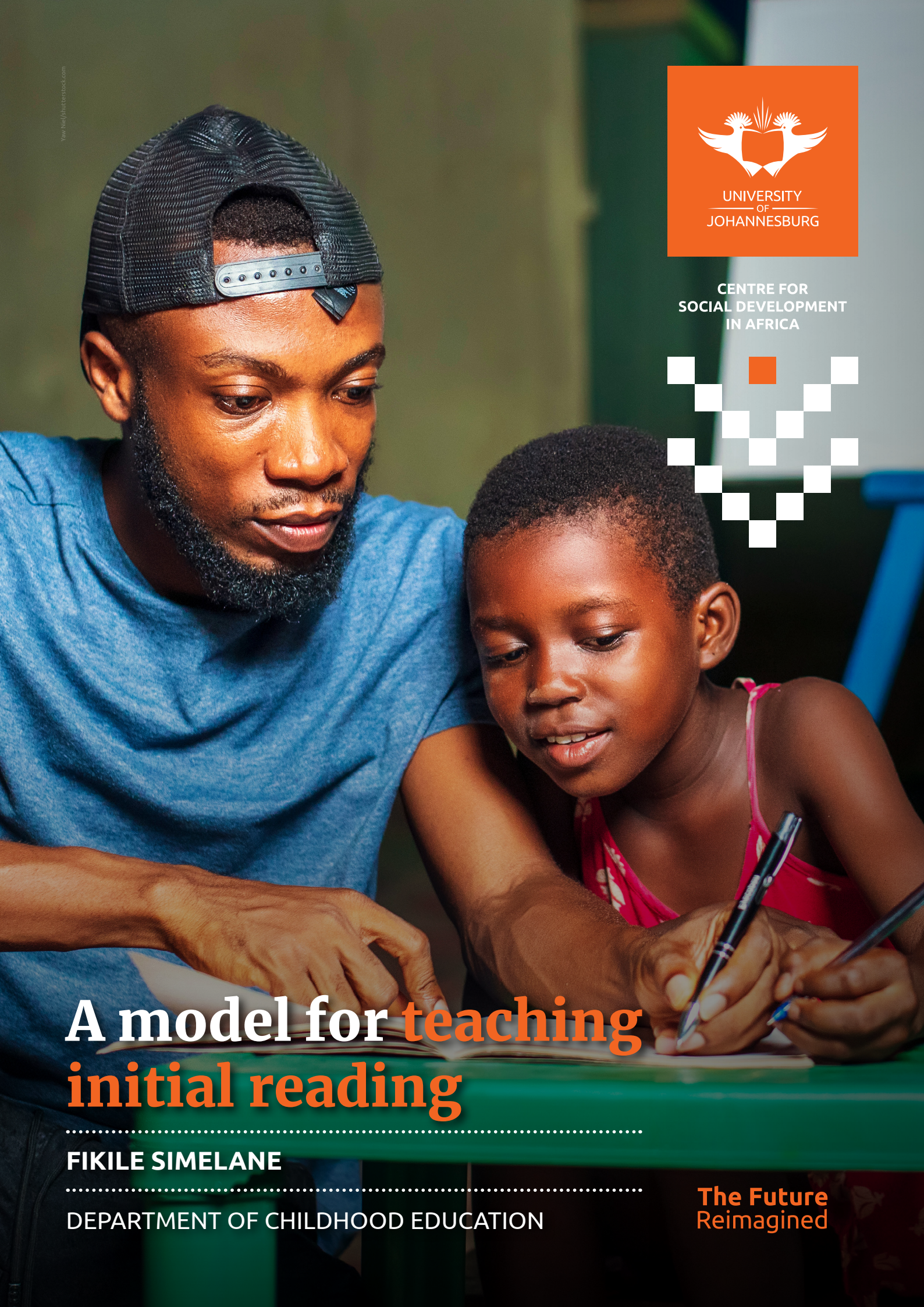

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A model for teaching initial reading

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The Future Reimagined

1. Introduction: Oral language and its phonology

The main characteristic of the model is *intensified phonological sensitivity* development, including preparing young learners to utilise the phonemes of their language when they encounter them in graphemic representation. Towards this end, Ms Simelane proposes a 'mini-curriculum' for teacher development for the specific PCK of teaching learners to read in the isiZulu language. It can serve as an example of how reading in other languages can be taught. Ms Simelane has designed a programme for teaching reading in isiZulu in which the sequence of 'lesson types' is important. The lesson types are distinguished by the central classroom activity of a lesson (See Table 1).

For the different lesson types, she suggests some classroom (phonics) activities that teachers could consider, and which could be implemented in tandem with vocabulary expansion and linguistic skills. Teachers in her study felt 'trapped' in a pedagogy of teaching phonemes in a phonics 'vacuum', without integrating other relevant components of initial reading, such as the structure of the language and the expansion of vocabulary as well as knowledge of grammar generally, and specifically syntax. She proposes a model which accentuates phonology intensively and which commences with individual phoneme knowledge only *after* a general 'class atmosphere' of the **oracy** of the isiZulu language has been established as the foundation for the entry into the world of 'letters'. This can be achieved by a variety of lessons, which include audio recording of children's spoken language. The model is based on the current science of reading (SoR) literature. It can assist teachers in not only teaching initial reading explicitly and systematically but also in accentuating the vocabulary and the discourse they will need to read school texts across the curriculum as soon as possible.

For this, the model she proposes includes much emphasis on *spoken language* as the basis for written language. An oracy emphasis would not decrease as the children gradually become fluent readers but would *increase* as texts will then be discussed and explored for their meaning and for their cohesiveness. For instance, at that stage, questions are asked about whether one sentence links with a previous, or a subsequent one and which sentence is the most important one, and so forth. The point here is that, as the children learn to read, they also learn to read somewhat critically – assessing the very text through which they are learning to become literate. In Figure 1, Pamela Snow (Snow, 2022), a leading cognitive psychologist and researcher of reading development, placed oracy at the centre of learning to read. In one of her regular tweets about reading instruction she noted:

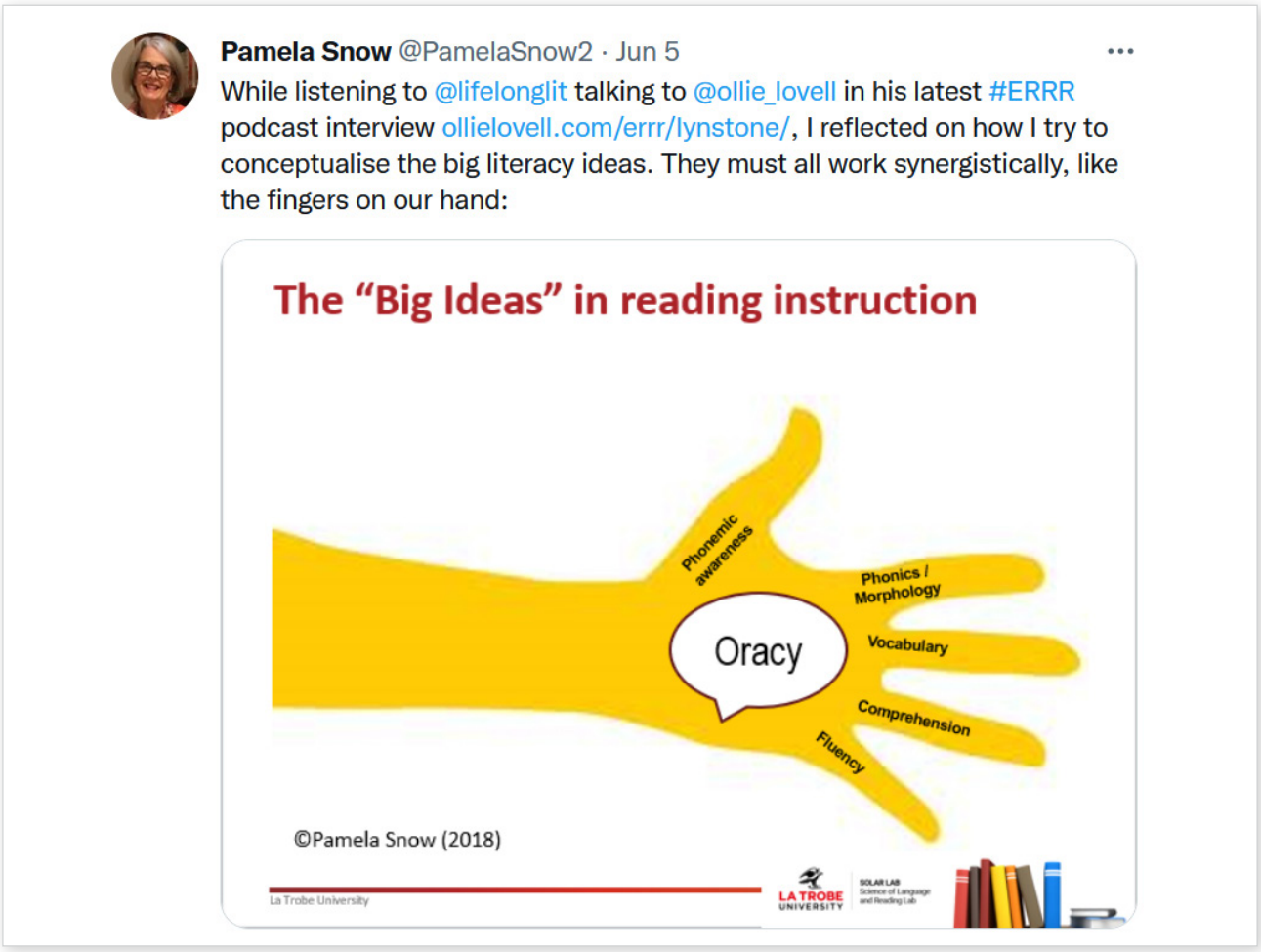

Figure1: The 'Big Ideas' in reading instruction (Snow, 2018, 2022)

2. From oral to written language: A model for teaching reading (in isiZulu)

In the process of designing the model, Ms Simelane reflected on the findings of her PhD study and derived *design principles* that would form the foundation of the model. Although the PIRiZ model is an emergent, conceptual model, it has empirical foundations in the data of her study.

Table 1: Principles for the PIRiZ model

Findings of the study	Principles of the model
1. Limited oral isiZulu	▪ Routine practice of clear pronunciation of sounds
2. Ambiguous pedagogy	▪ Research-based pedagogy
3. Haphazard teaching of phonemes	▪ Systematic teaching of phonemes
4. Irregular reading lessons	▪ Daily initial reading practice and repetition
5. Exaggerated emphasis on syllables	▪ Syllable awareness derived from phonemic instruction systematically
6. Superficial teaching	▪ Intensive, in-depth teaching during the initial phase of learning grapheme-phoneme correspondence
7. Learners' weak performance on the Grade 1 EGRA test.	▪ Regular learning opportunities and continuous assessment of individual learners

The model Ms S presents can serve as a template for teaching with a strong PCK for the pedagogy for learning to read in isiZulu

PCK: More than skilful teaching and knowledge of a subject

Shulman described PCK as that "special amalgam of content and pedagogy that is uniquely the province of teachers, their own special form of professional understanding" (1987, p. 8). He emphasised the importance of PCK as the single characteristic that separates someone with 'content' knowledge from a teacher who can represent ideas, "so that the unknowing can come to know, those without understanding can comprehend and discern, and the unskilled can become adept" (1987, p. 7). With regard to the PCK for teachers of initial reading, there is much evidence that teachers must not only know the content of their subject but also know enough about the, complexity and multidimensionality of literacy skills which include a labyrinth of latent and observed factors. Then, it would be simplistic to presume that teachers` content knowledge about reading and spelling can lead to effective instruction. The empirical evidence suggests that reading teachers, in addition to content knowledge, should have sufficient knowledge about the psychological, affective and communal aspects of literacy instruction and acquisition (Mahmoodi-Shahrebabaki, 2017, p. 3).

Ms S argues that teachers need to know not only *what* and *how* to teach, but also *why*. Their PCK is not only about *what* and *how* they teach reading via phonics but also *why* they plan and execute their lessons in the way that they do. Shulman's ideas about PCK has brought to the teaching of initial reading an important brief: teachers must be accountable for *why* they teach the way they do.

Table 2: Principles, activities and cognitive elementals of learning to read

Developing skills for reading	Principles of the model	Classroom learning activities
Spoken language: ▪ Phonological awareness ▪ Suprasegmental phonology	▪ Routine practice of clear pronunciation	▪ Enunciation of words and manipulation of oral speech sounds
▪ Alphabetic principles ▪ Phonemic awareness ▪ Decoding ▪ Word identification	▪ Research based pedagogy ▪ Systematic teaching of phonemes ▪ Intensive, in-depth teaching during initial phase of learning grapheme-phoneme correspondence	▪ Align graphemes with phonemes ▪ Introduce letter names when phonemes-graphemes relationship has been established
▪ Semantics ▪ Syntax	▪ Syllable awareness derived from phonemic instruction systematically	▪ Enrich vocabulary and expand the vocabulary of school subject ▪ Build sentences
▪ Root based morpheme	▪ Researched based pedagogy & knowledge of linguistic skills	▪ Explore the power of morphemes
▪ Fluency: Topical themes, passage with coherence	▪ -Daily initial reading practice and repetition	▪ Invoke topics across the curriculum ▪ Utilse pictures when phonemic knowledge is firm
▪ Reading with comprehension	▪ Daily initial reading practice and repetition	▪ Expose learners to topical themes: Texts with cohesive sentences. Pictures as additions.

The third column of Table 2 comprises classroom activities. These activities are planned for the DBE curriculum as it stands, except that the time slots awarded to activities on the school calendar will be different. Considering the cognitive model of reading instruction, more time will be spent on *practice and repetition and on individual children's speaking and oral reading to build working memory (WM) capacity and its reciprocal development with reading competence*. I suggest ample use of audio recording as a daily classroom tool until the children are fluent decoders. Oral discussions and individual oral reading will be important pedagogical tools. The recordings will be played back to the class and discussion will follow.[1]

A vital tenet of the model is that before children are introduced to any written symbol, they will speak *individually* (and not in 'chorus' style), listen, and practice spoken isiZulu. Individual speaking or classroom dialogues will be crucial to 'exercise' the to *recognize*, *process*, and to *store* isiZulu language sounds (in words and in sentences). Oral memory games can be designed for this purpose. This can happen regularly – even after children have learned to read fluently and when they understand the text. Children's speech will be recorded so that individuals can hear their own speech. Such recording will continue throughout the trial period, so that children can hear their own utterances as well as their own oral reading. In these oral activities children will be systematically guided by the teacher, who will keep in mind that the working memory receives information, processes it and stores it in less than three seconds. Children hear and see information and 'work' through it at great speed per individual moments. Then the next task is started.

[1] I learned this from my granddaughter who listens to recordings of her speech with great interest and attention.

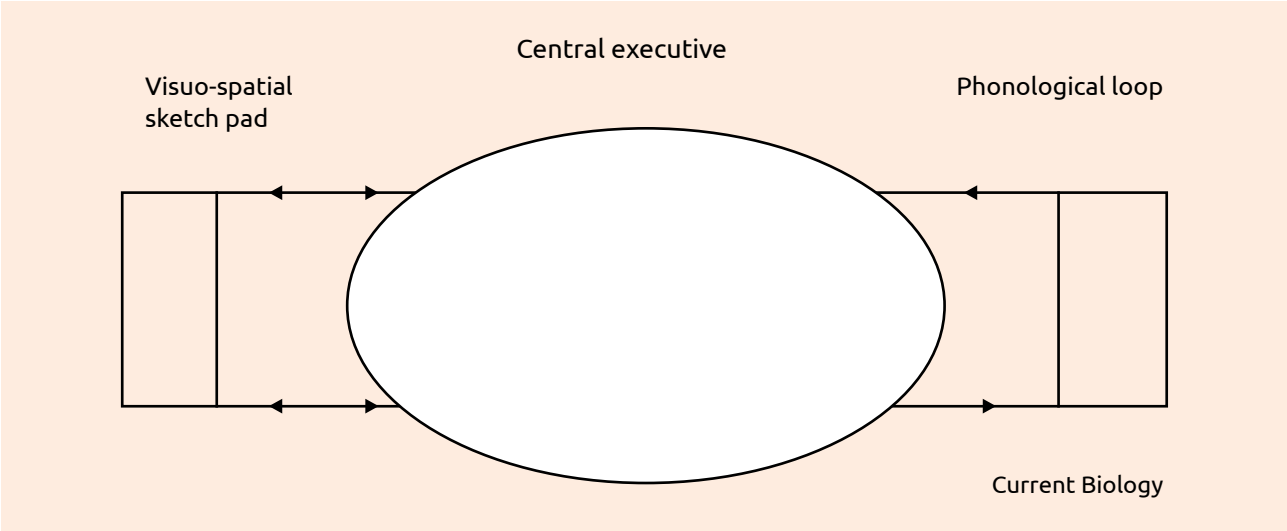

Figure 2: The model of working memory proposed in 1974 (Baddeley, 2010, p. 137).

Working memory, especially the domain-general central executive component, should be heavily involved in reading's early stages. As reading experience accumulates, lexical and verbal knowledge are consolidated in long-term memory, and readers come to rely more on *direct retrieval* of lexical and verbal knowledge from long-term memory to perform a variety of reading tasks. As students develop foundational reading skills and attempt to *read for understanding*, working memory resources may be allocated to integrate verbal knowledge and procedures to meet the demands of reading tasks, strengthening verbal working memory and the impact of verbal working memory on reading in the process (Peng & Goodridge, 2020, p. 581).

3. Classroom activities

These activities are not prescriptions and are aligned with specific 'lesson types.'

Lesson type 1: Enunciation of words

Learners need to have a shared pronunciation of phonemes as much as they share an exact graphemic representation. If teachers grasp the importance of the parallel (and precise) memorising of sound and written symbols, WM can encode both, utilising the phonological loop and the visuospatial sketchpad simultaneously and storing the information in long-term memory (LTM). However, teachers have to interact with learners whose pronunciation differs. Children come from different language backgrounds when they begin school. As much as they can speak their first language, they mostly use colloquial versions and different accents; their pronunciation differs quite markedly in some instances. For example, children from Soweto in general pronounce *amaqanda* (eggs) as *amacanda* replacing /q/ with /c/. This can have a negative effect when writing the word *'amaqanda' and even when reading it*. During the interviews of my study, teachers mentioned that they do not have "time to teach listening and speaking even though it was on the curriculum because they need to cover (sic!) the curriculum". Children's pronunciation was neglected and the teachers did not realise the importance of creating a routine where time is set aside to practice the pronunciation of words and the enunciation of phonemes in syllables and in words.

In instances like these, the use of audio recordings can be helpful because children can listen to their own pronunciation. To teach children to be sensitive to the spoken language, teachers can emphasise the pronunciation of phonemes, syllables, and words and include these activities as a routine practice, which can be inserted in any phase of a lesson. Apart from the precise sounds, correct tone, and pitch, the duration of parts of words can be added as necessary prosodic skills. When children hear and repeat words according to the way they have heard them spoken by their teacher, they become increasingly aware of the overall phonology of the language as well as the phonemic distinction (in words) – which is a skill the teacher will teach intentionally as they are introduced to the grapheme 'partner'. The whole words and their sound combinations are stored in their auditory cortex. In the first few milliseconds, when the WM receives/ *encodes* a (language sound) stimulus - and then *maintains* it until it has made its way to the auditory cortex (and some researchers say also with a connection to the hippocampus) - the memory of the sound is *re-inscribed* in the *plenum temporale*, where its storage has been maintained since infancy (See Figure 2). It is, therefore, crucial that children store shared characteristics of sounds that they can recall when the sound is linked to a grapheme. This means that in a class of children there should be consensus of what the sound that they are hearing is heard more or less the same by all of them and relatable to the grapheme that the teacher is/will be introducing. The teacher has to 'spot' check individuals to make sure that they are not just responding in chorus or nodding acceptance. Such information will remain useful

throughout their grapheme-phoneme correspondence learning and when they maintain attention. Kumar *et al.* (2016, p. 4342), in an article, titled, "A Brain System for Auditory Working Memory" found that in the milliseconds when a sound 'enters' the WM, the WM connects with the frontal cortex as well as the auditory memory. This is an important consideration – children will not only retrieve a sound they have heard but will also *manage* its use. And for this to become a cognitive habit, they have to repeat the practice so that the practice itself can be firmly 'memorised', or automised.

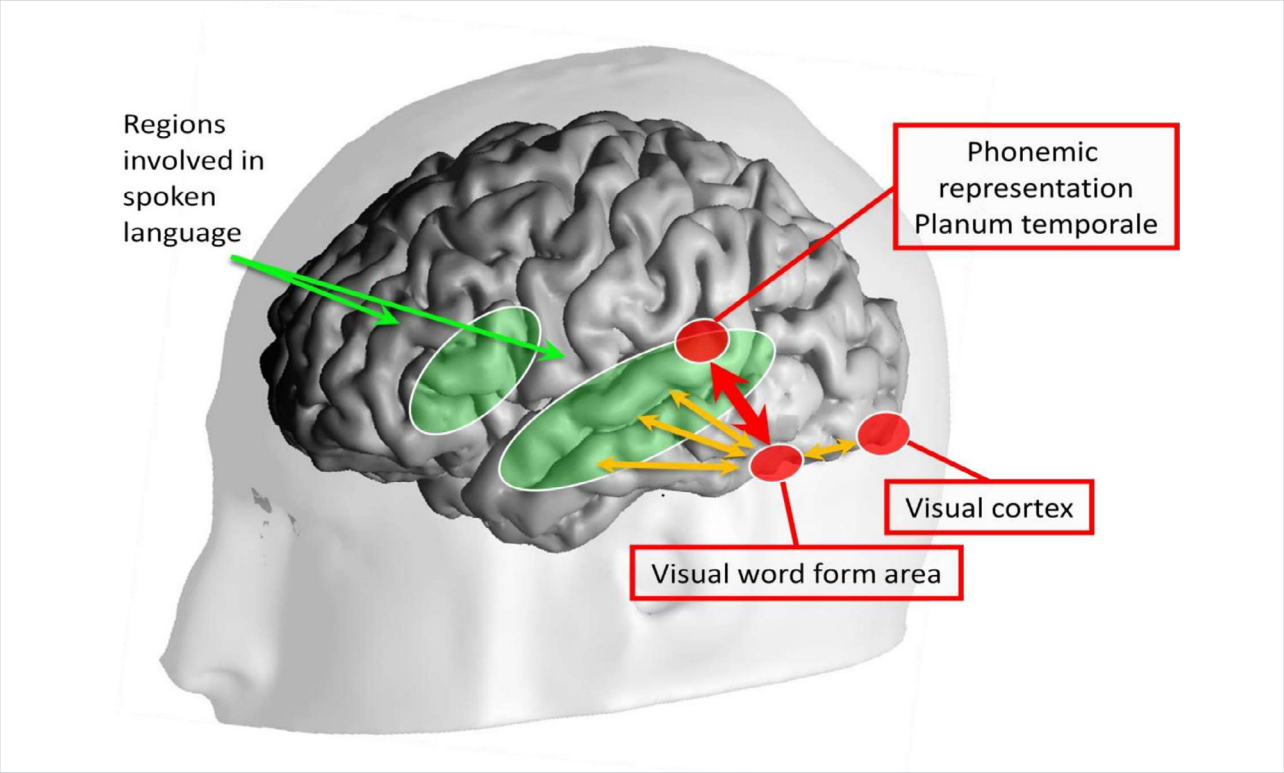

Figure 3: Visual and phonological areas of the brain (Dehaene, 2013, p7)

There are a variety of activities that teachers can use to develop the minutiae of oral language in preparation for children's initial reading. The spoken language is crucial in Grade R and Grade 1 to ensure (optimally shared) phonemic storage. Teachers can start by involving children in awareness activities that require acute listening and uttering sounds individually and in words. The activities can be based on the manipulation of spoken language and its sound system. Other activities that can be used by teachers are songs, lullabies, poems, stories, and phonological awareness games. These activities are to be performed to help children with the enunciation of words that will be stored in their auditory memory. A typical activity that children might love and enjoy while learning, is a tongue twister such as this one:

*u**C**ele u**c**ambalele o**c**ansini, u**c**abanga, i**c**ebo loku**c**iba u**C**etshwayo ngom**c**ibisholo. Uzowu**c**ija um**c**ibisholo u**c**ije.*

This can be recorded in different forms (slow, faster, loud, and very soft). The teacher can start by playing the recorded tongue twister. Before playing it, she can explain the goal of listening to this recording. The reason for this is to help children to focus specifically on the pronunciation of words and how they follow in sequence. The teacher can play the recording, pause it and ask the children to say the sequence of words they have heard *individually* and later in pairs to one classmate. As children say the words, the teacher should listen and ensure that all the children are pronouncing the words correctly. All responses should be individual.

She can play the first sentence of the series in the exercise and ensure that all the children are pronouncing each word clearly, and then gradually move to the next sentence. When she is confident that children can enunciate words clearly, the teacher can ask the children to recall and say all three sentences. At this point, the teacher should take note of suprasegmental phonology, such as tone, length of a sound, and pitch as they are saying the words. By practicing this type of recall, she is helping them to retrieve what they have just heard and practice by focusing on sounds and words. This type of task is to let individual sounds stand out – before they are associated with their written version. For explicit phonemic awareness raising, segmenting and blending of phonemes (aurally, by hearing it - and orally by saying the sounds) will be practiced by children with the help of the teacher. Children will segment the words in their syllabic and phonemic constituents. In this way, they are prepped for when they encounter the written symbols for sounds.

There are various varieties of this type of phonemic awareness training before encountering written symbols. Integration of mathematics language can be used at this point by asking different questions such as:

- Is */c/* the first sound or the second sound?
- Which sound comes before sound */c/*?, and so forth.
- In the word *ngomcibisholo* - is the sound */c/* in the first or fourth position
- Which sound do you hear before the sound */c/*?.

The purpose of this activity is to make children aware of the phonemes that are found in words before they are introduced to the graphic symbols that represent them. No written language is incorporated into these lessons and there are no wall charts with words or with the letters of the alphabet. This rather radical suggestion is to establish the power of oracity, which has many millennia of history compared to the power of literacy.

Lesson type 2: Aligning graphemes with phonemes

Reading begins with seeing the grapheme and then connecting it to the phoneme (which is already stored in the *plenum temporale*, and which is located proximally to the VWFA, where the graphemic symbol will register) (See Figure 3). For this skill to be developed optimally, teachers should ideally teach phonemes systematically, using researched-based initial reading pedagogies of learning to read in isiZulu when this becomes available. Currently, there is no phonics programme that is aligned with the correct sound system of the isiZulu phoneme (Chonco, 2016). To address this issue, I propose that teachers design their own phonics programme with which they can identify high-frequency phonemes in isiZulu and align that to the CAPS curriculum; the curriculum requires teachers to teach all the phonemes that are represented by single letters of the alphabet first, with diagraphs introduced later in the year. In my view that may disadvantages the progress of children who are learning to read in isiZulu because there are more prevalent phonemes, comprising a sequence of consonants which they should rather learn first. For example, *isihlahla* (tree) or *ukuhlala* (to sit) - and many more. These are words that children use, they are also found in the reading material that children encounter in the first grade. The question is, how do teachers align the grapheme with phonemes? In a discussion with Posthumous (2022, July), however, he suggested the following, with which I agree:

> It will make sense to start with single letter graphemes, but to introduce the high frequency graphemes such as sh, hl, dl quite soon. The present order proposed is not that bad. It makes provision for the teaching of these digraphs in Grade 1. There is no justification for teaching the digraphs */dl/*, */hl/* and */sh/* first,

One of the challenges that teachers in my study expressed was that they do not know how to integrate the language skills which are required by CAPS. I suggest that teachers can link listening and speaking activities in all phonics lessons. They can, for example, draw from 'tongue twister' tasks by asking children to recall a sound that was found in all the words in the tongue twister. If they struggle, she can ask them to say the tongue twister again and this time they need to listen to themselves as they say the twister aloud. She can also record a few individuals. She needs to encourage them to listen to what they are saying so that they can identify the phoneme that they are looking for.

After they have identified the phoneme /c/, the teacher should help the children to sound the phoneme correctly as a phoneme, not a syllable (there is a general tendency by teachers of sounding consonants as if they are attached to vowels). Teaching should be intensive during the initial phase of teaching grapheme and phoneme correspondence. The teacher must introduce the grapheme by showing the written symbol while saying the sound. A synthetic approach should be used, using the bottom up approach by starting with a unitary phoneme, then progressing to the phonemes that are combined in syllables.

The teacher may use words from the tongue twister and remind children how they segmented the words during the listening and speaking activity. This time they will focus on the grapheme-phoneme connection of such words. Various games can be designed around this principle. The teacher can help the children by showing them the word on a flash card and highlighting the grapheme. The teacher needs to read/'say' the word by enunciating all the phonemes separately. As children build the word they should say aloud the phoneme which is represented by the grapheme. This will help the teacher to see if they are guessing or learning to decode. In other activities, she can omit /c/. Children can say the word aloud and identify where to place /c/ in the words. To infuse communication and collaboration competencies, the teacher can ask a representative from a group to come in front and show how they build their words. As the child does that she say the phonemes of the sounds aligning them to the grapheme.

Table3: Illustration of words with the grapheme /c/

Words	Segmenting into phonemes	Segmenting into syllables	Fill in the missing phoneme	Blending
cele	c-e-l-e	ce-le	_ela	_ _ _ _
cabanga	c-a-b-a-ng-a	ca-ba-nga	_abanga	_ _ _ _ _ _
cambalala	**c**-a-mb-a-l-a-l-a	ca-mba-la-la	_ambalala	_ _ _ _ _ _ _
i**c**ansi	i-c-a-ns-i	i-ca-nsi	i_ansi	_ _ _ _ _
i**c**ebo	i-**c**-e-b-o	i-ce-bo	i_ebo	_ _ _ _ _
Cetshwayo	C-e-tsh-w-a-y-o	Ce-tshwa-yo	_etshwayo	_ _ _ _ _ _ _ _ _

It is advisable that learners also write the letter/s of the grapheme at this stage, learning how to form individual letters by showing the children the letter formation of the letter /c/, and how to write it in lower case. The teacher can start by letting the children trace the letter. As they write they must utter the sound.

Lesson type 3: Enriching vocabulary

Before children are fluent readers, their language knowledge in general, and their vocabulary specifically, can be expanded by well-orchestrated lesson planning. Apart from prevalent words in early reading texts, such as the *'Imiqamelo eminingi kakhulu'* (Isaacs, 2021) series, teachers can utilize the vocabulary of the mathematics- and the life skills curriculum in which the main terms of STEM topics and also social sciences topics are used. If schools do not have such books, teachers can create books themselves by perusing the curriculum.

It is very important to have a 'word bank' chart or corner in the class. This can serve as a reference corner where children can see the words, read them, and use them in other subjects or conversations. The words and the typical sentences should be practiced in classroom conversations. Some of these discussions can be audio and video recorded. The 'word bank' should include all parts of speech and not focus mainly on nouns and verbs.

Lesson type 4: Integrating topics across the curriculum

Texts for reading and for language expansion should preferably be about young learners' interests, but also about the academic discourse that they encounter in their DBE workbooks. Therefore, their workbooks for mathematics and life skills can be used as sources of integration. The principle of phonological awareness should be maintained throughout – practicing how some of the newly introduced terminology is pronounced and aligning it with their written version in learners' workbooks.

Lesson type 5: Introducing the alphabet letter names

Letter names should be taught in isiZulu, and not English because letter names can serve to establish some phonological link that can be useful when children learn to associate phonemes with graphemes. I do not find the argument that the learning of 26 letter names - separated from and prior to phonemic training convincing, though. I do not doubt that letter names fulfil an important classroom discourse function when conversations about pronunciation and spelling arise. At that stage, the 26 letter names literally fulfil the role of being names of parts of (or a whole) phoneme-grapheme. If taught only as letter names, it might be an obstacle in the WM's on going 'brief' of *encoding*, *maintaining*, and *retrieving* phonemes. For example, when referring to a letter name, such as *<c>* to elicit a sound, the letter name serves some purpose in English if the letter is pronounced with an onset sound such as <v> pronounced as /vee/. Huang *et al.* (2014, p. 182) found that letter names serve a purpose in English:

- Letters with names that provide clues to their sounds are learned earlier.
- Letters with a one-to-one relationship to their sounds re learned earlier.
- Knowledge of a letter's name is associated with an increase in the odds of knowing that letter's sound.
- Children tend to learn the sound of the first letter of their own first names earlier.
- Greater phonological awareness is associated with greater letter-sound knowledge.

There is, however, no assurance that similar findings will come from replication of this – and other studies – in isiZulu. It can, possibly, be confusing to a child who is only beginning to recognis e the correspondence of a written sign (grapheme) with a spoken sign (phoneme). Furthermore, with 26 letters and 49 isiZulu phonemes, the perceptual and cognitive load may be a challenging task for the WM's encoding, maintenance, and retrieval. I propose that teachers should focus on teaching the grapheme-phoneme relationship first because that is crucial for learning to read.

Although Piasta and Wagner (2010), Jones and Reutzel (2012), Piasta (2014) and Piasta, *et al.* (2022) intermittently use the term 'letter sounds' along with 'letter names' and 'alphabetical knowledge', they generally refer to how these terms function in teaching children to read in English. They argue that the type 'cueing' of the letter name serves as an important trigger; I do not wholly agree that it is as important as they say. I propose that the 26 letter alphabet should *not* be emphasised in class until after the initial phase of phonics teaching and once children have achieved reasonable fluency in decoding in isiZulu. Later in children's journey to reading fluency, letter names it can serve various purposes in classroom discussions – getting to know the members of the 'alphabet family' which they have so far mostly encountered as phonemes or part of a phoneme. They then deliberately name the letters, especially as a precursor to spelling and general orthographic mapping. However, for early reading, the names of letters maybe a hurdle. Clearly studies, such as the one by Treinman *et al.* (2019) about this issue are crucial for isiZulu reading pedagogy. Recordings of isiZulu letter names can be used along with the written versions.

4. Teaching and assessment for two school terms in Grade 1

Based on the finding of my study, I propose a mini-curriculum for the PIRiZ model for the first months of Grade 1.

Table 4: Suggested lesson template

Week / Lesson type	1	2	3	4	5	6	7	8	9	10	11	12
Phonological awareness	X	X	X	X	X	X	X	X	X	X	X	X
Phonemics			X	X	X	X	X	X	X	X	X	
Vocabulary	X	X	X	X	X	X	X	X	X	X	X	X
Texts across curriculum										X	X	X
Reading material with Illustrations									X	X	X	X
Letter names												X
Writing					X	X	X	X	X	X	X	X

The intervention that Ms S proposes differs in several ways from what the current practice in schools comprises. Teachers who know the EGRA test are inclined to 'teach to the test'. In the test, with its 'Toolkit' booklet, like in many publications about early reading, the term 'letter-sound' or 'letter sound' is prominent. It refers to the sound associated with a letter of the alphabet in a specific language (Dodd & Carr, 2003; Foorman, Francis, Novy & Liberman,1991; Huang, Tortorelli & Invernizzi, 2014; Hulme, Bowyer-Crane, Carroll, Duff & Snowling, 2012; Kim, Petscher, Foorman & Zhou, 2010; McBride-Chang, 1999; Newcombe & Marshall, 2017; Treiman, Stothard & Snowling,2019).

It is evident from the texts of the articles by these authors that they refer mostly to grapheme-phoneme correspondence in a *single* letter representation and not in digraphs or trigraphs. They thus include only those sounds of the language that are represented with one letter of the alphabet. There is, furthermore, little reference to how one letter can represent more than one sound (or no sound, as in the 'silent */e/*' at the end of English words such as *receive* and *believe*), depending on its position in a syllable or a word. Single letters from the alphabet in the EGRA test also do not contain additional letter 'character information', such as the many symbols that are added onto single letters in many languages. Alphabetic script in languages such as Turkish, German, French and Afrikaans, among others, contain several additions to the single letter. Examples of the letter *<a>* are: *<ä>*, *<á>*, *<â>*, *<å>*, *<q>*. The term 'letter sound' is closely related to the orthographic conventions of a language as well as the pronunciation of a single letter *grapheme/phoneme*.

In the case of a single letter, the superior temporal region probably receives information straight from the visual areas. However, when input is a whole string of letters, complex processing is needed to parse it into graphemes. This process is serial in nature (Dehaene, 2009, p. 109).

Here Dehaene refers to a "strings of letters" being parsed into graphemes that represent phonemes and many of these phonemes consist of more than one letter. Often they are not. The EGRA test simply uses single alphabet letters in its letter sound subtask, some of which are not present in some languages. In an Afrikaans test it does not make sense to have <c>, or <x> or <q>. IsiZulu has no phonemes for some of the letters either, such as <r>, which is only used in borrowed words like rice, ruler, and rand.

In the case of 'linguistic deafness', such as in Japanese (or Oshivambo languages), the auditory difference between /l/ and /r/ is not perceived. Relying on 'letter sound' identification of single letters is, in my view, not straightforward.

According to Dehaene (2009, p. 106), "brain imaging easily separates visual areas that are activated by the shapes of letters, from auditory areas, which are activated by speech sounds … A match or a mismatch between a letter and a simultaneously heard sound" is thus crucial in initial reading. I would argue that it has to be taught as sounds, with letter names following later: Treiman *et al.*, (2019, p. 1003) note, "when children in England enter Reception Year, they are taught letter *sounds* but not letter names. The names are typically taught at school at the end of Reception Year or even in the following school year, Year 1". My thoughts on this are that the time of the introduction of letter names depends on the language and its standardised letter names, which could be helpful in terms of *acrophonicity* – whereby the first sound of a letter name contains the sound of the relevant grapheme. The sound of <b> in the pronunciation of the letter name */bee/*, starting with the sound /b/, could be helpful for children.

5. The connection of oral and written language: four WM elements

In the cognitive model for initial reading instruction, Peng and Goodridge (2020) have emphasised that working memory capacity (WMC) is often underestimated in pedagogy. In the plan that I propose as an intervention in the school where I conducted my study, I invoke the four elements of their model and base the PIRiZ on my first theorising of their work as it applies to the planning and the practice of teaching in this school.

Table 5: An example of a list of isiZulu phonemes and consonant blends (Mthembu-Ngema & Posthumus, 2020)

Consonant phonemes (letter phonemes)	Consonant phonemes (2 letter phonemes	Consonant phonemes (3 letter phonemes	vowels	Consonant blends
/b/, /p/, /t/, /d/, /k/, /g/, /m/, /n/, /v/, /m/, /z/, /s/, /h/, /w/, /y/, /l/, /r/, /j/, /c/, /x/, /q/,	*/th/, /kh/, /nh/, /ny/, /nj/, /ng/, /hh/, /dl/, /hl/,/sh/, /ts/, /ns/, /kl/, /ch/,/gc/, /xh/, /gx/, /qh/, /gq/*	*/tsh/*	*/a/, /e/, /i/, /o/ and /u/*	nt, nd, mp, mb, nhl, ntsh, ngq, nhlw, ngqw

In Grade 3 the focus should be on expository text and not phonemes, with more emphasis on vocabulary knowledge which relates to content knowledge of other subjects, linguistic skills, and writing of cohesive sentences and paragraphs.

Oracy is an integral part of learning to read. In my experience it has not been clear for teachers how they should optimise oracy skills with the direct objective of teaching reading. I propose that this skill should be taught in tandem with overall specific phonemes. Teachers should also understand the relationship between reading and working memory. To retain the phonemes in the working memory children should hear them over and over again. So, the process of raising phonological – and specifically phonemic awareness should not be rushed. To strengthen children's working memory, they need to hear (encode), maintain (organise), and then retrieve (speak/say) sounds that they link with their written version. Future developmental workshops will help teachers to understand the pivotal role of this component reading pedagogy. HODs and district officials need to monitor the implementation and the teaching of this. This may appear as a prescriptive suggestion, which provincial HODs can contemplate with the experts in their Departments. District officials and teachers should be trained on how and why they must teach initial reading in a specific way. The developmental workshops should be based on the science of reading and aimed at the improvement of teachers' PCK.