

# Training Grade R teachers to impart visual perceptual skills for early reading

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*Visual Perception is the mind's ability to interpret or give meaning to what is seen with the eyes* (WCED 2006). Grade Reception Phase (R) teachers, of five and six year-old learners, need to impart Visual Perceptual Skills (VPS) during visual training for pre-reading. These pre-reading activities in Grade R support early reading progress in Grade 1, which is critical for improving basic literacy and numeracy education in South Africa. A quality Grade R programme which can deliver these visual training outcomes depends on a progressive model for effective pre- and in-service professional development of teachers. A model implemented via academic-governmental collaboration. This article seeks to describe and recommend best practices of such professional development. The recommendations are based on an overview of the current Grade R professional development landscape, a brief exposition of the Subject Content Knowledge (SCK) of VPS, a document analysis of the Curriculum and Assessment Policy Statement (CAPS) curriculum and, finally, a case study with a discourse analysis involving four Grade R teachers.

## Introduction

In South Africa there is consensus that 'getting basic education right' is foundational for the future of this country. When national Basic Education Minister Angie Motshekga spoke about the importance of the Grade Reception Phase (R) programme for five and six year-old learners, on 09 February 2013, she focused on the teachers delivering the programme:

We recognise the challenges of teacher training; working conditions and supply of skilled practitioners ... We accept the task of ensuring that Grade R teachers are paid well and know what they are supposed to do. (Department of Basic Education 2013a)

Motshekga's comments imply that the quality of the Grade R teachers' knowledge and skill is pivotal to the effectiveness of the Grade R programme. The McKinsey report on the world's top school systems cites three best practices which are all related to teacher knowledge, namely:

1. getting the right people to become teachers
2. developing them into effective instructors and
3. ensuring that the system is able to deliver the best possible instruction to every child (Barber & Mourshed 2007:5).

Teachers interact with cohorts of learners year after year. What the Grade R teacher knows, and does, based on that knowledge is, therefore, extremely important. Teachers impart what they know. Once what they know is identified, then they can be developed further, during both pre-and in-service training.

It is not helpful only to present findings on what Grade R teachers know and can impart. Professional development must be promoted which will empower Grade R teachers to impart more knowledge more effectively in the classroom. This development includes pre-service training, in-service coaching, further studies, workshops and systemic monitoring by the school and educational department.

This article seeks to describe and recommend best practices of such professional development. The recommendations below are based on an overview of the current professional development landscape, a brief exposition of the Subject Content Knowledge (SCK) of visual perceptual skills (VPS), a document analysis of the Curriculum and Assessment Policy Statement (CAPS) curriculum and finally, a case study with a discourse analysis involving four Grade R teachers.

At the outset it is important to assess the following two aspects related to Grade R teachers: firstly, the extent to which Grade R teachers are currently being trained for their task; and, secondly,

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the general level of equipping they possess at present. An investigation of such considerations is beyond the scope of this article. However, the Grade R professional development landscape needs to be reviewed briefly, in order to clarify the context within which the teachers featured in the case study perform their task, particularly with reference to their SCK of VPS and visual training.

## The Grade R professional development landscape

A review of teacher training provides some background for present and future professional development. After 1996 the then Department of Education (DoE) decided to spend less on teachers to enable more spending on infrastructure in public Grade R facilities managed by School Governing Bodies (SGBs). As too few schools could offer departmental posts, most public posts were SGB funded.

Before 2007 the Grade R teachers were trained by means of either: a four-year higher diploma in education (HDE), including three years in Junior Primary followed by one year specialising in Pre-Primary; or a four-year B Prim Ed which included a Pre-Primary module.

Of particular relevance to the case study is a third option which took shape from 2007 onwards, when a National Diploma course was launched in colleges, known as Early Childhood Development (ECD). ECD 5 (NQF Level 5) was designated for teaching 4–6 year-old children (one year full-time or via distance learning over about 18–24 months). It had to be either accessed via a school leaving qualification, or Level 4, or a Higher Certificate in ECD. Content wise, it covered the managing of a learning programme within the national school curriculum. ECD 5 only included Grade R literacy as an elective component. Education white paper 5 (EWP5) (Department of Education 2001a) had already confirmed the designation of teachers receiving this training as *ECD Practitioners*. In-service training was made available to ECD Practitioners in the form of CAPS training in mid-2012. At present, all new Grade R Practitioner contract appointments are only arranged by SGB's, for a salary of approximately R8000.00 net per month, paid by the education department in non-fee schools only. The ECD 5 facilitates access to the *Diploma in Grade R Teaching* (NQF Level 6) which in turn accesses the *B Ed Foundation Phase* (NQF Level 7).

In 2011 the Department of Basic Education (DBE), published *The minimum requirements for teacher education qualifications* (2011a). In this document, the DBE sought to raise the minimum qualification requirements of Grade R teachers, whilst drawing them more strongly into the Foundation Phase (FP) domain:

All new entrants intending to become FP teachers [*qualified to teach from Grades R to 3*], should register for a B Ed (FP) rather than for the Grade R Teaching Diploma, provided they meet the requirements for entry into the B Ed. (p. 40)

Linked to this was the requirement that 'Grade R teaching qualifications must be designed cognately with the B Ed (FP), to provide for maximum credit transfers when Grade R teachers continue their studies ...' (p. 40).

The DBE was aware of the fact that not all Grade R teachers would have the credits for the B Ed (FP). The Diploma was promoted as the preferred alternative to the B Ed for Grade R teachers. It can be accessed by a school leaving qualification inclusive of a diploma entry-endorsement, or by a 'Level 4 or Level 5 Certificate or Diploma in ECD' (p. 41) carrying sufficient credits. The Diploma also requires '... curriculum differentiation and adaptation for multiple learning needs' and calls for a strong 'focus ... on emerging literacy' (p. 41). The latter single focus raises the question of the extent to which VPS is considered important in the course-content, as adequate VPS development is inseparable from equally strong foci on emergent numeracy and life skills. The knowledge mix prescribed for the Diploma is as follows: 50% covers Grade R specialist subjects, 40% covers general educational subjects and the remaining 10% can be used for ECD, that is, pre-Grade R (p. 41). The substantial allocation of these resources to Grade R specialist subjects can potentially facilitate in-depth coverage of SCK of VPS and competence in visual training design. The Diploma was implemented in academic institutions at the start of 2014.

From 2014 the following was proposed by the DBE: Grade R training was to be compulsory for Grade R teachers, the two available options being, firstly, the B Ed (FP) and, secondly, the Diploma for Grade R teaching. The latter option provided access to Grade R contract posts only.

However, it was decided that from 2015 onwards, only the B Ed (FP) would give access to permanent departmental Grade R posts. By the end of 2015 permanent departmental posts will begin to be phased in. These posts will be advertised and will only be accessible by teachers and students already in possession of the B Ed (FP). Practitioners with ECD Level 4 & 5 are currently doing the Diploma in-service or improving their school leaving qualification in order to gain access to the B Ed via distance learning, as well as to remain in the Grade R domain, albeit as contract post holders. Teachers with ECD Level 4 and 5 qualifications are set to be excluded from the Grade R domain in future. The B Ed (FP) has, therefore, in effect been designated by the education department as the definitive Grade R teachers' qualification. This is where the analysis of pre-service Grade R teacher training is likely to be focused in the near future.

In the meantime, most Grade R teachers are Grade R Practitioners with ECD Level 4 and 5 qualifications, who can potentially access the Level 6 Diploma and the Level 7 Degree via in-service training and distance learning, involving collaboration between academic institutions and education departments. This also applies to the teachers in the case study.

The pertinent issue in this study is whether or not SCK of VPS, as an essential Grade R focus, has been mastered by the teachers in the case study for competent visual training for pre-reading. Therefore, to set the scene for the case study, it is necessary to provide a brief synopsis of SCK of VPS, as well as a document analysis of the curriculum content knowledge which frames it.

## Grade R subject content knowledge

This article features a study which describes Grade R teachers' SCK of VPS in a rural school in the Western Cape, with reference to CAPS.

The idea of using SCK as a focal point for analysis has arisen from the need to establish a usable knowledge base with teachers. SCK is closely linked to pedagogy or Pedagogical Content Knowledge (PCK) (Snow, Griffin & Burns 2005:2011) and is important for sustaining pedagogy:

We might expect some short-term efficiencies to be generated by improvements in pedagogy. However, any such gains are likely to reach a low ceiling unless a great deal more attention is paid to teacher subject knowledge resources at the same time ... (Taylor 2013:30)

Furthermore, in pre and in-service professional development, CAPS is a key source of SCK. Therefore, when literacy and numeracy interventions are conducted, CAPS and SCK must dynamically interact with each other, as well as PCK and eventually, teaching practice. Taylor (2013:65) makes these connections whilst observing that the Western Cape Education Department's (WCED) Literacy Numeracy Intervention (*LitNum* or LNI) has 'prioritized teacher subject knowledge as the key to more effective delivery of the curriculum'. He continues:

The premise of this focus seems to be that teachers cannot teach what they do not understand very well, and that once they have this understanding, they will be better able to make sense of the *curriculum*, make better *pedagogical* choices, and consequently be more effective orchestrators of *classroom behaviour*. (Taylor 2013:65)

The study was not only confined to SCK to facilitate manageability of the data. It was also narrowed as a result of the highly specialised nature of Grade R teacher SCK stemming from the developmental phase being dealt with. Grade R education feeds vitally into a critical developmental continuum that straddles a gulf between an absence of structured pre-schooling and formal reading instruction from early in Grade 1.

These teachers have to consolidate a wide range of developmental skills differing from learner to learner over a two-year span in their lives. Although Grade R learners are aged 4½ to 6½, they are usually spoken of as *five to six year olds*. Even though early development according to age-categories is uneven and individualised (Wood 2007:13), this two-year period is critical for the development of VPS. Therefore, as a critical element of their SCK, Grade R teachers

need to know how the VPS work, from their most concrete, elementary aspects to their most advanced abstract aspects.

## Visual perceptual skills

*Visual Perception is the mind's ability to interpret or give meaning to what is seen with the eyes* (WCED 2006). VPS must be learned by all sighted children prior to learning to read. It is not enough for the eyes to send the correct images produced by the retina at the back of the eye, to the brain. The brain must make sense of those images. For example, the retina sends an inverted picture of an ice-cream cone to the brain, and the child knows what it is. But when that child sees the words 'ice cream cone', then the retina will send the image of the words as code which has to be correctly decoded to give meaning, to represent an ice-cream cone. The mind must receive visual training in a range of VPS to learn how to decode these words and phrases. All the visual aspects of the words, such as their overall shape and the patterned sequence of their letters need to be correctly perceived, and connected to what the mind has previously processed, in order to produce meaning.

Individual VPS work in unison. An overview of what they are and what they do reveals their interdependence (Children's Vision Coalition n.d.; Gardner 1996; Kavale 1982; The Learning Centre Foundation n.d.; WCED 2006; WCED & CAMI Education 2009; WCED Provincial Literacy Committee 2005):

**Visual discrimination:** is the ability to see details that make one object or symbol different from another. For Grade 1 learners to differentiate between 'j' and 'i', 'come' and 'came', in Grade R they must have sorted objects according to shape, colour and size, identified the odd picture in a sequence and played matching games.

**Visual memory:** is the ability to remember exactly what something looks like even though it is not in front of you. For Grade 1 learners to write out a non-phonetic word from memory, for example, 'they', 'put', 'you', in Grade R they must have answered questions about pictured items, objects or words after they had been removed, and have named and redrawn them.

**Visual spatial relationships:** is the ability to see that a symbol placed in a different position in fact becomes a different symbol. Grade 1 learners need to understand that when they invert the symbol 'u', a different symbol appears, for example 'n', and if they reverse 'b', 'd' appears. For this to occur, in Grade R they must have compared a symbol made up of two shapes or letters attached to each other in a specific way, with two other symbols, one with the same shapes or letters attached differently, the other with the same shapes or letters but turned to appear different. They must be able to turn the latter symbol back in their minds to identify it.

**Visual form constancy:** is the ability to identify a written symbol when it has been written in a different way. For Grade 1 learners to be able to read and identify written symbols

whether or not they are in printed or handwritten forms, in Grade R they must have matched printed and handwritten letters on a page by drawing a line between them, or copied printed letters and discussed that they do not need to look exactly the same.

**Visual sequential memory:** is the ability to see the order of letters or digits or objects. For Grade 1 learners to correctly see that the order of letters in 'was' is different from the order of letters in 'saw', in Grade R they have to have placed different objects in a specific order to make a pattern and copied a specific sequence of coloured beads threaded onto a string.

**Visual figure ground:** is the ability to differentiate between foreground and background. For Grade 1 learners to correctly copy a word without being distracted by the other words around it or to read without leaving out words or skipping lines, in Grade R they must have pointed out specific objects in a picture and coloured overlapping picture objects.

**Visual closure:** is the ability to successfully identify a word, letter or number when a part of it is missing. For Grade 1 learners to read in chunks, filling in the details for themselves instead of reading letter by letter, in Grade R they must have compared a picture of a complete object with four other fragments of objects, one of which is a fragment of the complete object. Then they must have matched the correct fragment with the object. They should be able to repeat the exercise comparing word fragments with a complete word.

**Visual form perception:** is the ability to see the difference between forms or shapes of words. For Grade 1 learners to differentiate between 'where' and 'were', even though both begin with 'w' and end with 'ere', in Grade R they must have compared a picture of a shape or word with four other shapes or words, three of which are similar and one of which is identical. They must have been able to match the correct shapes or words (WCED 2006).

These descriptions of VPS indicate that the Grade R teacher does not deal with early reading applications of VPS, which are dealt with by the Grade 1 teacher. Instead, the Grade R teacher must have quality SCK of VPS to be able to design and do the elementary visual training which enables the Grade R learner to activate VPS in his mind. The teacher must use tasks and activities which scaffold visual perception from concrete to semi-concrete to abstract learning levels to engage the learner in progressive pre-reading.

The aim of the research is as follows: to assess the SCK of VPS of the teachers in the case study in relation to their level of pre- and in service training as well as to their potential curriculum content knowledge. The overall research question addressed by the documentary analysis and case study below is: Are the Grade R teachers in the case study adequately trained to impart VPS for pre-reading?

Both the level of training as well as the delivered curriculum should provide a critical framework of SCK for imparting these VPS to Grade R learners. Therefore, a documentary analysis of CAPS is a necessary preliminary to the case study.

## CAPS curriculum

In 2011 the Department of Basic Education (DBE) produced a Grade R CAPS curriculum and provided in-service teacher training before implementing it in 2012. Role players believe that in fusing the behaviouristic National Christian Education (NCE) curriculum with the constructivist Outcomes Based Education (OBE) curriculum, CAPS represents a material improvement of these. How Grade R CAPS could improve Grade R teaching is closely linked to how well Grade R teachers can be trained to use it.

The question is: How serviceable is CAPS as a primary in- and pre- service training source for SCK of VPS? The basic set of documents for use by Grade R teachers in the Western Cape is the *CAPS Resource File 2012 for Grade R*, in which the national documents have been collected by the WCED (WCED 2012a). This file was analysed with a view to addressing the following considerations:

1. How clearly and comprehensively is SCK of VPS explained in the documents?
2. What SCK of VPS do the documents provide for teaching and assessing visual training towards early reading?
3. What SCK of VPS does the teacher still need to acquire, in order to effectively use the curriculum for visual training?

Three key publications within the *CAPS Resource File 2012 for Grade R* (WCED 2012a), as listed below, were analysed to deal with these considerations. This qualitative documentary analysis was made by recording and listing: explicit references to the prominent VPS featured above; and references to concepts or learning activities directly or indirectly related to VPS.

This analysis revealed the following: Firstly, in the *Training Manual* (WCED 2012a) teachers are briefed on the progression from concrete to semi-concrete and abstract levels of learning by providing examples of each. The Emergent Literacy module covers early reading categories such as copying letters, reading pictures, engagement with rich text environments, verbal or vocabulary ability, curiosity about words and letters and phonological awareness. It does not reference pre-reading categories, such as visual training in specific VPS and the role played by cognitive skills. It also does not cover the need for progression from one set of competencies to another according to the levels of learning it summarises. The discussion of the Balanced Language (BL) approach also does not clearly reference any pre- to early reading progression, even though scaffolding is mentioned. The *Training Manual* is valuable as an overview and orientation but it does not provide a substantial or detailed SCK framework for VPS and visual training.

Secondly, in the *NCS Requirements for English Home Language* (WCED 2012a), the VPS and visual training concepts are comprehensively covered by learning activities such as: identifying similarities and differences; matching pictures and words; using memory to recall letters; recognising objects in pictures or concrete formats; solving puzzles; forming letters; sequencing and copying; and distinguishing between shapes of different letters and words. But none of these activities are explicitly identified as imparting VPS or representing visual training. There is no mention or description of visual perception, the prominent VPS profiled in this study, or of visual training in general. As a result, the Grade R teachers are likely to teach and assess visual training incidentally, and are likely to leave gaps.

Thirdly, the *NCS for English Mathematics* (WCED 2012a) contains clearer VPS and visual training categories, and a more substantial collection of concrete activities using suitable apparatus such as flash cards (pictures, dots, number symbols and names), counters, measuring devices, card games (Uno, Rummicub and Snap) and board games (Ludo, Snakes & Ladders). However, SCK should not simply cover detailed learning activities; it also involves the synthesis of knowledge needed to design teaching and assessment strategies that provide learning activities with well-defined outcomes. Grade R training must enable teachers to set up their own learning programmes according to the new curriculum, not merely superimpose the given learning programme onto their classroom context. The challenge is that more in-depth pre- and in-service training in the use of the curriculum itself is needed, and not in-depth merely in the sense of being able to apply the detailed learning activities in the *NCS for English Mathematics*. The training must also be in-depth in terms of being able to *understand* the theoretical and conceptual design of the activities contained in these documents, and even to be able to *modify* and *redesign* them within the same curriculum framework for different instructional contexts. The visual training requirements of the NCS for English Mathematics suggest that this finding is relevant to early numeracy as well.

The findings of the analysis of the *CAPS Resource File 2012 for Grade R* raise concerns about the level of explicit SCK of VPS in the document for visual training towards early reading. Too little explicit VPS conceptual language is found in CAPS, and too much must still be imported into CAPS, in order for anyone but the most highly trained Grade R teacher to consciously use CAPS for outcome-directed pre-reading visual training. This not only applies to the language of specific skills concepts but also the language of the three general English Home Language (HL) categories in the NCS requirements, namely: Listening and Speaking; Emergent Reading (includes Word and Sentence-level work, Phonics, Shared Reading and Independent Reading); Emergent Writing (includes Handwriting) (WCED 2012a). These are mainly Grade 1 and not Grade R categories.

The desirability of closer curricular-training alignment in quality pre- and in-service Grade R professional development is illustrated in the case study which follows.

## Case study

The case study, on which this article reports, analysed Grade R SCK of VPS with regard to CAPS in a rural Western Cape public school with four Grade R classes. Data were collected from a qualitative questionnaire followed by a focus-group discussion, leading to an analysis of the discourse. The aim was to establish what kind of pre- and in-service professional development would benefit these teachers, especially regarding SCK of VPS.

The case-study site is also significant as a WCED departmental-circuit 'focus school'. Since 2011, systemic monitoring of Grade R teachers has been formalised in the WCED. ECD Educational Specialists have been appointed, one per District Office, to support Grade R teachers across the circuits. They are allocated to approximately five designated focus schools in each circuit, which require the most support, based on unsatisfactory Grade 1 results. The four teachers in the case study were dedicated workers. Relatively low Foundation Phase (FP) results in focus schools are not automatically indicative of teacher incompetence or of gaps in curriculum delivery. Instead, they suggest a range of contextual factors which affect early reading achievement, such as the cognitive, linguistic, social and emotional backlogs documented in interventions by remedial teachers, Learning Support Advisors (LSAs) and educational psychologists. Nevertheless, professional development can counteract deficiencies in curricula and learning environments. This is an accepted motivational narrative which drives in-service training and teacher-directed interventions.

Teachers and the principal were briefed on the nature and scope of the research, and signed consent forms before receiving the questionnaires to complete on their own. A week later the teachers had their completed questionnaires in front of them during the focus-group discussion.

The discussion began by exploring what SCK of VPS the teachers had obtained from two years' pre-service training at an FET college, that is, ECD Levels 4 & 5. The teachers spoke about VPS in terms of understanding different learning styles (such as visual and kinaesthetic learning), as opposed to specific VPS. Overall, the pre-service training was considered valuable by the educators in the sample. However, the lack of explicit VPS content can potentially result in insufficient SCK of VPS required to implement effective, outcome-directed visual training. Such training must impart recognised VPS concepts in a flow from concrete to semi-concrete and eventually to abstract learning. Such a flow is needed to scaffold a learner's progress from pre-reading to early reading competencies. For example, suppose the learner has to practice visual sequential memory. Three blocks in moulded plastic or carved wood representing letters are set out in the sequence: 's', 'a' and 'w'. To copy

the sequence at first, the learner will need to draw on as many senses as possible to identify, select, feel, and place new blocks in the same sequence. Eventually the learner can move from this concrete, 3-D visual training activity to a similar one on paper or laminated board with loose, cut-out letters. This 2-D, semi-concrete format requires less sensory but more cognitive work. The learner is 'reading' the letters sequenced to spell 'saw', progressing from pre-alphabetic to partial-alphabetic reading. Now the learner will begin to remember the order of 'saw', with the aid of phonics, sight-word learning, and related techniques, particularly in Grade 1.

For the Grade R teacher to be able to do the required visual training on a concrete learning level, establishing each VPS as a decoding tool, she needs critical training which can establish a thorough working knowledge of VPS. The Grade R teacher stands at the recognised threshold for the emergence and radical development from the age of 5 years onwards of key VPS such as visual form constancy, visual figure ground and visual spatial relationships (Schneck 2005:419).

The accurate definitions of VPS that the teachers articulated, were obtained from limited in-service training, and included discussing the use of 2- and 3-D apparatus to move learning from concrete to semi-concrete levels of learning. This knowledge enabled the teachers to teach visual training which imparted *visual discrimination*, *visual form constancy*, *visual form perception* and *visual sequential memory* to learners. These four VPS represent *half* of the VPS profiled above. This SCK of VPS was imparted through more random, incidental learning, as:

1. This SCK of VPS was not necessarily covered in the pre-service training.
2. The teachers recalled a limited range of VPS concepts because of the brief nature of the in-service training insert.
3. The teachers, working in a departmental-circuit focus school, are more accessible than other teachers, to LSAs and other educational specialists who may or may not impart SCK of VPS.

If too much SCK acquisition is left to incidental learning, it may become piecemeal, leaving important gaps in content. This was the case in the sample, where the four *other* VPS profiled in the study were not deliberately imparted. More systematic, comprehensive forms of knowledge acquisition are needed to provide the framework within which new or incidental knowledge can be included.

The value of CAPS for SCK of VPS, as understood by the Grade R teachers, was its ability to direct and integrate learning from concrete to semi-concrete levels of learning. For them, the concrete learning activities laid a suitable foundation for the actual early reading tasks that their learners began to perform, such as recognising, naming and writing letters. However, in the Grade R CAPS curriculum, discussed above, learning from concrete to semi-concrete levels was also not comprehensively and explicitly applied

to specific VPS. When the group was asked, 'Is there specific wording which refers to VPS?' one member replied: 'No, there aren't. It is not written like that in the book. They will only refer, for example, to visual arts'.

## Conclusions

The preceding case study presented the challenge of training Grade R teachers to have better SCK of VPS for visual training and pre-reading. It is unclear whether or not the low visual discrimination and visual figure ground results, in the 2012 case-study site, are related to SCK, contextual issues, or systemic-curricular issues. Gaps may have originated in the teacher training or in the curriculum. These areas should be addressed simultaneously as they interact. Much learning is incidental, but incidental teaching only works if it is embedded in a rich knowledge base which enables teachers to cover all the VPS highlighted. This SCK of VPS should be given more prominence in the design of NQF Level 5 pre-service training, in view of the current reality that the bulk of incoming Grade R teachers are Grade R *Practitioners* with Level 4 and 5 qualifications. However, as Level 5 training will no longer provide access to Grade R in future, research needs to be shifted to Level 6 and 7 training. A study with documentary analyses of the *B Ed (FP) (NQF Level 7)* and the *Diploma in Grade R Teaching (NQF Level 6)* course-content would be required to examine the quality of these courses' SCK of VPS content within their Grade R specialist components.

The case-study discourse also revealed that the teachers' imparting of VPS, via the Grade R CAPS curriculum, from concrete to semi-concrete levels of learning, was imparted incidentally. The challenge is that this multilevel learning must be comprehensively and explicitly applied to imparting all the specific VPS during the process of visual training and pre-reading. Ideally, such training would need to lead the Grade R teachers beyond the theoretical SCK of VPS to PCK that knows which visual training strategies will work, to the practical teacher competence which knows how to deploy those strategies.

The *analysis of the Grade R CAPS curriculum* itself, in the form of the *CAPS Resource File 2012 for Grade R*, revealed that too little explicit VPS content comes out of CAPS, and too much must still go into CAPS. Within CAPS, the category of VPS can be named *visual skills* and more explicitly included as a subset of the 'Emergent Reading' component of the English Home Language subject, as it is significant enough as a stand-alone category of language-acquisition. It is indispensable for meaning-making during pre- and early reading. Such an insertion into the curriculum must be explicit and comprehensive if the Grade R teacher is going to be deliberate about imparting it. Grade R teachers would then be able to design visual training activities under a category in which all the VPS profiled in this article would be imparted effectively.

In the South African context, the curriculum itself is required to be a training resource. A vital matter that has arisen

from the analysis is the issue of exactly how much of CAPS is covered in pre-service training. To what extent has the recent implementation of CAPS resulted in the revision of aspects of pre-service training? These issues lie outside the immediate focus of this article, but the challenge is to ensure that curricular-training alignment is deliberately pursued as a matter of collaboration between academic institutions and the relevant education departments. The study of SCK of VPS in Level 6 and 7 teacher training referred to above could be broadened to include an analysis of CAPS curricular content in the same.

In the *overview of the professional development landscape*, this article has sought to discuss levels of and access to pre- and in-service training which involve the curriculum and accredited courses' modules. A model of professional development must be progressive in promoting Grade R teachers' progress through the institutions of education (Snow *et al.* 2005:205). There needs to be a clear and achievable pathway by which hard-working and diligently studying Grade R teachers can access the gazetted requirement of a National Diploma or Bachelor degree by means of pre-and in service training. If the Grade R teachers are credited for it, they will be motivated to benefit optimally from all training opportunities that give them sustained progress along an accreditation continuum.

In the WCED, EWP5 (Department of Education 2001a) dealing with ECD is critically important. In 2012 the Chief Education Specialist for ECD identified its implementation as the Grade R priority for 2013 and 2014, particularly regarding compulsory Grade R-curricular resourcing for quality Grade R teaching and the upgrading of the qualifications of Grade R Practitioners (WCED 2012b:1-4). However, roll-out of compulsory Grade R programmes would only be constructive in tandem with suitably trained and paid teachers developed by academic-government partnerships.

One aspect of such *academic-government partnerships* currently exists, in the form of part-time Level 6 in-service training of Grade R teachers with both academic accreditation and departmental approval. This is a recognition that the in-service training provided by departmental education specialists needs to be supplemented, as does Level 5 pre-service training. These Grade R teachers are sponsored via a WCED learnership programme which also includes funding from the National Skills Fund (NSF) and a private bank. The point is that such collaboration produces workable training solutions. Even more could be accomplished by the work of a collaborative training-design team at provincial or national level. Such a Grade R field-specific team would be in a position to more effectively reconfigure training models; and to infuse them with suitable curricular content, beginning with more SCK of VPS content, as well as visual training design content. At present, much CAPS content enters training streams via private companies and NGOs acting as intermediaries between training institutions and the provincial education departments. A Grade R field-specific team can potentially incorporate the role of the

intermediaries. Such a team would also need to be competent in matters like Grade R policy development, in order to create policies which represent both academic and government interests. An advantage of such a partnership is that it could promote future agreements between the Department of Basic Education (DBE), Department of Higher education and Training (DHET) and academic institutions around Grade R teacher training nationally. Nevertheless, partnerships do not cohere unless they have a common focal point of interest. Therefore, the applied VPS category within CAPS for Grade R, possibly named *visual skills*, can be used by a collaborative training-design team to bring CAPS more strongly into a role as a transferrable resource for pre- and in-service training.

The partnerships are essential because even with private sector involvement, neither set of institutions has the human or financial capital resources to conduct the training job properly on its own. For example, in the Cape Winelands District (CWD), the coverage by the single ECD educational specialist is as follows: The CWD has eight circuits, comprising approximately 35 schools with Grade R sites in each; at least once per term the educational specialist visits only the focus school sites; this works out to about one in seven of all the Grade R sites in the CWD. The Curriculum Advisers (CAs) and LSAs support the remainder of the Grade R sites. The frequency of these general purpose support visits is also once per term on average. With such sparse coverage, it is difficult to sustain effective in-service training for all the Grade R sites.

*A model of professional development* must not only be progressive in promoting Grade R teachers' progress through the institutions of education. It must also be progressive in empowering Grade R teachers to mature as experts. Aspects of such a model must be progressive in the sense that they seek to follow best teacher training practices, which propel a Grade R teacher towards maturity, competence and expertise. Best practices become distinctive when enough data, ratifying their effectiveness, are collected through research shared at a district, provincial, national or international level. Furthermore, best practices review applied principles that work on a more universal level and then preview the application of those principles on localised, contextual levels. It would be presumptuous to proceed directly with application, without taking a good look at what is already being implemented locally. If what is being implemented locally is successful, they will confirm, or may even modify and improve the practices. If what is being implemented locally is less successful, they may be modified and improved by the practices. Therefore, an improvement is possible both universally and locally, whereas no improvement whatsoever is less likely. This two-way change dynamic is what makes a model of professional development, which follows best practices, a progressive model.

Best practices not only need localised contexts of application, but also specific knowledge frameworks for application. Therefore, SCK in VPS has been identified as a key element of Grade R training-design which, when addressed, may draw

in other important training elements (auditory, cognitive, emotional, social, cognitive and physical development) and subjects (Mathematics, Life Skills).

Given the limitations of personnel and Grade R infrastructure, academic-government partnerships would first have to find consensus around a set of best practices which can form the basis for a suitable and progressive model of professional development. Aspects of such a model are illustrated by the recommendations made below.

## Recommendations towards a model of professional development of Grade R teachers

What follows are nine suggested and illustrative applications of *best practices principles*. These are applied to the pre- and in-service professional development of Grade R teachers, with specific reference to SCK of VPS, represented by exploration questions in parentheses which can be used by the teachers. These principles would work most effectively within the context of academic-government partnerships:

1. The practice of *addressing prior knowledge to stimulate new knowledge* can involve pre-service bridging training which recognises prior learning; and in-service revision of established expertise. (List and define the VPS you already know. Then describe how you would use specific apparatus to impart them.)
2. *Developing the skills required for continuous learning* can involve pre-service modules in lifelong learning and research methods; and in-service workshops in adaptation and reflection. (Conduct research in your class to establish which two VPS are the most challenging. Reflect on the possible causes of challenge and design an alternative visual training activity for each.)
3. The *development of a comprehensive and usable knowledge base* can involve pre-service balance between Grade R specialist and general education subjects; and in-service school-departmental coverage of subject and curriculum-content knowledge over an extended period. (Choose one VPS you consider critically important. Explain its use for mathematics, life skills and cognition. Design your own flowchart in which you relate your own SCK, PCK, curriculum content knowledge and practical teacher competence to one another.)
4. *Application and contextualisation within internships or mentorships* can involve holistic pre-service assessment of the Grade R practical internship; and in-service school-based or regional mentorship networks involving Grade R heads, Grade R lead teachers, ECD educational specialists and academic specialists. (Design a mentorship model and assign a specific role for yourself. Visit a Grade R class in a completely different social and community context to your own. Ask the incumbent teacher which VP skill is most challenging, find out why and formulate an intervention in partnership with him or her. Then let the other teacher return the visit.)
5. *Articulation of and integration between subject knowledge and pedagogy* can involve pre-service assessment of application of VP subject knowledge to appropriate, scaffolded visual training activities; and in-service school or circuit-wide lesson and resource preparation workshops. (Formulate how to impart a specific VP skill in respective concrete, semi-concrete and abstract learning levels. Prepare a demonstration for other Grade R teachers, which includes not only the selection of apparatus for the levels but also how to make them.)
6. *Extended practical application* as opposed to dabbling in eclectic topics can involve pre-service running of teaching practice or pedagogy concurrently with other course modules, and in-service departmental workshops to cover the practical application of specific curricular requirements over an extended 2–3 year period. (Share your own system that you use to assess VPS via direct observation. Also observe a colleague's system, see what appeals to you and modify yours if necessary.)
7. *Contextualised rather than generic approaches* can involve pre-service modules in socio-cultural, ECD and learning barriers, contextualisation and differentiation; and in-service school-based diagnostic assessment and community based cross-sectional studies which inform teaching practice. (Create a checklist of symptoms you encounter in your class, which you can use to identify the learning and 'reading' barriers related to VPS. In a column alongside, infer the contextual causes of those barriers.)
8. *Analysis of shared best teaching practices* can involve a pre-service literature review of research covering best Grade R teaching practices worldwide; and in-service development and regular application of a best Grade R teaching practices checklist. (Google and choose a developing country, on your own continent, where visual training, of 5–6 year-old learners, appears to be working. Establish why and see if what is implemented there can be reapplied in your class. Compose your own best practices checklist.)
9. *Lead teachers demonstrating the balancing of personal growth trajectories with school improvement plans* can include direct involvement of lead teachers in pre-service training modules and accreditation. This can also include in-service use of an Integrated Quality Management System (IQMS) customised for Grade R, as a template for linking a Grade R teacher's personal growth plan with the Grade R section's improvement plan. (Judge whether or not there is any conflict of interest between your personal goals and those of your school or department. Decide how a solution can be negotiated which may require compromise but will result in win-win for both parties. Visualise and rationalise how good visual training will make the rest of your teaching job easier.)

In summary, the general recommendation is that a progressive, nationally accredited model of professional development of Grade R teachers can be:

1. Confirmed by academic-governmental role players.
2. Presented to all Grade R teachers as a way forward from whichever context they find themselves.
3. Localised at classroom level by means of a pilot project focused on addressing a particular developmental issue such as SCK of VPS and visual training-design.
4. Designed to follow best practices involving relevant role players (teachers, lead teachers, HOD's, Grade R specialists and teacher-trainers) and locally situated methods: coaching; mentoring; lecturing on-site, off-site, or online.

South African children younger than five years of age, should be everybody's concern, as should the seven-year-old children 'entering' the school system. But the children, five and six-years of age, must not be overlooked, nor must the Grade R teachers trained to prepare them to read, write and calculate. The threat remains that the window of opportunity to give learners a firm foundation may still fall through the cracks of sweeping developmental programs, in spite of good intentions of phased national roll-out. *Grade R professional development* and *visual perceptual skills* must become more than ephemeral buzz words. They must simply represent the five-year-old South African child next door being able to make sense of what is seen with the eyes, so that the way forward into the reading world is not a stumble down but a step up, with a steady hand-up from a competent Grade R teacher.

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## Authors' contributions

C.A. (Western Cape Education Department) was the main author. A.H. (Cape Peninsula University of Technology) and A.S. (Cape Peninsula University of Technology) were supervising authors.

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