production is possibly influenced by the size of the

child's vocabulary and their phoneme sensitivity, providing further reason not to assess rhyme. Rhyme sensitivity (but not production) may add a slight advantage to literacy acquisition along with phoneme sensitivity, but the latter is adequate to provide the child with support for reading by analogy and letter-sound correspondence (Anthony & Lonigan, 2004).

We have seen that younger children are more sensitive to larger phonological units and that phonological awareness skills are reasonably stable throughout development i.e. if you start well you continue well (Anthony & Francis, 2005; Anthony & Lonigan, 2004). Therefore it is important that appropriate assessment is used according to the developmental stage of the child.

2.2. Standardised assessments

Assessments come under several categories e.g. static vs. dynamic; standardised (see Table 2.1) vs criterion referenced; observational vs administered. Some are more suitable for children with literacy difficulties and typically developing speech and language. For children with speech and language delay or disorder the available standardised tests may not give us the information we need to plan intervention. Table 1 summarises a selection of standardised assessments. Some of these contain subtests that children with language delay find too difficult to attempt due to the linguistic structure in which the assessment item is delivered e.g. 'Which word does not rhyme?'; some carry a very heavy memory load, so the child fails because they can't hold three words in their memory and compare the onsets or rimes at the same time.

Table 1. Summary of selected standardised tests of phonological awareness

Test	Age Range	Standardised	Content/subtests
PIPA (Dodd et al, 2000)	3;0-6;11	✓ UK & Aus. Typical language development, no speech impairment, no EAL	Rhyme awareness Syllable segmentation Alliteration awareness Phoneme isolation Phoneme segmentation Letter knowledge
PHAB (Fredrickson, et al, 1997) (*only in PHAB2)	6;00-14;11	✓ UK all reading levels, SEN, EAL	The Alliteration Test The Naming Speed Tests The Rhyme Test The Spoonerisms Test The Fluency Tests The Non-Word Reading Test Blending* Phonological Working Memory* Phoneme Segmentation* Phoneme Deletion*
PAT (Robertson & Salter 2007)	5;0-9;0	✓ USA	Rhyming: Discrimination and Production Segmentation: Sentences, Syllables, and Phonemes Isolation: Initial, Final, Deletion: Compound Words, Syllables, and Phonemes Substitution With Manipulatives Blending: Syllables and Phonemes Graphemes Decoding

Test	Age Range	Standardised	Content/subtests
			Invented Spelling
TOPA (Torgesen & Bryant, 2004)	5;0-8;0	✓ USA	Kindergarten Version: Initial Sound Letter Sounds Early Elementary Version Ending Sound Letter Sounds
CTOPP2 Wagner et al, 2013)	4;0-24;0	✓ USA	Elision Blending Words Sound Matching Phoneme Isolation Blending Nonwords Segmenting Nonwords Memory for Digits Nonword Repetition Rapid Digit Naming Rapid Letter Naming Rapid Colour Naming Rapid Object Naming
Rosner 13 item test (Rosner, 1993)	Nursery-year 3	✓ USA, UK	Syllable and phoneme deletion
SRT (Shriberg et al 2009)	3-16	✓USA	Repetition of non-words constructed of /b/, /d/, /m/, and /n/ and the vowel /ɒ/.

2.3.Dynamic assessment

Considering the information we have above about the impact of spoken language development on phonological awareness, it is reasonable to conclude that children with speech and language delay or disorder and children who have home languages other than English, will not follow the same developmental pattern as children with typically developing speech and language. This makes assessment using standardised assessments problematic because the population of children with speech and language delay or disorder and those who have home languages other than English do not generally match the normative population for the test. In addition, the evidence concerning the development of phonological awareness in general indicates that assessment should be sensitive to the child's level of development and should span recently mastered and emerging skills.

Dynamic assessment, based on the Vygotskyian concepts of the zone of actual development (ZAD) and the zone of proximal development (ZPD) provides us with a methodology that not only allows assessment of mastered skills, but also gives insight onto the stage of emergence reached for new skills (Lidz, 1991; Vygotsky, 1978). A frequently utilised format of dynamic assessment is test-teach-retest, with the teach component being a structured mediated learning environment (MLE) that gives us detailed information about the child's propensity to learn the new skill and the degree of support needed to facilitate that learning (Lidz, 2002).

Dynamic assessment of phonological awareness using a graduated prompt teaching method in the MLE has been shown to be a better predictor of reading progress in kindergarten children than static

measures of phonemic awareness: phoneme segmentation, phoneme deletion, and invented spelling. In addition, it was a better predictor of word recognition than a standardised test of vocabulary comprehension (Spector, 1992). Dynamic assessment has been shown to be particularly effective at differentiating delayed and disordered language and is useful with children with learning disabilities because it gives information about propensity to learn (Lidz & Pena, 1996; Moore-Brown, Huerta, Uranga-Hernandez, & Peña, 2006; Peña, Iglesias, & Lidz, 2001). In cases of complex interaction with different coexisting conditions, dynamic assessment can also be useful in contributing to diagnosis. Considering a bilingual child with language delay and poor academic and speech and language progress, Sanderson (2014), through a series of combined static and dynamic assessment, was able to demonstrate the child's ability to learn phonological awareness skills and propose effective teaching strategies, demonstrating the impact of the child's phonological memory deficit and the benefits of visual and kinaesthetic support. Results also support the increased difficulty experienced as the syllable units increase in number and therefore the words in complexity.

2.4. Assessment of Phonological Awareness Development

The Newcastle Assessment of Phonological Awareness Development (NAPA) (Stringer, 2019) has been developed to answer the combined need for dynamic assessment of phonological awareness skills (ZAD) of children in the early years foundation stage through to year one and to predict an accurate starting point for intervention (ZPD). The need arose initially in the context of a large scale longitudinal evaluation of the three tier model of intervention (universal, targeted, specialist) in the north east of England. The PIPA (Dodd, Crosbie, McIntosh, Teitzel, & Ozanne, 2000) was producing an excess of floor effect scores as children found the language constructs too difficult, leading to us having an inadvertent measure of language rather than of phonological awareness.

This assessment is meant to be quick to administer and works on the premise that if children can do a task they will, so you don't need 20 attempts at it. The mediated learning is focused on the provision of graded prompts, that will give you an idea of the level of support the child needed and therefore how close to mastery they are for emerging skills. The early word and syllable segmenting skills are included to allow for assessment of sensitivity to larger units that must be in place before phoneme level skills can be acquired. Letter sound recognition is included because it is seen as a predictor in reading development (Ball & Blachman, 1991; Brem et al., 2010).

The assessment includes counting words (can the child identify word boundaries?); syllable counting and deletion (can the child identify and manipulate syllables?); initial and final phoneme identification and deletion (is the child able to identify onset-rime and body-coda structures and manipulate them?). Rhyme identification and generation are tagged on the end, for use with children who are competent at other levels.

There are no comparative data because the information is to be used to plan intervention on the basis that the child would benefit from over-teaching i.e. learning skills beyond age equivalent levels (Zourou et al., 2010). It is based on the steps of acquisition for phonological awareness.

2.5. Conclusion

Taking into account the information we have about the development of phonological awareness and the purpose of assessment to inform intervention to support the child's development, either

dynamic assessment alone or a combination of dynamic and standardised assessment is recommended.

3. Intervention

There is an abundance of evidence to support the use of phonological awareness interventions with children with literacy difficulties and some excellent resources available. There is an increasing body of evidence to support phonological awareness intervention with children with speech and language disorders to support their literacy development (Gillon, 2004). We have evidence (see above) that phonological awareness interacts with spoken language, vocabulary development and literacy. The direction of influence is thought to be two way with intervention studies indicating that acceleration of phonological awareness development can increase effectiveness of intervention to increase word learning (Zens et al., 2009) and to expressive phonological intervention for speech sound disorder (Smith et al., 1998).

3.1. Evidence

- Gillon Phonological Awareness Programme (Gillon, 2004). This programme targets phonological awareness, speech production and literacy skills in children aged 5-7 with speech impairment. The Better Communication Research Project conclusion is that "the phonological awareness approach and the Gillon programme in particular has a moderate evidence level. Within the evidence are examples of significantly positive outcomes for children with speech difficulties. It is therefore a useful approach to implement where appropriate" (p49).
- Phonology with Reading Programme (P+R) (Bowyer-Crane et al., 2008; Hatcher, Hulme, & Ellis, 1994). Phonological awareness intervention is a key component of this approach and is explicitly taught for 5 minutes of each session. There is moderate evidence to support the use of this intervention with children with poor oral language skills to improve phonological awareness and literacy skills.
- Snowling and Hulme (2012) review effective interventions for both decoding and comprehension. "The main ingredients of a teaching approach to promote word-level decoding skills is one that combines training in phonological awareness with training in letter–sound knowledge and in which these two skills are reinforced in the context of reading" (p 28).

Phonological awareness intervention for literacy is usually delivered intensively in schools and shows good outcomes (Anthony & Lonigan, 2004). However, although children with speech and language disorders are likely to receive phonological awareness intervention as part of their literacy learning, this is not adequate to enable them to transfer those skills from the original task specific context in which it was learned (Zourou et al, 2012), suggesting that these children need more intensive intervention than typically developing children.

3.2. The Newcastle Approach

The approach we use in the Children's Speech and Language Therapy Clinic at Newcastle University carries a high auditory load and is specifically for children with speech and language disorders, who generally have difficulties with literacy: Stringer (2019) The Newcastle Intervention for Phonological Awareness. It is based on the intervention used in Newcastle Speech & Language Therapy (SLT)

Service for over 20 years now and was developed for SLT students to use in our speech & language disorder phonological awareness clinics.

The aim is for the child to experience a lot of success, especially as this is an area that they have probably experienced a lot of failure. By knowing the level of performance of the child you can start an activity at that point and provide scaffolding so that the child can experience success at the next step up. Vygotsky called the point that the child is at now the zone of actual development (ZAD) and the next step on, the zone of proximal development (ZPD). Children are ready to learn at their optimum ability in the ZPD (Bodrova & Leong, 2007; Vygotsky, 1986). If you can pitch your activity, with enough scaffolding that you fade away as the child progresses, into the ZPD, the child will experience more success more quickly.

The content of this phonological awareness intervention follows the developmental progression outlined above, progressing from larger to smaller units. The sequence goes from syllable level skills to phoneme level skills. Children should at least be able to manipulate syllables before moving on to phoneme level, but it is probably not necessary for them to achieve 100% accuracy on tasks before moving on.

- Syllable segmentation (2 syllable compound words→ 2 syllable non-compound words→ 3 syllable and 4 syllable)
- Syllable deletion; it may be easier to delete the first syllable than the last (delete first syllable of 2 syllable compound words→ delete last syllable of 2 syllable compound words→ delete first syllable of 2 syllable non-compound words→delete first syllable of longer words→ delete last syllable of 2, 3, 4 syllable words).
- Initial sound identification from adult production (between 2 sounds→ increasing number of sounds to choose from)
- Initial sound identification from own production (between 2 sounds→ increasing number of sounds to choose from)
- Final sound identification from adult production (between 2 sounds→ increasing number of sounds to choose from)
- Final sound identification from own production (between 2 sounds→ increasing number of sounds to choose from)
- Initial sound deletion from adult production
- Final sound deletion from adult production
- Initial sound substitution
- Final sound substitution
- Rhyme identification
- Consonant Cluster identification (counting and identifying the sounds in CCVC words)
- Consonant Cluster deletion (deleting on of the sounds in the CC element of a CCVC word to make a real or non-word)

There is a general progression from the child performing with scaffolding and support from the adult, listening to the adult's production, to being more reliant on their own production and manipulating sounds internally as well externally. Goals can be set at each stage that overlap to enable parallel consolidation of established skills and development of emerging skills.

At syllable level, the child must be able to count two and three syllable words before progressing to syllable deletion. You can continue syllable counting to establish ability to count one syllable and longer words while working on syllable deletion.

Do not work on final and initial syllable deletion together, as this will confuse the child, if you do them in the same session make sure you insert another activity e.g. syllable counting, between them and stress to the child that you are now thinking about e.g. 'the last part of the word'. It is, however, better to establish skill in one before moving on to the other.

When working at phoneme level always start with the child listening to you say the word (adult production) and progress to them saying the word (own production). Always start with a few sounds e.g. /k, m, t, b, d, s/ or sounds that the child can say easily. It can be helpful to use a visual cue if you are not sure what phoneme the child is saying e.g. Jolly Phonics pictures or actions (http://www.jollylearning.co.uk/).

4. How to…choose stimulus words for phonological awareness intervention

When choosing stimulus words for phonological awareness activities, it is important that the child can fully benefit from the teaching without being distracted or hampered by additional processing required for complex or inappropriate stimulus words. Carefully chosen words can aid progress; carelessly chosen words can sabotage a well planned activity.

When choosing stimulus words for phonological awareness intervention take into account the following information. You will also find it helpful when choosing stimuli for phonological output and motor speech tasks.

4.1.1. Words:

When choosing words it is important to think about how the child will understand the word, especially as single word stimuli don't have context to aid meaning. A lot of real words for adults are actually non-words for children because they are late-acquired or specialist words. This is often exaggerated for children with speech and language disorders because they may have a limited vocabulary compared to normally developing peers.

4.1.2. Syllables:

Always think about the structure of the syllables and the way the stress falls on them when you say the word in a natural way. Don't over stress weak syllables because this distorts how the word sounds. Be careful that a syllable junction doesn't create a consonant cluster that you didn't expect e.g. 'ice-cream' can turn into 'I scream', 'handbag' into 'hambag'. Make sure you decide how you are going to split your word at the outset. Is it ca-ter-pi-lar or cat-er-pi-lar or cat - er- pil-ar? If the child says the word in a different way to you e.g. /filəm/ instead of /film/ it is advisable to use their pronunciation so that they aren't confused.

4.1.3. Initial sounds (and final sounds):

Choose the sounds you are going to focus on carefully. Do not pick late developing sounds or sounds that have less phonological significance in English, for instance, choose /m/, /d/, /k/, /s/ not /l/, /r/, /w/, /h/ or /j/. So don't choose 'lemon' but do choose 'sun'. It is usually a good idea to start off with sounds that the child can say easily and as they master the skill you are teaching, move onto sounds

they find difficult. This way they can concentrate on acquiring the new skill before applying it in a more difficult context.

Start off with CVC words e.g. sun, mat, mouse, moon, and increase the number of syllables when the child has mastered the skill at this level.

Always choose single consonants and avoid consonant clusters in any position in the word, unless you are specifically working on them or the child is using them accurately in their speech. You can choose voiced/voiceless pairs e.g. /p/, /b/, but be careful when choosing sounds such as /t/, /k/ which can be common substitutions. This can confuse the child and you may not know what sound they are signalling. Unless you want to work on these contrasts as an additional learning goal, in which case including these contrasts in phonological awareness activities may support output changes.

4.1.4. Deletion:

For syllable and sound deletion activities always say the word and the sound out loud in the most naturalistic way possible. If you add extra vowels (especially /ə/) or end up with a syllable that you can't easily say e.g. *purple, pasta, apple,* choose another word.

How to….clinical skills guides 2009 The Clinical Educators of the Speech and Language Sciences Section, School of Education Communication and Language Sciences, Newcastle University (with thanks to Di Nicholson)

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