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South African Journal of Childhood Education

Volume 1 Number 2

The South African Journal of Childhood Education is a new journal that publishes refereed research articles. It is housed by the University of Johannesburg Institute of Childhood Education (UJICE), Faculty of Education, University of Johannesburg. Print ISSN: 2223-7674. Online ISSN: 2223-7682.

Aims and Scope:
The South African Journal of Childhood Education (SAJCE) provides a forum for the dissemination of research in childhood education and development. SAJCE is interdisciplinary in scope and seeks to stimulate the exchange of ideas and current issues about research and practices in a variety of educational settings.

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Referencing Style
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Annual ECD Magazine Supplement
The ApexHi foundation sponsors an annual supplement on early childhood development and education.

Author Copies
Authors of articles will receive a copy of the journal in which their article appears.
South African Journal of Childhood Education
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2006

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Subscription form is included at the back of this journal
South African Research Association for Early Childhood Education (SARAECE)

The Early Childhood Education (ECE) field is currently disempowered by its fragmentation into smaller interest groups without a unified voice or vision. An inclusive association with a strong research base and focus was identified as a need to represent the field in a purposeful manner.

The first international ECE conference took place from 1-3 February 2011, and was hosted by the subject group Foundation Phase, Faculty Education Sciences from the North-West University, Potchefstroom. The intention of the conference was to bring people in the field of ECE together and to establish an association for research training and development. Dr Green and Dr Parker of the Department of Higher Education and Training (DHET) attended a session. There was a general support for the establishment of such an association, and it was proposed that the DHET call a workshop meeting to which a representative from each of the universities involved in teacher training would be invited. A meeting was called by the DHET for 20 universities and 16 representatives from education faculties in South Africa attended the meeting on 11 May 2011 in Johannesburg. The idea to establish a research association for the ECE sector was again unanimously and strongly supported.

A proposal by a task team recommended the establishment of the South African Research Association for Early Childhood Education (SARAECE) for young children (0-9) in South Africa. The association seeks to be a leading voice for ECE invested in improving the well-being, early education and developmental potential for all children from birth to grade 3. The association would serve as a catalyst for research, programme and materials development. The association intends to provide a platform that supports knowledge creation in ECE and is committed to becoming an inclusive, collective and critical voice for the ECE field.
The key activities of the SARAECE will include the following:

1. Research in the ECE field.
2. Collaboration between members and with both local and international bodies and individuals involved in SARAECE.
3. Advocacy of the specific intent and projects of the SARAECE.
4. Informing practice through support and involvement of both pre- and in-service educators as well as staff of colleges and universities involved in the training and education of ECE practitioners and teachers.
5. Being responsible for implementing directives from its constituency such as the hosting of conferences and/or initiating projects to advance its causes.
6. Supporting the *South African Journal of Childhood Education (SAJCE)* with the specific intent of promoting research in both the academic and professional fields of SARAECE.
7. Encourage and initiate the design and distribution of publications with parent information pieces.
8. Encourage cascading of the association to provinces.

Membership of the association will be open to any institution and/or person who have an interest and agency to promote ECE through research and subscribing to the aims of the association as described above.

The members of the steering committee are:
Dr Ona Janse van Rensburg (President, NWU)
Prof. Hasina Ebrahim (Vice President, UFS)
Dr Ursula Hoadley (CPUT)
Prof. Jean Baxen (Rhodes)
Ms Lorayne Excell (Wits)
Ms Nici Rousseau (CPUT)
Ms Robin Notshulwana (Secretary, NMMU)
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Dr Seenie Naidu (UNISA)
Dr T. Mbatha (KZN)
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Editorial

In this issue of the South African Journal of Childhood Education, the leading article by Catherine Snow reflects the current movement in childhood education research and practice. With the founding of the South African Research Association for Early Childhood Education (SARAECE), we enter a new phase in the research brief of practitioners and researchers; no one body of knowledge or of practice can address the need we have for knowledge regarding how children learn optimally and how best the adults around them can make sure that they do.

So, when Snow argues that we need interlocutors and scaffolders, she also argues that practice and research need to come together to inform and educate reciprocally. In a recent article in the weekly newspaper, The Mail and Guardian, I wrote about the encouraging way in which academics from over the country are standing together to find out what happens on the ground and in the trenches of childhood education and I made a plea for a zero tolerance attitude to the important status of Foundation Phase teachers. I wish to extend that plea in this issue for a similar stance towards the professional and community status of all practitioners who work with children. In the words of Catherine Snow, we need to learn with each other and distribute our cognitions.

This issue is evidence of how much dedicated research is happening, and without commenting on the work, one can see, at a glance, that childhood education is claiming its rightful place as a very important field of inquiry. The foundations for conceptual development are laid in these early years of schooling. Our future astrophysicists, who can populate the Square Kilometre Array telescope for which we are bidding so fervently, the social scientists who can find ways of healing our social fabric, the medical researchers who can find ways for HIV to be stalled in its destructive path, and the educational scholars who can find ways to best use our languages of teaching – all of them may be sitting in the very classes we are teaching the three Rs now.

The editorial board of this journal wishes to thank the authors who have donated their intellectual work to SAJCE before the journal has been accredited. I invite all readers and authors to look back in five years, when the journal will have been fully established and when it will be flourishing, to look back at the content lists of the first two issues and to salute the first authors for their generous work. Next year we should be accredited by the DHET and then we can only go from this strength to more strength.

Best wishes
Elbie Henning (Editor)
The unavoidable need for distributed cognition in teaching literacy

Abstract
Certain tasks are more likely to be solved by groups than by individuals, even when the individuals are highly skilled at aspects of the task. These are tasks such as filling out income tax forms or performing surgical operations, for which inputs from several individuals who have complementary domains of knowledge and skill are needed. I refer to such tasks as those that require ‘distributed cognition’, and argue that teaching children to read is a prime example of such a task. Teaching children to read requires distributed cognition because so much knowledge about language, about pedagogy, about child development, and about literacy development is needed to do it well. Expecting that individuals acquire all that knowledge in a relatively brief pre-service teacher education programme is unrealistic. I suggest that a model in which teachers work in teams, or in which novice teachers can call on experts for advice, would serve both students and teachers better. Such a model presupposes a career trajectory for teachers, in which greater experience and knowledge generates greater responsibility and higher status. We need to replace the apprenticeship of personal experience with professional learning communities that can nurture the development of every novice teacher. Teaching literacy also requires unlearning a long list of commonsense beliefs that are incorrect and that can disrupt optimal teaching. I suggest that, while stereotypes and group-based expectations are very difficult to eliminate, behaviours based on those beliefs can be changed – and are more likely to be modified if work is undertaken collaboratively. Finally, distributed cognition is needed to compensate for the many difficult conditions under which teaching goes on. Overlarge classes, inadequate materials, poorly designed curricula, unsupportive school leaders, and many other challenges are faced regularly by teachers. Teachers should not be in the position of facing these challenges alone. In this article, I sketch out the kinds of knowledge that are required in teaching literacy, the kinds of widespread and common sense beliefs that need to be overcome in order to serve all children well, and the challenges to effective individual functioning that distributed cognition can help us address.

Keywords: reading, literacy, diversity, teacher preparation, teacher expertise
There is considerable evidence from studies of business administration and institutional leadership that certain tasks are more likely to be solved by groups than by individuals, even when the individuals are highly skilled at aspects of the task. These are tasks for which ‘distributed cognition’ is necessary – inputs from several individuals who have complementary domains of knowledge and skill. Everyday examples of distributed cognition include filling out one’s tax returns, a task for which the taxpayer has one crucial component of the information needed (records of income, of business expenses, of outlays of various sorts) and the tax accountant has other components (which expenses are deductible, what is the most favourable way to calculate them, where to put the information onto the tax form). Another example of distributed cognition might be finding one’s mislaid keys. There is no expert in this scenario – or rather the only expert (the person who mislaid the keys) is unable to deploy his expertise. How does someone else help in this circumstance? Typically by offering guiding questions or mechanisms, e.g. “When did you last see them? Did you check your overcoat pocket? Try retracing your steps.” Here, distributed cognition joins the control of processing of the interlocutor with the covert knowledge of the key-owner to solve the problem. Many processes in daily life reveal the value of distributed cognition – comprehending difficult texts, deciding how to organise a pantry, plotting a route to a destination, and so on. In this essay, I argue that distributed cognition offers a solution to many problems in the field of teaching, particularly though not exclusively the teaching of reading. I also acknowledge that optimal use of distributed cognition will require changes in teacher preparation, teacher support, and the organisation of schools.

Why do I argue that distributed cognition is particularly relevant to teaching literacy? Teaching children to read is, in short, extremely difficult – in part because it requires access to a very large amount of knowledge about language, about reading, and about teaching practices and procedures. In addition, teaching literacy requires unlearning a long list of commonsense beliefs that are incorrect and that can disrupt optimal teaching. Finally, distributed cognition is needed to compensate for the many difficult conditions under which teaching goes on. In this article, I sketch out the kinds of knowledge that are required in teaching literacy, the kinds of beliefs that need to be overcome, and the challenges to effective individual functioning that distributed cognition can help us address.

So much to teach

Various documents produced over the last twenty years or so have specified the complexity of learning to read, and thus the many different points at which children might encounter difficulty. Some of these documents have produced lists of opportunities children need if they are to learn to read. For example, Preventing Reading Difficulties in Young Children, a USA National Research Council report (Snow, Burns & Griffin, 1998) identified five opportunities to learn to which every child should have access:

- To become familiar with the forms and uses of written language;
• To develop the language and meta-cognitive skills required for reading comprehension success at every point in literacy development;

• To grasp how the words of the language are structured and are represented in print by the letters of the alphabet and then practice those relationships to a point of automaticity;

• To become enthusiastic about learning to read and write; and

• If at risk of reading failure, to be noticed early and to be offered enriched experiences and intensified instruction in school.

In a subsequent volume, a subset of the committee that produced Preventing Reading Difficulties tried to extrapolate from these five child opportunities to formulate five desirable teacher opportunities to learn. That subsequent report, called Preparing Our Teachers (Strickland, Snow, Griffin, Burns, & McNamara, 2002) similarly addressed five topics, but now by outlining what pre-service and in-service teachers should be learning in order to ensure that their students have access to the five opportunities listed above. The five chapters of Preparing Our Teachers, each of which addresses learning to support one of the opportunities, were entitled:

• From shopping lists to poetry: forms and function of written language

• Making meaning: language development and comprehension

• Sounds, letters, and words: How print works

• Moving to success: Motivating children to read

• Anticipating challenges: Assessment, prevention, and intervention

Of course, these lists only hint at the many specific capacities that primary grade teachers might be expected to have. The report of the USA National Reading Panel (NICHD, 2000) identified five pedagogical practices that should be part of a comprehensive reading instructional programme – thus implying that teachers also need to control specific curricular and pedagogical approaches associated with effective instruction in phonological awareness, systematic phonics, fluency, vocabulary, and comprehension. And of course we must not neglect the many other skills that are expected of primary teachers, which include at least establishing classroom routines, setting up the classroom as a productive learning space, maintaining discipline, learning about the students’ home experiences, teaching math, teaching science, and teaching social studies.

Back to distributed cognition

So what does this lengthy inventory of the knowledge requirements for primary teachers have to do with distributed cognition? I would argue that it constitutes a challenge to the traditional model of teacher education. If we take seriously that teachers need to have the full range of knowledge and skills suggested above, then we certainly need to recruit only the most gifted students to teacher preparation programs, and we need to extend the preparation programme beyond the current
relatively brief models to something that resembles the multi-requirement, multi-year preparation programmes for medicine or engineering.

Alternately, perhaps we should rethink the model of leaving an autonomous teacher alone in a classroom ‘doing it all’ for 20-50 children. It is impractical to expect every newly minted teacher education graduate to know everything s/he will need to implement in the classroom. We might nonetheless expect that full range of knowledge to exist in the group of teachers in a school. If schools operated with the default that teachers helped one another, that those with less experience could call on their senior colleagues for ideas and support, that observing successful teachers’ practice was a normal activity, then the limitations of an individual’s knowledge have fewer consequences for children.

Current policies (vide the National Reading Panel Report recommendations) also tend to assume that doing one set of things will work for all children. While that approach may simplify the teaching task, it does not necessary simplify or optimise students’ learning. Some children may need much more focus on code instruction whereas others pick up letter-sound relationships quickly but need lots of focus on language skills. Skilled teachers identify these differentiated needs and adjust their instruction accordingly; less skilled teachers benefit from guidance to help them interpret student performance and select instructional activities accordingly (Connor, 2011). While it is key that learners have access to the full array of opportunities identified above, that does not imply that every student needs equal amounts of every opportunity.

It also does not imply that a single teacher must offer the full array of opportunities. Support for language and content knowledge development can come from a pull-in science teacher as well as from the literacy teacher. Motivation to read can come from experiences with a librarian or a parent volunteer in the classroom, as well as from the literacy teacher. The primary teacher may need a team to provide the full array of opportunities, in the right amounts, to all the students. Embedding the team idea, which is essentially an exploitation of distributed cognition, into educational practice would require updating our models for teacher action and teacher responsibility; as a benefit, the knowledge for teaching reading becomes accessible without requiring that every individual possess it all.

**Teacher knowledge about language**

In addition to the knowledge about literacy referred to above, it has been argued that teachers need extensive knowledge about language as a social and a technical system – how it develops (see Resnick & Snow, 2008) and how it relates to reading comprehension (RAND Reading Study Group, 2002, Sweet & Snow, 2003). In a 2002 volume entitled *What Teachers Need to Know About Language* (Adger, Snow & Christian, eds.), Lily Wong Fillmore and I argued that there was a very long list of questions regarding language as a linguistic system that teachers should be able to
answer. Examples of those questions include the following; many more are included in our chapter:

- What are the basic units of language?
- What’s regular and what isn’t? How do forms relate to each other?
- How is the lexicon acquired and structured?
- What is academic English?
- Why has the acquisition of English by non-English-speaking children not been more universally successful?
- Why is English spelling so complicated?
- Why do students have trouble with structuring narrative and expository writing?
- How should one judge the quality and correctness of a piece of writing?
- What makes a sentence or a text easy or difficult to understand?

With great idealism, we suggested in our 2002 chapter that teacher candidates should take a long list of courses or course segments to ensure that they acquire the knowledge required to answer these questions. We recommended – recognising at the time that this was an overoptimistic list – that teacher education programmes should offer the following courses: Linguistics, Language and Cultural Diversity, Sociolinguistics for Educators in a Linguistically Diverse Society, Language Development, Second Language Learning and Teaching, The Language of Academic Discourse, and Text Analysis and Language Understanding in Educational Settings. These seven courses represent, of course, almost a year’s worth of study all on their own, and an amount unlikely to be made available in the average teacher education program. Conceding that teacher education programs are unlikely to be able to fit in all those courses and topics, and recognising that even if they did the candidates would vary in their probability of learning them all, we are faced again with a seemingly insurmountable obstacle. So what do we do if we think it is crucial that making instructional decisions requires having access to this knowledge? Once again, distributed cognition offers a solution; if teachers operated in teams and the knowledge was available within the team, then it would not be necessary that every individual possessed it.

Knowledge to support the teaching of reading

In 2003 The National Academy of Education appointed a committee to craft a set of recommendations about teacher education (Darling-Hammond & Bransford, 2005). Because it was felt that there was a particularly strong basis in research findings to specify the knowledge base for the teaching of reading, a second committee focused on the preparation of teachers to teach reading was formed. Members of the reading subcommittee included: Richard Anderson, Joan Baratz-Snowden, M. Susan Burns,
Both the committees started with two basic goals: The need for teacher education programmes to challenge the apprenticeship of personal experience, and their need to identify what future teachers must unlearn as well as what they must learn. The apprenticeship of personal experience, on which many teachers rely, is a very conservative force in educational practice. It means that even teachers who are exposed in their preservice programme to novel and progressive practices are unlikely to implement those innovations in their own classrooms.

The list of commonsense beliefs to unlearn represents a second huge challenge to teacher educators. These are beliefs that we all hold, but that can be particularly troublesome in classroom settings. These beliefs operate typically outside of consciousness, and yet influence interactions with students and assessments of their capabilities in highly consequential ways.

In *Knowledge to Support the Teaching of Reading* (Snow, Burns & Griffin, 2005), we identified a long list of myths that influence our thinking about English Language Learners (ELLs), about speakers of nonstandard dialects, about children living in poverty, and about other groups that are seen as educationally challenging. I provide just a few examples of each here.

Among the myths held with regard to ELLs is the presumption that the native language of second language learners is secure, that exposure to two languages can confuse a child, that children who converse well in English should have adequate command of the language for school tasks, that young children will acquire English more rapidly than older children, and that learning to read in a second language is just like learning to read in a first language. None of these is true, or at least universally and simply true, and exploring the realities that counter these myths is a highly valuable component of any teacher education programme.

Speakers of nonstandard dialects, in particular of African-American Vernacular English, also elicit a long list of reactions based on myths, such as the following: nonstandard dialects are deficient forms of speech that oversimplify Standard English; the use of nonstandard forms is inconsistent with use of standard forms; phonological features of nonstandard dialects contribute to children’s difficulty with learning sound-symbol correspondence; children need to acquire standard English before they can profit from reading instruction; and the use of a nonstandard dialect interferes with reading comprehension and fluency. Like the myths about ELLs, none of these claims is true in a simple or universal way, and some of them are never true. If teachers carry these beliefs into classrooms with them, they will not be able to support all their students’ learning.

Children growing up in poverty likewise elicit a set of expectations from their teachers, expectations that research shows are unjustified. We often think that poverty is primarily a characteristic that operates via the family, rather than via the neighbourhood or local community. We may think that all children growing up poor
are similarly disadvantaged, or that children who enter school with weak language and literacy skills will inevitably be poor readers. It is important to recognise that some schools serving poor children are highly effective, that the knowledge deficits of children from homes with poor literacy environments can be made up, and that children from disadvantaged homes and neighbourhoods need richer, more challenging instruction, not more focus on basic skills.

Again, what does any of this have to do with distributed cognition? These beliefs about second language speakers, about nonstandard dialect speakers, and about children from disadvantaged homes are extremely well-entrenched. They are not likely to change because we simply tell future teachers they are incorrect. We have good evidence in the USA that they do not change as the result of the courses in multicultural education designed to dislodge them.

In fact, it may be that these beliefs cannot be changed, but the actions based on them can be. Collaborative action is likely to be less influenced by this set of myths and misunderstandings than is individual action. Furthermore, new-shared understandings are more likely to become entrenched than are new individual understandings. Thus, breaking down classroom walls, giving teachers opportunities to work together and to observe and learn from one another is more likely to change deeply held beliefs than is yet another course or lecture or reading.

Transcending the apprenticeship of personal experience

Transcending the apprenticeship of personal experience will not happen without the introduction of an alternative model for teacher guidance. Snow, Burns and Griffin (2005) argued for the need to substitute for the current system a well-defined career trajectory for teachers, with carefully outlined standards of knowledge and competence for each stage of the trajectory. Progress through the stages is achieved through a process of progressive differentiation of function, associated with progressive assumption of greater responsibility; the process that characterises the career trajectories of medical doctors, chefs, and other professionals engaged in complicated practices.

In the first career stage, that of the preservice teacher candidate, it is clear that the primary form of knowledge accessible is declarative knowledge; the kind of knowledge it is possible to acquire by sitting in lectures and reading books. As teacher candidates start to participate in practice settings, they get access to procedural knowledge; knowledge of how to operate that is typically, in this early stage, highly specific to the original practice settings. Novice teachers entering their own classrooms should have developed stable procedural knowledge; knowledge they can rely on to guide their practice without recurrent help from a mentor teacher. That stable procedural knowledge is not, however, yet adaptive; it will serve the novice teacher in dealing with 60-80% of the students in her class, those who are within one standard deviation of the mean. Children who are very advanced, and those who are struggling mightily, are likely to challenge the novice teacher; for them s/he needs the help of an experienced,
consulting teacher with a higher level of procedural knowledge, what we call ‘adaptive’ procedural knowledge. Finally, after some years of experience and greater experience with a wide variety of learners and settings, the experienced teacher turns into a master teacher, one who can analyse and reflect on her own adaptive procedural knowledge in such a way as to make it accessible to others. The master teacher can, thus, coach newer teachers, model lessons, provide professional development sessions, and in other ways make his/her knowledge accessible and usable to the wider group.

This model of a career trajectory for teachers implies that greater experience leads not just to more knowledge, but also to a different distribution of knowledge types. The total amount of knowledge a teacher has, of course, increases at successive career stages, but in addition the portion devoted to declarative knowledge (which dominates at the beginning) shrinks, leaving more room for procedural and, eventually, expert, reflective knowledge. The process of acquiring the mix of knowledge that characterises the experienced teacher requires recurrent cycles of a) new learning, b) putting new learning into practice, c) considering its effectiveness, and d) reflecting on the next steps. Only with the opportunity to participate in such cycles of learning and reflection can one’s practice improve.

And what does this have to do with distributed cognition? The process of progressive differentiation of knowledge occurs optimally for teachers who

- function within a community of learners
- in which different individuals can be allowed to take on different roles
- in which development from novice to expert, with increasing responsibilities, is understood to be normal
- and in which the experts take responsibility for professionalising the novices.

Without access to the more developed understandings of the experienced teacher, we can hardly expect the novice to improve. Such access presupposes that classroom doors are open, which help can be requested, and that schools create opportunities for exchange and professional learning.

Any teacher who is frank about the conditions of education will note that those conditions are often not good. Resources are inadequate. Bad instructional programmes are often selected and imposed. Prescribed curricula may be inappropriate for some or most students, or inconsistent with teacher preferences. Students coming from poverty, from homes that offer little educational support, from violent neighbourhoods create behavioural and learning challenges. Administrators may be supportive and helpful, but often are uninsightful and obstructionist. There is much to compensate for in the actual conditions of teaching; it is unfair to ask teachers to take on their many challenges alone. Creating a culture in which distributed cognition is presupposed can be a way to help them persist and improve.
Back to the three models for distributed cognition

I started this essay by offering up three specific situations, which demonstrate the value of distributed cognition:

- Filling out one’s tax returns: there is an expert to rely on, and a structure that can be helpful though challenging;
- Finding one’s keys: no one has the solution, but nonetheless joint problem-solving can be effective; and
- Fixing a meal: there are many experts, each with a special dish, who have to figure out how to work together.

While all of those show something about the affordances of the model, perhaps the most powerful and relevant model for distributed cognition is education itself. Teaching, I have argued, requires distributed cognition because it is so hard, and because there is so much to know that no one can be expected to know it all. But clearly learning is also a process of relying on others to guide and shape one’s path. As such, it represents a willingness to enter into collaboration and to engage actively in the process of discovery; the very conditions that make distributed cognition possible.

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The identification of sensory processing difficulties of learners experiencing Asperger’s Syndrome (AS) in two mainstream Grade R classes

Abstract
The purpose of this study is to explore the sensory processing difficulties of Grade R learners that are diagnosed with Asperger’s Syndrome (AS) in two schools in South Africa. Attwood (2007, p. 271) considers sensory sensitivities to have a greater impact on the lives of these individuals, than problems with making friends, managing emotions and coping academically. This research approach was purely qualitative; it used interviews and observations. The sample consists of two independent case studies composed of learners aged between five and seven who had been clinically diagnosed with AS. The results confirmed sensory processing difficulties, and illustrated how these difficulties impacted on the general learning and development of learners diagnosed with AS. Although they were both bright learners, they were perceived as underachievers. By identifying these sensory difficulties and creating awareness among educators, it is possible to debunk misconceptions people have of the adaptability of these learners to a mainstream school environment.

Keywords: Asperger’s Syndrome, sensory processing, Inclusive Education, sensory difficulties, mainstream school
Introduction

The optimal development of young children is considered vital to society and hence it is important to understand the learning and development of them. Children are active participants in their own development, reflecting the intrinsic human drive to explore and master one’s environment (Shonkoff & Phillips, 2002). Their development involves five dimensions and they are: physical (body image and motor control and movement), social (adaptability), emotional (maturity), creative (arts and culture appreciation and technology appreciation) and cognitive (language and mathematical literacy and numeracy) development. The Ministry of Education’s commitment to provide educational opportunities in particular for those learners who experience barriers to learning and development will be discussed in the following paragraphs.

South Africa’s National Department of Education (NDoE) launched the Education White Paper 6 (2001) on Special Needs Education: Building an inclusive education and training system. The 2005 Curriculum’s Assessment Guidelines for Inclusion clearly shows the commitment of the education system to minimise the impact of a range of intrinsic and extrinsic barriers upon the assessment performance of the learners (NDoE, 2002). However, since 2005, there has been a plethora of more recent documents published, pertaining to the practical implementation and theory of special education and inclusive education, of which ‘The National Strategy on Screening, Identification, Assessment and Support’ (SIAS) (2008) is the most recent. The implementation of these strategies pertained in these documents on inclusion by the NDoE has thus allowed large numbers of children of school-going age who experience barriers to learning, including those who are disabled, to exercise their right to basic education and to access the necessary support in their local schools as far as possible. The implementation of the NDoE’s strategies pertaining to inclusive education has allowed a large number of learners with barriers to learning, which includes those who are disabled, to exercise their right to access basic education and the necessary support in their local schools, as far as is reasonably possible.

It is due to the principles of Inclusive Education that educators have been identifying and embracing learners with AS, and the unique ways they perceive their world in mainstream classrooms. The present study evolved out of a concern for young learners experiencing AS, since only limited research has been done on these learners in South Africa. As the focus of this study was on two Grade R learners who are experiencing AS, it made us aware of the importance of sensory processing, and the influence it can have on learning and cognitive, intellectual and physical development. We have noticed, while working one-on-one with these learners, that they have a number of sensory problems associated with hearing, vision, movement and touch. These sensory shortcomings would often make them feel anxious and insecure. We were interested about how this would influence their abilities to function in a mainstream education class. Hence, this concern became the focus of our research. The aim of the study was to create an awareness of learners experiencing AS who are attending mainstream schools in and around the Western Cape. This case study focussed on two
Grade R learners, and tried to discover how their unique way of sensory processing influenced their general learning and development. The interviews and observations that comprise our qualitative data were captured in 2008. The main aim of the study was to investigate the identification of sensory processing difficulties experienced by learners diagnosed with AS, who were attending a Grade R mainstream school. The investigation was done by observing their responses to the sensory stimulus they were exposed to, while interacting within their immediate environment.

**Literature review**

In the following section, the discussion will focus on how AS learners fit into the South African educational framework. In addition, we discuss what the NDoE has done, in their view, to ensure that these learners are successfully included in the mainstream schooling system. We then consider the historical development of the term ‘Asperger’s Syndrome’, the character traits of people diagnosed as such, and the impact of sensory processing on learners with AS.

**Inclusive education in South African mainstream schools**

Since many learners with AS attend mainstream schools, and have to be assessed within the same curriculum and assessment framework, it is important to mention the NDoE’s view on Inclusive Education. The White Paper 6 (2001, p. 17) states:

> Inclusion is about recognising and respecting the differences among all learners and building on their similarities.

In addition, the policy mentions that Inclusion concerns the support of, not only, the learners, but also the educators and the inclusive system, as a whole; with emphasis on development and good teaching strategies with an adaptive support system that will be of benefit to all learners in need.

Curriculum 2005 Assessment Guide for Inclusion (2002, p. 4) emphasises that any practice must be cognisant of the following:

- All learners can learn, given the necessary support;
- OBE is learner-paced and learner-based;
- Schools create the conditions for learners to succeed;
- There is a shift from categorising/labelling learners according to disability towards addressing barriers experienced by individual learners; and
- Provision should be based on the levels of support needed to address a range of barriers to learning.

In theory, the policy set out in White Paper 6 is sound. But in practice it has proven to be difficult. Over the past four years the NDoE has developed a National Strategy Programme as part of the implementation of Education White Paper 6 (2001). More recently, in 2008 the National Strategy on Screening, Identification, Assessment and
Support (SIAS) was introduced to all South African officials, schools, teachers, learners and parents. Hindle (2008, p. 18) states that:

The introduction of this strategy will allow large numbers of children of school-going age who experience barriers to learning, including those who are disabled, to exercise their right to basic education and to access the necessary support in their local schools as far as possible.

According to the principals and educators of both learners in my study, they had embraced the challenge of attempting to include both learners with AS, by conducting their own individual research on the condition, attending workshops, and allowing a facilitator to assist and support the learners in the classroom. According to both educators, these support strategies have made them aware of the unique way these learners perceive the world. During their planning, they had made provision for the following: the AS learner’s unique learning style; their special interests; their perceptual difficulties; and their social and motional impairments. They had made sure that the learners knew what was expected of them, that the learners were aware of the behaviour that attracted positive and negative attention, and that they were reminded of the classroom rules and regulations, and were pre-warned of any changes in the daily routine.

In the following section, we discuss the historical development of the term ‘Asperger’s Syndrome’. We also discuss these learners’ character traits, and how they function within an inclusive educational system.

The historical development of the term Asperger’s Syndrome and these learners’ character traits

Hans Asperger was a Viennese psychiatrist and educator, who first described the syndrome in 1944. Asperger (in Smith Myles, Cook, Miller, Rinner & Robbins, 2005, p. 9) described the characteristics of children that he termed as having ‘autism psychopathy’, in the following way:

The children I will present all have in common a fundamental disturbance, which manifests itself in their physical appearance, expressive functions and, indeed, their whole behaviour.

It was only after Asperger’s death in 1980 that Wing (1981), first used the term ‘AS’, to provide a new diagnostic category within the autism spectrum. She stated that Asperger (1944) described many facets of behaviours of children with this syndrome, and yet did not explicitly define the syndrome.

However, Wing (1981, p. 115-130) extended Asperger’s description and compiled the following characteristics of AS children:

- The children were socially odd, behaved inappropriately and emotionally detached from others;
- They were egocentric and highly sensitive to any perceived criticism, while oblivious to others people’s feelings;
They had good grammar and extensive vocabularies. Their speech was fluent, but long-winded, literal and pedantic;

They had poor non-verbal communication, monotonous and peculiar vocal intonation;

They had circumscribed interests in specific subjects, including collecting objects or facts connected with these interests;

Although most of the affected children had intelligence in the normal or superior range, they had difficulty in learning conventional school work;

They were capable of producing remarkably original ideas and had skills connected with their special interests;

Motor-coordination and organisation of movement was generally poor, although some would perform well in a special interest, like playing a musical instrument; and

These children conspicuously lacked common sense.

In 1988, an international conference was held in London, to explore AS as one of the spectrum disorders. The result of this conference was the publication of the first diagnostic criteria (Gillberg & Gillberg, 1989, revised by Gillberg, 1991). In 1991 the original paper by Asperger, *Autistic Psychopathy*, was translated into English by Frith (1991).

In 1994, the American Psychiatric Association published the fourth edition of the Diagnostic and Strategic Manual of Mental Disorders (DSM-IV). For the first time Asperger Disorder was added as one of the Pervasive Developmental Disorders.

Subsequent to this first publication of the DSM-IV in 1994, the manual was piloted and revised. Attwood (2007, p. 53) mentions that the revised DSM-IV (2000) diagnostic criterion is to-date still considered a ‘work-in-progress’. The American Psychiatric Association states that the release of the approved DSM-V is expected in May 2012.

The following discussion defines sensory processing, explains when it can become a disorder, and how sensory processing pertains to learners experiencing AS.

The impact of sensory processing on learners experiencing AS

Kranowitz (2005, p. 68) argues that ineffective sensory processing happens when the brain has difficulty in the way it takes in and organises sensory information, in one or more of the sensory areas, or at any point in the sensory integration process. This can cause a person to have problems interacting effectively in the every day environment. She mentions that sensory stimulation may cause difficulty in one’s movement, emotions, attention, or adaptive responses. Ineffective sensory processing can limit the learning possibilities and effective interaction with other peers and the immediate environment.

Asperger (in Frith, 1991) made mention of the following characteristics: stereotypical play, odd responses to sensory stimuli, including over-sensitivity to sound, spinning
objects, stereotypical body movements, destructiveness and restlessness. Attwood (2007) argued that these characteristics, (according to Asperger 1944), prevented learners from assimilating the automatic routines of every day life. Wing (1998, p. 13) concurs with Asperger’s findings, when she mentions that children with autism are frequently reported to exhibit behaviours associated with sensory sensitivity (e.g. covering ears to loud, unexpected sounds; restricted food preferences), sensory under-responsiveness (e.g. failure to orient to name or react to pain) or sensory seeking (e.g. rocking, hand flapping and noise making).

Research conducted by Dunn (1999) has shown that the sensory system has a negative impact on the behaviour of children and youth living with AS. Smith Myles, et al (2005, p. 20) affirm that to have a better understanding of this statement one needs to keep in mind that learners with AS:

- have trouble growing up and making friends;
- are sensitive to criticism;
- have poor levels of frustration and tolerance, and cry easily;
- cannot tolerate change of plans or routines;
- often battle to complete tasks; and
- cannot perceive body language correctly.

Given the extent to which sensory problems are prevalent in children with AS, one can rightly expect these learners to have difficulty in functioning optimally in a mainstream school environment, without required understanding and additional support (Smith Myles et al., 2005, p. 41).

The research question, approach, methodology and design, analysis and ethical considerations are discussed in the following section.

Finding answers to the research question

The critical question was:

What are the sensory processing difficulties experienced by AS learners within a mainstream Grade R class?

Research approach

The researchers employed interviews and observations in this study. We attempted to map out, or explain more fully, the richness and complexity of human behaviour of learners with AS, by studying it from more than one standpoint. Henning (2007, p. 147) argues that if the outcome of the interview survey corresponded with the observation study of the same phenomenon, the researcher would be more confident of the findings. By using observations and interviews as our data instruments, we hoped that the two sets of data would help to ensure consistency, reliability and validity. The purpose
of the three interviews was to establish the educational difficulties caused from the inappropriate response to sensory processing expressed by the learners with AS.

**Methodology**

Individual interviews were scheduled with the two educators of the AS learners in the first week of September 2008. In the first week of October 2008 we scheduled an interview with a psychologist who works with learners that live with AS. These semi-structured, ‘face-to-face’ interviews were conducted after hours, in the educators’ classrooms, and in the psychologist’s conference room. The interviews with the educators were scheduled and conducted in the medium of English, as that was the language of instruction in their classrooms. Using open-ended questions, the respondents were asked to give their own answers to the questions. Verbal, probing questions were provided when necessary. These probing questions were intended to help the respondents think more deeply about the issue at hand, and helped guide them to stay focussed on the research topic (Hammell, Carpenter & Dyck, 2005, p. 32).

The interview with the psychologist focussed on how she, in a school setting, works with teachers and assists in mediating sensory processing skills. This interview was beneficial to the study as her clinical findings on how sensory processing influences the learning and development of these learners were obtained, which provided insight into how these learners were functioning intellectually and perceptually. By using open-ended questions the psychologist gave as much information as she felt was relevant, which allowed the interviewer to respond to unexpected information and introduced new unanticipated questions into the interview.

Data from the observations were gathered through making continuous notes on a pre-planned observation schedule. Coding procedures, involved categories, labelling and naming of various aspects around the topic of sensory factors were used. ‘Coding’, according to Henning (2007, p. 131), represents the operations by which data is broken down, conceptualised, and put together in a new way. This allowed us to work systematically, while comparing the data and grouping it together under the same conceptual label. As participatory observers we observed two AS learners, while they were involved in real life experiences, in their everyday physical context. Henning (2007, p. 82) states that, “observation is not just [the] gathering of information, but participating in the actions of people in the research setting and getting to know their ways of doing very well”.

Since both these learners experience AS, and since their performance fluctuated from day-to-day and minute-to-minute, we set aside the whole month of September 2008 to observe their sensory processing development. We visited each class, one morning a week from the 2nd to 23rd September 2008.

Between 08:30 and 12:30, an average Grade R class experiences different activities, such as the morning ring, creative activities, music and movement ring, free play and story time. Within each of these activities the learner would be exposed to the following environments: physical, cultural, social, and group and task environments.
Pre-planned focus areas were included in the schedule that focussed on the exposure to sensory processing of the learner, while participating in activities in each of these environments.

So as to avoid falling prey to bias, we ensured we were actively and consciously involved in not only gathering data and making decisions about what to observe, but managing it on many levels. We observed, took notes, and decided when to participate and when to observe. Not only were the learners observed, but notes where made of the environments and other external elements that could have an impact on the outcome of the findings. Personal notes (memos) were written concurrently while observation was taking place. The main focus was to keep the reasoning behind the capturing of data a priority. Henning (2007, p. 85) argues that the goal of participatory observation is to render a thick description, filled with discussion and analysis, and rich in explanation and argument.

**Sampling**

We intentionally selected two individuals likely to provide us with a greater understanding of the concept under scrutiny. We located two learners, aged between five and seven years of age, who had been clinically diagnosed with AS. They were attending a Grade R class in and around the Cape Peninsula.

**Data analysis**

During our analysis of the data, we transcribed all the interviews and looked for common themes that arose, and proceeded to compare them to observational data recorded. The information gathered were categorised and interpreted manually. To obtain corroboration and confirmation of our findings we received written consent letters from both parents, as these learners were too young to give consent themselves. In this letter, a guarantee that all responses would be kept confidential and anonymous was given to both parents. To honour this agreement the respondents’ names were not used in this study. The learners were referred to as ‘learner 1’ and ‘learner 2’.

**Results**

The data highlighted the sensory processing difficulties the two AS learners experienced during the observation period. The analysis also showed the impact it had on their learning and development in terms of the NCS (2002).

In order to answer the main research question, “What are the sensory processing difficulties experienced by AS learners within a mainstream Grade R class?” we observed the learners in their regular classroom settings to get to know their particular method of interacting with their immediate environment.

The two learners were observed:

- Across settings (physical, cultural, social, and group and task);
The way they used their senses of tactile, auditory, visual, gustatory, olfactory, vestibular and proprioception in their responses; and

How they interacted and responded (interaction and communication).

The results of each will be discussed individually.

**AS learners observed across all settings (physical, cultural, social, and group and task)**

The data from the interviews with the educators of the two learners, and the psychologist, was added to give a richer texture to the findings. Flowing from the data collected from the observations and the interviews, a pictorial table was designed to show how learners 1 and 2 experienced sensory processing difficulties across all these four environments as in Figure 1 (on the following page).

Both learners randomly experienced sensory processing difficulties from all seven senses; they were tactile, visual, auditory, proprioceptive, vestibular, olfactory and gustatory. The three sensory difficulties experienced throughout all environments were: tactile, auditory and visual. Sensory processing difficulties using senses proprioceptive and vestibular difficulties were prominent and olfactory and gustatory difficulties were occasionally observed.

**How both AS learners used their senses to process what was happening in their environment**

Personal and physical development areas incorporated body awareness, body movement and control. This explains why the three senses, proprioceptive (body awareness), tactile (touch), and vestibular (balance) worked together to determine how we physically interact with our world. These senses connect us with our world and bond us with others through touch and movement (Kranowitz, 2005). According to the data collected, both these learners experienced an ineffective processing of sensations perceived through their skin (tactile) and through movement (proprioceptive and vestibular).

Good body awareness is important to engage effectively with the environment, in order to gain additional cues to give meaning about people and objects around them (Smith Myles, et al, 2005). Having good body awareness is vital in refining the skills needed for development and learning to take place in the immediate environment. The lack of body awareness due to tactile difficulties and inadequate understanding of body movement due to vestibular sensory difficulties caused the lack of confidence to participate in movement activities. This directly impacted on their learning and development.
Figure 1: Overview of the components of the investigation and its conceptual framework
Both learners found it difficult to manipulate objects in their environment correctly in order to gain additional cues, to focus on the learning that was taking place, or to express emotions that were not irritating or harmful to themselves or others. By refusing to participate, they also missed out the learning experience that took place, adjusting to the classroom routine, and following an instruction given by their educator. These responses, not only, caused undue stress and disruption, but cause the learners on missing out on developing a positive body image that is needed for developing and learning new skills. The skills we identified them as missing out on were; finding their own personal space, developing of sense of direction, practising balancing activities or correctly identifying the left and right sides of their body.

Learners need to be aware of where their body is in relation to their environment. A learner who feels uncomfortable in his own skin may have poor motor-planning skills. He/she may move awkwardly and have difficulty planning his/her movements, due to tactile and vestibular hypersensitivity. Having good body awareness, motor planning and control is needed to develop skills to effectively participate in activities that promote movement and physical development. Both learners displayed difficulties in conceptualising, organising and carrying out the sequence of the movement, which forms an integral part of their learning and development. We also observed that both learners struggled to cross the mid-line. The inner awareness of left and right and the lateral purposeful movements of the body, and the skill of eye-hand coordination were hampered, since both learners are tactile hyposensitive, or hypersensitive, and vestibularly uncoordinated.

When both the learners were involved in the manipulation of writing and working objects that involved strengthening the learners’ fine-motor skills, like cutting and drawing, they showed a lack of confidence and skill. This was observed when they both found it difficult to sit and work upright at the table, and when they manipulated a pair of scissors, or drawing utensils.

Through observations made, it became clear that creating objects out of art, from various materials, goes way beyond the final project. The whole process of interaction with various materials is more of a learning experience, and it is through exploration that learners build knowledge of the objects in the world around them. During this process they learn to make independent choices and decisions that mould their appreciation for the art forms.

The sensory difficulties observed from both learners, while being involved in creative art activities, influenced them in various ways. By not participating in any of the creative activities set out, these learners missed the chance to acquire any of the exploratory, experimental, and problem-solving possibilities. As most of the activities involved the manipulation of materials, they overlooked an opportunity to develop skills like cutting, pasting, drawing or the manipulation of small materials. It was observed that both these learners found the creative time with art and waste materials very challenging. They were very careful at selecting the materials they were willing to manipulate. Their responses, when being involved in creative activities, were
very similar. These learners had difficulty in achieving the outcomes and assessment standards stipulated for contribution to the development of their creativity.

**How both AS learners interacted and responded to their environment**

When children participate in activities with classmates, the feedback they give to each other builds self-esteem by helping them learn to accept criticism and praise from others. Small group activities also help children practice important social skills, such as taking turns, sharing, and negotiating for materials.

Our findings revealed that both these learners found it difficult to stay focussed and often found it difficult to participate in all the activities. Here all seven senses contributed to these learners’ adaptation to their environment. The following examples obtained from our data, will explain this in more detail.

It was evident from observations made that both these learners struggled to follow the rules and regulations set out by the class educator. They both took at least ten minutes to join a group discussion, or to settle down and do an activity. This behavioural response, we believe can be attributed to their own awareness of their spatial insecurity. This was observed when learner 1 displayed a similar response when it was ‘toilet routine’, and he refused to join the group. Learner 2 refused to sit on a rubber mat during an outside gathering, and went to sit in the ablution block for the duration of the time. This meant that they missed the learning experience that was incorporated in the discussions.

As already established, one AS characteristic is that they often do not perceive body language and expressions correctly. By added sensory difficulty it can result in added stress and anxiety. Learner 1, in more than one instance, was very upset that his peers would exclude him from their games (e.g. “Woolfie Woolfie what’s the time?” a game with specific rules of participation). As he often reacted immatures, by being impatient or by being over-sensitive to touch, his peers complained that he spoilt their game. Learner 2, when approached by a group of peers to join in his Dinosaur fantasy game, was teased when he displayed anxiety and refused to venture on the jungle gym or climb in the tree. He made matters worse when he threatened to try and pull his skin off, by saying: “Look I’m a Dinosaurs Rex and I’m not human”. This response resulted in his peers walking away, thus leaving him isolated and out of the rest of the game.

When extra auditory and visual stimuli were added to their environment, it often caused both these learners to become anxious and distressed. They lost focus and interest in the learning experiences that were taking place. The following responses from the two learners will explain this statement.

During a music presentation learner 1 could not cope with the added guitar sound. He moved into a corner and sat with his hands over his ears and rocked back and forth to try and block out the noise. Learner 2 responded similarly, but handled the situation more maturely, by removing himself and leaving the room. These inappropriate responses prevented any social interaction and learning experiences from taking place.
When unfamiliar smells, and certain taste sensations, were added to their environment these learners showed a distinct dislike to what they smelt (cleaning materials) and an outright refusal to participate in savouring certain tastes, such as fruit. Their over-exaggerated responses were, in both these cases, a disruption to the routine of the class. Both AS learners did not benefit from investigating relationships and solving problems in the scientific and environmental context.

**Recommendations**

It has become apparent that placing AS learners in inclusive settings without support will not result in meaningful outcomes. Based on the findings of the study the following recommendations are proposed:

- Pre-school and Grade R educators in South African schools should all be made aware of the characteristics that young children experiencing AS display. Research done by Gillberg (1998), Wing (1981) and Attwood (1998; 2007), has shown that some young learners, aged between two and four years old, are more often diagnosed with ‘autism’ rather than AS. However, as the children grow older, by the time they are five or six years old, they are then diagnosed with AS. It is recommended once AS characteristics are identified that support structures be put in place to assist the child make better sense of his/her world.

- All the diagnostic criteria mentioned in this study acknowledge a qualitative impairment in social interaction and a difference in the understanding and expression of emotions in AS individuals. Attwood (2007, p. 55) mentions that the best way people deal with these characteristics of AS individuals is to allow them to withdraw from society and their world. It is advised that teachers in training, educators, peers and parents must be made aware of this anti-social behaviour, and be encouraged to find ways and means to assist these learners to develop social and emotional strategies to interact positively within their environment.

- One of the characteristics that define AS is their restricted, repetitive and stereotypical pattern of behaviour, interests and activities. It is recommended that educators recognise the learners’ special interests and build on them to develop the necessary skills. Individuals working with AS learners need to acknowledge that these special interests, can embrace certain functions, for example, to overcome anxiety, provide pleasure, to help understand the physical world, to show a specific intellectual ability and to create a sense of identity of the AS learner (Attwood, 2007, p. 200).

- Educators need to be made aware of the AS learners’ distinctive learning styles and make provision for this in the inclusive learning environment. It is recommended that educators get to know their learners’ strengths and challenges early in the year, so that provision can be made for the inclusion of their special interest in the curriculum throughout the year.
• Early childhood special education, general education and therapeutic interventions are ‘blended’ in practice. Learners experiencing AS need to receive a comprehensive, developmentally appropriate programme side-by-side with peers, who participate in the same activities, with adaptations to those activities, as and where needed. It is of vital importance to include a multidisciplinary support team, consisting of educators, parents, health workers, Learners with Special Educational Needs (LSEN) educators, and capable peers.

• This complex set of relationships can assist learners with AS, not just to develop to their full potential, but to one day become valuable contributors to society. In turn, the learners themselves can promote more positive encouraging attitudes towards individuals experiencing AS. Figure 2 depicts this complex relationship that can assist an AS learner to make sense of his/her world.

**Figure 2: Effective learning and development in a complex set of relationships**

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**Conclusion**

There are many children in South African urban and rural schools who experience AS, but who have not yet been formally diagnosed. To assist young learners with AS, the NDoE needs to make educators aware of the characteristics of these learners, so they can be identified. Support structures can then be put in place and implemented. When an AS learner is identified, training should be provided for the teacher trainers, educators and additional assistance given, where the parents are not able to afford a private facilitator.

Although the challenges associated with AS may be debilitating, many AS individuals display positive achievements, particularly in the area less dependent on
social interaction, such as mathematics, engineering, physics and computer science. AS adult learners can contribute to society, should be acknowledged and given further opportunities.

Therefore, it is our opinion that in South Africa, based on our past and ongoing research, our objectives should be to develop instruments or tools, which will assist in early and easy identification. Appropriate resources should be made available, as well as properly trained personnel so that parents with AS learners can have hope that their children will be able to develop to their optimum potential and live balanced and fulfilling lives.

Acknowledgements
I would like to thank Nico Schlebusch who was responsible for designing the figures.

References


Move to literacy: fanning emergent literacy in early childhood education in a pedagogy of play

Abstract
A literate child is one who is able to read, write, speak and listen. Literacy begins at birth, and continues steadily as children develop. The explicit processes that form emergent literacy are for example, phonemic awareness, letter and word recognition, vocabulary enrichment and structural analysis. These literacy practices are well documented and articulated. But how these practices and the knowledge, skills, attitudes and values (KSAVs) that underpin them are best acquired by young children is contested. This paper argues that an early childhood education (ECE) approach, which fans literacy, should follow a quality play-based approach that embraces a pedagogy of play that foregrounds how children learn through play, and how teachers teach through play. In combining two constructs ‘pedagogy’ and ‘play’, we propose an approach that is underpinned by movement and other appropriate learning activities, which support the development of perceptual-motor behaviours and sensorimotor integration in a pedagogy of play. We argue that perceptual-motor behaviours and sensorimotor integration are the ‘invisible’ pathways to literacy. They provide young children with many and varied, incidental, implicit and explicit learning opportunities. A more informal, play-based approach towards teaching and learning appears to be a successful way of nurturing literacy processes.

Keywords: pedagogy of play; sensorimotor integration; perceptual motor development; early literacy; learning dispositions
Introduction

A literate child is one who is able to read, write, speak and listen (Hill, 2006). Literacy begins at birth, and continues steadily as children develop (Hill, 2006). The explicit processes that form the road to literacy are, for example, phonemic awareness, letter and word recognition, vocabulary enrichment and structural analysis. These literacy practices are well documented and articulated (Heilman, Blair & Rupley, 1994; Hill, 2006). But how these practices, and the knowledge, skills, attitudes and values (KSAVs) that underpin them, are best acquired by young children is contested terrain.

There is an increasing body of knowledge that posits that initial exposure to literacy practices should not be done through formal explicit instruction. As Werner (in Crain, 2005) emphasises, preschool teachers should not focus on any specific intellectual process, such as literacy, without considering the broader context out of which it develops. Werner argues that we first need to consider how literacy can develop out of rich experiences with oral language and other symbolic activities. Providing young children with many, varied incidental and implicit learning opportunities through a more informal play-based approach towards teaching and learning appears to be the most successful way of nurturing the literacy processes (Riley, 2003).

Yet despite this knowledge claim, there appears to be an increasing emphasis on more formal literacy practices in preschools including the Grade R year. School-based observations in Gauteng (WsoE, 2009) show that there is growing emphasis on worksheets and formal literacy instruction. And there is no reason to presume that these findings differ for the rest of South Africa (SAIDE, 2010). The teaching of (formal) literacy skills has become ‘classroom bound’ with an overemphasis on paper and pencil tasks, as well as drilling and rote learning, which is often decontextualised and carries no meaning for the children involved in these activities. This, in turn, has led to decreased opportunities for children to experience appropriate fine motor and gross motor movement, be this through creative art activities, playing with educational games or enjoying outdoor free-play. Is this in the best interests of the young child and later formal literacy practices? We argue to the contrary.

Recent research evidence (Gallahue & Donnelly, 2003; Ayers, 2005; Isbell & Isbell, 2007) shows unequivocally that children’s successful academic learning is enhanced when they are given sufficient and appropriate opportunities to move. It is through movement that the essential perceptual-motor skills and concepts\(^1\) and sensorimotor integration\(^2\) (those implicit processes and ‘invisible’ pathways that underpin literacy learning) are best developed. In addition, these ‘invisible’ pathways provide the foundations upon which formal literacy instruction is based.

Yet, there appears to be a dearth in emergent and early literacy research into the role of movement and the perceptual-motor skills and concepts, as well as the ‘invisible’ pathways that underpin literacy and its four major components; listening, speaking, reading and writing. Through this paper we aim to heighten awareness of the importance of early childhood education (ECE) pedagogy that promotes, through movement activities (as well as other activities), the development of these ‘invisible’
pathways, and thus provides the fundamental building blocks on which more formal literacy practices depend.

Our expertise is in ECE. We are neither biokinetisists nor neurophysiologists. The rationale behind this paper emanates from our growing concern over the increasing formalisation of ECE programmes despite overwhelming evidence illustrating the value of play-based programmes that offer appropriate movement opportunities. Are there not, we ask, other ways of conceptualising ECE pedagogy that will offer alternative forms of practice to ECE teachers who are following more formal programmes “because we have to get children ready for the demands of Grade 1”, and because “there is a increasing demand to teach children the three Rs – reading, writing and arithmetic?” (WSoE, 2009).

We hope that, by setting out these pathways more explicitly and showing how they can be developed through the implementation of appropriate ECE pedagogy, we will heighten awareness of the value of appropriate and relevant ECE learning programmes.

Therefore, in this paper we begin by defining what comprises these implicit processes or invisible pathways. We, then, argue that they are best nurtured through a more informal play-based approach to early learning that acknowledges the importance of movement, as well as other play-based activities for maximising learning in the young child. Thirdly, we suggest that to meet the challenges of teaching and learning in a 21st century context, a particular form of play, a pedagogy of play (Wood, 2009) can best act as a catalyst for fanning the emergence of the perceptual-motor skills and concepts, and the simultaneous development of sensorimotor integration. This integration is integral to academic achievement and appropriate learning behaviours (Ayers, 2005; Isbell, C. & Isbell, R., 2007). In short, for the preschool child play and movement are critical to the development of literacy. And a teacher who understands this will be an integral and effective part of the child’s quest to acquiring literacy.

The ‘invisible’ pathways to literacy

One of the first ways children learn is through their senses, that is, as they hear, see, smell, taste and feel. Information gathered through the senses, namely, sensations, elicits an electro-chemical response. According to Ayers (2005), the sensations we experience provide three different sets of information. The first set tells us where our body is in space and how it is moving. This set of information is provided in two ways. Firstly, by proprioceptors, which process the input about body parts and the body’s position in space. This information is received through the muscles, ligaments and joints. For example, we see a step and know we have to move our lower body appropriately. And secondly, by the vestibular receptors, which process input about movement, gravity and balance and receive this input through the inner ear (Kranowitz, 1998).

The second set of information comes from the exteroceptors, which are linked to the five senses and enable us to respond to sensations or input coming in from outside
the body. For example, we see a dog snarling and back away or we hear a baby cry and run to comfort the child.

The third set of information comes through the *interoceptors*, which alert us to sensations coming from the visceral (internal) organs in the body. If, for example, you feel your pulse you are able to pick up the rhythm of your heartbeat.

When sensations from these three information sources are successfully integrated, the brain can use these sensations to perceive and provide an appropriate motor response or action. In other words, the senses enable us to draw in information from a variety of sources, to interpret this information (or sensations) in the brain and then respond appropriately. For example, when a child is riding a bicycle, s/he sees a road sign, interprets it as a warning to slow down and applies the brake.

The impressions gained through the senses, therefore, give rise to meaning and subsequent action (Arnheim & Pestolesi, 1978). A child’s ability to interpret input from the senses, and respond through movement is inextricably linked to their ability to understand and control their environment effectively (Lundsteen & Tarrow, 1981). This assertion illustrates the inseparable nature of the relationship between cognitive and motor development. Gallahue, Werner and Luedke (1975, p. viii) capture this notion succinctly when they comment “as the child learns to move he moves to learn”.

The idea that body movement is a fundamental component in young children’s learning is not new (Gerhardt, 1973, p. xi), but research (WSOE, 2009) showed that in Grade R movement is being sidelined to meet the more formal pedagogical demands. And this amounts to a lost opportunity to develop gross and fine motor skills, as well as other neuro-physical aspects of learning, since through the exploration of movement the child is able to adjust to, understand and ultimately master his environment (Gallahue, Werner & Luedke, 1975, p. 4). The young child must overcome the pull of gravity in order to sit and stand, he must develop his basic locomotor abilities so he can move through space, and he must be able to handle objects to which he relates (Gallahue et al., 1975, p. 42). As Gabbard (2008), Robinson and Goodway (2009) note, mastery of fundamental movement skills in early childhood are the building blocks for more complex movement, and play an important role in the overall development of school readiness.

In the early years gross motor skills are necessary for movement, as well as to stabilise and control the body. Through gross motor skills children improve their posture, sense of balance and co-ordination. This, in turn, enables children to develop fine motor skills that are essential for success during the subsequent school years (Gallahue & Ozmun, 1998; Gallahue & Donnelly, 2003). It is through the successful acquisition of gross and fine motor skills that the different perceptual-motor behaviours become refined.
Perceptual-motor development, sensorimotor integration

Perceptual-motor development, which results in a range of perceptual-motor behaviours, is a process that starts at birth (if not before) and increases in complexity during the formative years. By the age of six or seven the perceptual-motor behaviours are generally refined (Gallahue & Donnelly, 2003). There are three broad categories of perceptual-motor behaviours all of which are closely linked to the development of early literacy. The three categories are:

- **Spatial awareness and orientation behaviours**, which refer to children’s understanding of their bodies and what their bodies can do, and includes body awareness and body image that are, of course, closely related. Spatial awareness and orientation behaviours also embrace a child’s awareness of their position in space in relation to other objects, the ability to cross both the vertical and horizontal midlines⁴, and to understand the concepts of directionality and laterality.

- **Sensory awareness behaviours**, which refer to children’s ability to respond to sensations perceived⁵ through the five senses. For successful academic learning, the development of two sensory motor behaviours in particular is crucial, namely auditory and visual perceptual-motor awareness. Examples of these perceptual-motor behaviours include visual and auditory memory (being able to remember what has been seen or heard), matching (being able to recognise when images or sounds are the same), discrimination (being able to tell the difference between images or sounds), and closure (seeing or hearing, for example, the first part of an image or sound and then being able to envisage the image or sound as a whole). Listening is, of course, another important auditory perceptual-motor behaviour, which children should acquire.

- **Temporal awareness**, which refers to children’s ability to develop an inner and outer sense of time. This includes co-ordination and rhythmic movements.

Figure 1 outlines perceptual-motor development and behaviours, and, in the process, illustrates how the acquisition of these behaviours provides a foundation on which more formal literacy learning can be based.
Figure 1: Perceptual-motor development and behaviours supporting links to literacy

**SPATIAL AWARENESS AND ORIENTATION**

Develops through
- Gross motor movements: balance, posture, correct sitting position
- Fine motor movements: correct pencil grip, turning pages of a book
- Position in space: correct positioning of letters e.g. above or below the line
- Crossing midline: being able to write/read across a page
- Directionality: knowing where to start reading/writing-from top to bottom
- Laterality: reading, writing from left to right, identifying and writing letters correctly e.g. ‘p’, ‘d’ ‘h’ ‘y’

**SENSORY AWARENESS**

**VISUAL AND AUDITORY**

Memory: being able to remember letters, word and sentences that are seen or heard
Matching/Discrimination: being able to recognise, through sight or hearing, similarities and differences in letters/words
Closure: being able to close a letter or complete a word e.g. an initial ‘but’ could, depending on the context, lead to butterfly/butternut/butter
Constancy: knowing that a letter always represents a specific sound e.g. an a is still an ‘A’.
Figure Ground: being able to pick out a particular letter/word/symbol from a background

**TEMPORAL AWARENESS BEHAVIOURS**

Rhythm: fluidity in speaking, reading and writing
Coordination: hand-eye coordination, etc.
Inner and outer sense of time: e.g. timing of utterances, use of pause, etc.
As already mentioned, perceptual-motor behaviours underpin the successful acquisition of literacy (and other academic) knowledge, skills, attitudes and values. But the mere acquisition of these perceptual-motor behaviours is not enough to enhance academic learning. Children also have to develop the ability to integrate these behaviours to ensure that their body functions as a smooth flowing unit, when responding to different sensations. Handwriting, for example, is dependent on this integration. In Grade 1, a teacher might demonstrate the formation of the letter ‘a’ on the board. For the learner the process should, then, proceed as follows:

- Listen to the teacher as she explains the steps required to form the letter itself (auditory awareness);
- Observe how the teacher forms the letter on the board (visual awareness);
- Process these two sources of information in the brain; and
- Respond through appropriate movement, i.e. form the letter themselves in their books. This is a motor response, which is dependent on a number of different skills; gross and fine motor co-ordination (itself an inextricable part of the successful sensorimotor integration), auditory and visual cues (such as memory), hand-eye co-ordination, and spatial awareness and orientation (Charlesworth, 2004).

The successful formation of the letter ‘a’, therefore, draws on the combination of all aforementioned factors plus others, which we have not listed or discussed here.

This ability to integrate different perceptual-motor behaviours, such as those described above, is called sensorimotor integration, and refers to the process of organising sensory inputs (sensations) so that the brain produces a useful/meaningful body response and also useful perceptions, emotions and thoughts. Sensory integration sorts, orders and eventually puts all sensory input together into a whole-brain function (Ayers, 2005).

Figure 2 provides a diagrammatic representation of the cyclic nature of sensorimotor integration and its fundamental link to the learning of literacy.
Figure 2: A diagrammatic representation of the cyclic nature of sensory motor integration – an important component of child development

AN IMPORTANT COMPONENT OF CHILD DEVELOPMENT

PERCEPTUAL – MOTOR DEVELOPMENT
- Spatial orientation and awareness
- Temporal awareness

MOVEMENT
- Gross motor Sensory
- Fine motor awareness
- Balance
- Posture

SENSATIONS

PROPRIOCEPTORS AND VESTIBULAR RECEPTORS
- Body image
- Body parts
- Gravity
- Balance

EXTEROCEPTORS
- Sight
- Hearing
- Touch
- Smell

INTEROCEPTORS
- Taste
- Sensations
- Coordination
- Received from
- Internal organs
- Rhythm
Sensorimotor integration is an unconscious process of the brain that is geared to organising information detected by the senses (taste, touch, sight, hearing, smell, movement, gravity and position). It gives meaning to what is experienced by sifting through all the information, and then selecting what to focus on, for example, listening to the teacher and not the noise in the playground. Furthermore, it allows us to act or respond to the situation in a purposeful manner.

The acquisition of perceptual-motor behaviours, and successful sensorimotor integration are extremely complex processes, which appear to be best acquired through appropriate movement activities (Gallahue & Donnelly, 2003; Ayers, 2005; Isbell & Isbell, 2007). This contention is further supported by findings of research conducted on the brain by Bransford, Brown and Cocking (1999). In recent years findings from brain research confirm the neural plasticity of the young child’s brain; and illustrate that appropriate experiences, which elicit adaptive responses, enhance the interconnectivity of neurons. Appropriate movement experiences stimulate and develop the neural pathways, which allow us to take in information from the world (sensations), interpret it (in the brain) and then to respond (motor movements). Appropriate learning experiences enhance the interconnectivity between the neurons (different nerves), and establish many different neural pathways. The optimal arranging of neural pathways, through appropriate learning experiences, promotes sensorimotor integration, including the development of perceptual-motor skills and concepts, and underpins academic learning and social behaviours, such as literacy behaviours. We are not suggesting that development can, or should, be accelerated through movement, as this is a highly contested issue (Dahlberg, Moss & Pence, 1999; Mac Naughton, 2003; Penn, 2008). Instead, we are arguing that appropriate movement activities have the potential to maximise learning in young children, because of the role movement plays in the development of the invisible pathways.

Consequently, the more opportunities/experiences that children have to develop these invisible pathways and neural interconnectivity, the more effectively the neural pathways are established with positive consequences for later academic learning. And many of these opportunities and experiences are provided through appropriate movement and play opportunities.

In short, through exploration and guided experiences, fundamental movement patterns become an inherent part of games, skills, rhythms, and self-testing activities. For this to happen, it is essential that children experience many different types of movement and these experiences, we suggest, might best be offered through a pedagogy of play.

A pedagogy of play

Children’s learning is best supported through a play-based, informal approach towards teaching and learning that promotes the holistic development of children (Pellegrini, 1991; Spodek, Saracho & Davis, 1991; Moyle, 1989; 1994; Gordon & Browne, 2008). As Riley (2003, p. xx) writes “play-based activities appear to meet all […] educational
Hence, it could be argued that there is a general consensus that high-quality, well-planned and developmentally appropriate experiences will use play to promote learning (Pellegrini, 1991; Pramling-Samuelsson, 2005; Pramling-Samuellsson & Carlsson, 2008).

This assertion was acknowledged by Vygotsky who saw play as a leading factor in child development. He argued, in fact, that play, like schooling, also operated in advance of development. “In play a child is always above his average age, above his daily behaviour, in play it is as though he were a head taller than himself” (Vygotsky, 1978, p. 129).

Optimising play and realising the potential of a play-based curriculum in the early years is one of the ongoing challenges that ECE faces in this millennium, especially as the pervasive worksheet culture appears to be tightening its grip on Grade R in particular (WSoE, 2009). The challenge that this ‘formal creep’ presents resonates with Wood’s (2009, p. 29) assertion that:

> Although contemporary curriculum models endorse play within integrated pedagogical approaches, achieving good quality play in practice remains a considerable challenge, particularly […] where teachers face competing demands for accountability, performance and achievement, and competing notions of what constitutes effective teaching and learning.

Following the articulation of this challenge, more contestation and heated debates have emerged. As Wood (2009, p. 27) notes “linking play and pedagogy becomes a contentious issue because of the ideological commitment to free play.” This contention is due in part to disparate understandings of the constructs ‘play’ and ‘pedagogy’ and the fact that some ECE educators see these two terms as dichotomous. As Rogers (2011) states, the words play and pedagogy, taken separately, are viewed in educational discourse as disparate. Each word has its own particular meaning and its own particular form of power that impact teaching and learning. Furthermore, teachers’ understandings of pedagogy usually take as their starting point the adult’s role in providing an environment and strategies that support the process of teaching and learning (Rogers, 2011).

One way of addressing this perceived disjuncture between pedagogy and play, and maximising the power inherent in both terms, is to rethink our understanding of pedagogy in relation to the characteristics and benefits of play (Wood, 2009; Rogers, 2011). We would agree with their position as these two terms, when interwoven, could enrich learning and teaching. But what is a pedagogy of play?

A ‘pedagogy of play’ is defined by Wood (2009) as:

> The ways in which early childhood professionals make provision for play and playful approaches to learning and teaching, how they design play/learning environments, and all the pedagogical decisions, techniques and strategies they use to enhance learning and teaching through play (p. 27).

This definition places the teacher in a specific role, which involves the planning and implementation of an interactive, learning environment that offers children challenging and stimulating choices that, in turn, promote holistic development. Through a
pedagogy of play, teachers can provide opportunities for free play and spontaneous movement activities, as well as guided movement experiences designed to support specific aspects of gross motor, fine motor and perceptual-motor development, which, in the end, facilitate emergent literacy in young children.

For Vygotsky (1978) play is a crucial area in development. He recognised that children learn through social relationships and interactions. In fact he saw play as creating a zone of proximal development in which children function at a higher level than they do during everyday tasks. He believed that both adults and more skilled children can nurture this learning by supporting, explaining and extending the experience further. Such acts could be seen as purposeful and this concurs with Wood’s claim that in a pedagogy of play, learning and teaching through play, is purposeful. As Wood, (2009, p. 27) comments:

Play is sustained through reciprocal and responsive relationships, and is situated in activities that are socially constructed and mediated. While children’s interests remain central to curriculum planning the subject disciplines enrich and extend the children’s learning.

This assertion again places the teacher in a critical role. For a creative, flexible ECE teacher focused on developing early literacy in the context of whole child development, a pedagogy of play can open new literacy pathways. In fact, a pedagogy of play is almost limitless in its potential to optimise learning. But the optimisation of that potential lies, to a large degree, with the teacher and his/her interpretation of curriculum. As Wood (2009, p. 27) notes, a curriculum informed by a pedagogy of play can include the ways in which children “act as playful pedagogues in their self-initiated activities”. It is this notion of playfulness that should be a central informing source as ECE teachers experiment with alternative strategies for implementing an effective play-based curriculum in early years education; a curriculum that foregrounds movement and the co-construction of knowledge.

A pedagogy of play is not rigid. It will have multiple forms and types. But there are some constants particularly in relation to the element play. As Wood (2009) contends:

Good quality play is linked to positive learning outcomes in the cognitive, emotional, social and psychomotor domains, and in the six areas of learning (p. 28).

The six areas to which Wood refers are drawn from the United Kingdom’s Early Years Foundation Stage (EYFS), which is made up of areas of Learning and Development. These are:
An ECE teacher planning a curriculum would need to take cognizance of all six areas, and the potential of these areas to fan both literacy and child development as a whole. Knowledge of the latter is essential in the design of appropriate learning activities, but on its own is not enough. As Walsh (2005, p. 40) warns, a deep knowledge and understanding of “development is necessary but not sufficient.” We should also heed Penn’s (2008) argument that neuroscience and physiology has provided us with little definitive knowledge about how learning is enhanced. Teachers should also be aware that play is unlikely to be universally effective, or desirable as a path to promoting learning in all contexts for all children (Rogers, 2011). In other words, play is not always positive. ECE teachers need to ask themselves who does play privilege and who does it marginalise? (Mac Naughton, 2003). Literacy is grounded in social, cultural, historical and political practices (Gee, 1996 in Larson & Marsh, 2005). So too is play (Anning, Cullen & Fleer, 2008). A 21st century context requires teachers to take cognisance of these claims and practices when implementing an ECE curriculum.

All the above claims highlight the necessity of an ECE teacher’s rich knowledge base. In short, physiology, brain research, learning theories, whole child development, understandings of play and curriculum planning should all be considered when conceptualising a pedagogy of play that enables the optimisation of every child’s literacy or literacies potential. We use the term literacies for, as Heath (in Whitehead, 2010) points out, children participate quite naturally in many ‘literacy events’ out of school as part of their social and cultural life. These events, for example a shared attempt by a family to make sense of the instructions for assembling a bench, form the basis of ‘school literacy’. As Whitehead (2010, p. 154-155) asserts:

> Literacy is not just a performance skill with the written system of the language but a cognitive tool that transforms our capacity for self-reflection, mental re-organization and evaluation. Writing is not just for conveying information and instructions, nor is it just for sharing pleasure and messages – **writing is for thinking.**

It is this understanding that should, we argue, inform a pedagogy of play. For this form of play is one of the precursors of writing, and should therefore present a rich language environment where playfulness with story and (where appropriate) rhyme is constantly apparent.
The above claims point to an increased focus on the interactive roles of adults (as they engage with children to co-construct knowledge) to promote, challenge and support play that is both socially and conceptually complex. It is not only children who should act as playful pedagogues. In socio-dramatic play, a teacher can identify ‘teachable moments’ as they spontaneously emerge and use these moments to co-construct new understandings with children, as well as enrich vocabulary. As Wood (2009, p. 29) points out, indicators of effective pedagogy in ECE entail; “opportunities for co-construction between children and adults, including ‘sustained shared thinking’, joint involvement in child- and adult-initiated activities and informed interactions in children’s self-initiated and free-play activities”.

The realisation of a pedagogy of play would present ECE teachers with a demanding new set of challenges. Included in these would be the need for a South African based reconceptualisation of the terms ‘pedagogy’ and ‘play’; a reconceptualisation that demonstrates insight into how these two notions can operate in unison to promote literacy. The conceptualisation of the united pair (pedagogy and play) is essential because, as Wood (2009) points out, while there is substantial evidence of learning through play there is less evidence of teaching through play. Therefore, we suggest, that possible manifestations of a pedagogy of play in the South African context should be a priority research area. As an inaugural step, this paper considers a pedagogy of play in the context of literacy that might open up a space for intellectual debate on the details of a practical realisation of a play-based pedagogy.

A starting point for this debate could come from the definition of a pedagogy of play. The phrase “… the ways in which early childhood professionals make provision for play and playful approaches to learning and teaching …” (Wood, 2009, p. 27) complements Whitehead’s (2010) assertion that:

> Literacy progress should be the dominant and joyful focus of the early years curriculum and it should be at the centre of the genuine partnership between early years settings, schools and parents (p. 138-139).

The words ‘joyful focus’ and ‘partnership’ form an integral part of the approach to early literacy set out in this paper. Children find joy in movement; both spontaneous movement, which is often part of free play, and more structured movement activities, such as movement and music rings, in which teacher guidance is more explicit. In teacher guided activities creative and problem solving elements could be introduced. For example, the teacher could ask children to collaboratively explore different ways of using their bodies to represent specific letters of the alphabet. In all these instances the type of programme adopted by the teacher is pivotal. It can either enhance or reduce literary-enriched learning opportunities.

**Enhancing emergent literacy**

Wood (2009) points out that research in the field of play and literacy has been conducted from multiple perspectives, and has generated strong evidence of links between developing literacies and play activities (Marsh, 2005; Roskos & Christie,
Wood (2009, p. 29-30) asserts “there is substantial evidence that through play children demonstrate improved verbal communication, high levels of social and interaction skills, creative use of play materials, imaginative and divergent thinking skills and problem-solving capabilities”. Furthermore, she contends, “play and playful forms of activity potentially lead towards increasingly complex forms of knowledge, skills and understanding, particularly in the cognitive and social domains” (p. 30). So how does this promote literacy?

While children are having fun, and this frequently happens during play and movement activities, they are at their most receptive to taking in sensations, and to responding to them. During these activities they are refining their fundamental motor skills, and, at the same time, establishing perceptual-motor behaviours, which we have argued are fundamental building blocks on the road to literacy.

But this is only one aspect of literacy acquisition. As young children set out on the road to literacy there are other clear signposts that point the way. There are letters, sounds, words, pictures, prediction and problem solving, and a wealth of other pointers. There are shared ‘literacy’ encounters, picture books, story time and language play. Literary-enriched play and ‘mediatable moments’ occur spontaneously during the early childhood school day, often in the context of play. It is the utilisation of these moments plus, of course, knowing when to step in and when to stand back, that can promote literacy.

The literacy potential in ECE is multi-faceted. In free play, routines, and rings the potential for developing literacy is there. Its development should become each teacher’s personal, and professional responsibility.

The complexity of his/her task is captured in the words of Whitehead (2010) who states:

Experienced professional teachers of early literacy have to interpret the many complex findings of research and clarify the issues in discussions with other professionals and young children’s families. Factors that need to be considered include, current knowledge about the brain and children’s different developmental stages, learning styles, cultural, social and home literacy experiences (p. 138).

South Africa’s language diversity, while a rich resource poses many challenges. The adoption of a multi-modal pedagogy which would enable learning environments to become more participatory, agentive spaces (Newfield, 2011) would be one way of beginning to address these challenges. As Newfield (2011) comments, teachers could use multimodality in productive, expressive and creative ways that work against deficit models of children and draw on their everyday experiences and language resources. Multimodal pedagogy could enable children whose home language is not the language of learning and teaching (LoLt) to make meaning through their interpretation of other genres of representation employed by the teacher. The children themselves could employ these other genres such as using their body as a key instrument of expression. In short, in South Africa’s multilingual classroom realities multimodal pedagogy could become one way of overcoming possible spoken language barriers.
In addition, the informal nature of ECE beckons creativity, and multi-modal pedagogy could provide a context for a range of communicative acts that enhance learning. We argue that such communicative acts could become an inherent part of a pedagogy of play where play is sustained through reciprocal and responsive relationships (Wood, 2009).

Storytelling, for example, could lend itself to a multimodal approach. The book Not so fast Songololo by Niki Daly could be successfully told through the medium of English to a group of multilingual children. Appropriate story aids, correctly sequenced, could help children identify specific characters and important aspects of the narration. Meaning could be further enhanced through the teacher’s use of bodily movements, gestures and sounds. After the story has been presented, children could be given more opportunities to deepen their understandings of the text through a movement or dramatisation ring.

This story also presents many opportunities for vocabulary enrichment. It contains, for example, words such as old and young (as in people), push and pull, in front of and behind. The teacher’s use of a bodily kinaesthetic approach to learning would aid meaning making in this context. The example we have just set out would then meet two sets of criteria. It is play based, purposeful, meaningful and reciprocal which are some of the criteria of a pedagogy of play. It is also using the body and the senses to make meaning through a multimodal approach. As Kress (2000) notes, the role of the body and of the senses in semiosis (the process of meaning making through signs) guarantees the multimodality of our semiotic world.

By recommending this approach as part of a pedagogy of play we are not detracting from the enormity of the challenges emanating from South Africa’s linguistic landscape. We are just suggesting one possible way for teachers to address multilingual issues in his/her ECE class. Multimodality then is one way of making the ‘invisible' visible.

The notion of ‘invisible’, in this instance, ‘invisible’ pathways to literacy through a pedagogy of play, is the main focus of this paper and the focus to which we now return in the context of handwriting.

In our earlier example of the acquisition of handwriting and the essential underpinning skills, it became clear that teachers ought to offer a variety of activities to enable children to master the formal skill of handwriting when they enter Grade 1. Gross motor skills are developed through outdoor free play, for example, climbing on jungle gyms, digging in sandpits, painting on an easel to develop the muscles of the shoulder girdle. Fine motor skills are refined through play with construction toys, such as blocks or lego's, manipulative toys such as jigsaw puzzles, other small toys such as peg boards, cars and dolls house furniture, opportunities to thread beads and lace cards, as well as to mould using play dough or clay, and to draw and paint. Zipping, buttoning and using scissors, crayons and other art materials help develop finger dexterity. According to Charlesworth (2004), once a child has attained small muscle (fine motor) skills they can co-ordinate hand and eye. By observing a child drawing it
is possible to ascertain whether the child is able to make the necessary basic strokes needed for writing.

As already mentioned, handwriting also involves perceptual skills. Children need to perceive similarities and differences, shapes, sizes and directions. These skills are developed through motor movements during free play; climbing on a jungle gym, riding a tricycle, playing a variety of educational games such as memory game, lotto or dominoes or through socio-dramatic play (which, according to Vygotsky, should be the lead activity for children between the ages of three to six years (Karpov, 2001).

Through structured teacher-guided activities, such as movement and music rings, children are encouraged to further explore and develop these skills. Finally, in order to write children need to have orientation to printed language. Children, therefore, need opportunities to be creative; to make books and greeting cards during creative art and to be exposed to books and stories in both their mother tongue and the LoLT. This is another instance where a multimodal approach could enrich the communicational and educational landscape.

We also know that children do not develop the ability to write in isolation from the other language skills, namely; listening, speaking and reading (Heilman, Blair & Rupley, 1994). Hence children need to be immersed in a language rich environment where they experience plenty of opportunities to both hear and talk. The richer the child’s linguistic resources, the more readily the skills of reading and writing are acquired. As Anderson, Heibert, Scott and Wilkinson in Heilman et al. (1994, p. 12) claim:

> Reading instruction builds especially on oral language. If this foundation is weak, progress in reading will be slow and uncertain. Children must have at least a basic vocabulary, a reasonable range of knowledge about the world around them and the ability to talk about their knowledge. These abilities form the basis for comprehending text.

In short, the acquisition of literacy is a complex, multifaceted process. Literacy skills are not acquired in isolated parts, which Heilman et al. (1994) suggest is the focus of many beginning reading and writing programmes. Literacy skills are best acquired when the child is immersed in a challenging and stimulating environment that provides rich and varied learning experiences, which optimise the child’s learning potential. One way to address ‘all aspects’ is through a pedagogy of play.

**Conclusion**

In this paper we argued that the building blocks of literacy are best acquired through a quality play-based approach towards ECE, which is realised in a pedagogy of play. In bringing together two constructs (‘pedagogy’ and ‘play’) once seen as disparate we propose a literacy approach that fans, through movement and other activities, perceptual-motor behaviours and sensorimotor integration in a pedagogy of play. Perceptual-motor behaviours and sensorimotor integration are the ‘invisible’ pathways to literacy. The stimulation of these invisible pathways presents spontaneously during the preschool day. Literacy events to use Heath’s term (in Whitehead, 2010) can be structured, like a story ring, or arise unheralded during socio-dramatic or other forms
of free play. It is the teacher and his/her insight into literacy and its many forms that can make the difference.

It is envisaged that by 2014 all our children in South Africa will be offered the opportunity of a Grade R year before the start of formal schooling. Are our teachers ready for this challenge? An ECE/Grade R teacher who understands the role of the invisible pathways and how these can be fanned in a pedagogy of play is ideally positioned to optimise incidental and other teaching and learning opportunities. In so doing s/he paves the road to literacy and enables children to develop the KSAVs that not only underpin successful literacy learning but academic learning in general.

Endnotes
1. Perceptual-motor development is the term, which refers to the development of specific skills and concepts acquired when children take in information from the environment via the senses, interpret this information in the brain and respond to it through movement.
2. Sensorimotor integration refers to the ability to integrate different perceptual-motor behaviour; it is the process of organising sensory input (sensations) so that the brain can produce a meaningful body response.
3. This input could be, for example, in relation to size, shape, speed, space and feelings about one’s own body.
4. The vertical midline refers to an imaginary line dividing the body in half (vertically) a left and right side. The horizontal midline refers to an imaginary line dividing the body in half along a horizontal plane.
5. Perception is the brain’s interpretation of physical sensations. Sensation is what happens when physical stimuli are translated into neural impulses that can then be transmitted to the brain and interpreted (Lefrancois, 1992 in Charlesworth, 2004, p. 39).
6. Certain forms of play, for instance a home corner in socio-dramatic play, could exclude boys because of gender bias arising out of cultural norms.
7. Mediated or teachable moments refer to opportunities for teacher intervention that occur spontaneously during free play and ring time. A teacher, for example, can observe play in the fantasy corner and purposely intervene to enrich vocabulary use.
8. Free play, routines and rings comprise the three main elements of the preschool programme. Routines are those everyday activities that give structure to the day such as toilet and snack times. They provide excellent opportunities for incidental learning. Free play, also called child-initiated learning, refers to those times when children take responsibility for their own learning through exploration and discovery supported by free choice activities. In a pedagogy of play, the teacher would, where appropriate, mediate learning and engage children in the co-construction of knowledge. Rings refer to teacher-guided activities and are those times when the teacher structures the learning opportunities. Rings include morning discussions, story, movement, music, science and perception. These rings all offer opportunities for literacy acquisition.
9. Multimodality is a theory of meaning and communication. Multimodal pedagogies exemplified here are a move away from the traditional monomodal approaches to teaching and learning with their focus on language as the primary mode of learning. Multimodal pedagogies consider the inclusion of more concrete, material, sensory and bodily practices. They are founded on the idea that meanings are made, disseminated and interpreted through many representational resources or modes, of which language is but one amongst
many; image, sound, gesture, space, music, movement, facial gestures and body postures (Newfield, 2011).

References


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Deficiencies within the education system with regard to perceptual motor learning preparation of Grade R learners

Abstract
Increased concern about the low levels of literacy and numeracy among Grade 3 learners in South Africa is resulting in more emphasis being placed on the preparatory Grade R year. The level of learning readiness of pupils when entering formal teaching in Grade 1 is determined by perceptual motor stimulation that pupils received during the preschool phase. ‘Learning readiness’ can be influenced by the knowledge of teachers, teacher/child ratio, the availability of teaching aids, as well as the amount of space and time allocated to movement activities. The aim of the study recounted in this article was to determine the physical deficiencies that could negatively affect children’s perceptual motor development and school readiness. Focus was placed on factors that influence perceptual motor development such as the training of teachers, availability of equipment and resources at schools with Grade R classes. Demographic information was collected with regards to; the qualification of teachers, the number of pupils, and intervention programmes that are offered at schools by outside institutions. A Likert scale questionnaire, with a combination of yes/no and open questions, was used and followed up by a personal interview. According to availability, 31 schools and 51 teachers were selected to participate in the research. Teachers of schools in developed areas and disadvantaged areas were involved in the study. The results of the study show that teachers are not sufficiently trained for the early child developmental needs within the education environment and that many schools are under-supplied in terms of resources and equipment. It is recommended that these teachers receive in-service training on learners’ perceptual motor development and that the Department of Education should provide schools with resources and equipment to prevent these deficiencies in the education system.

Keywords: early childhood development (ECD), Grade R learners, learning readiness, perceptual motor development, teacher qualification, equipment, resources
Introduction

Outcomes-based education has been implemented in schools across South Africa since 1998. The National Education Policy (Department of Education, 1997) regards early childhood development (ECD) as an umbrella term that refers to the development processes that children go through from birth to nine years of age. This phase of development process includes: physical, mental, emotional, moral and social growth. As the Department of Education (DoE) regards the first year (Grade R) as an introductory year of an integrated foundation of four years, the type of education pupils in Grade R receive is of cardinal importance to their further school careers (DoE, 1997). During these first four years of school, the foundation is laid on which all further education and learning is built. As a result, children with a deficient foundation can experience problems throughout their school career (Willenberg, 2005). The standard of education and training in South Africa, which is reflected (among others) in the low pass rate of learners in Grade 12, is a cause for alarm. The statistics reflect back to the foundations laid in the Foundation Phase (Niebuhr, 2007).

Aim and problem statement

Usually, children attend preschool from three to six years of age. This period of time is critical to the development of fundamental movement skills (Gallahue & Donnelly, 2003). Because most young children are naturally curious and love to play and explore, these fundamental movement skills are learned very easily (Cools, De Martelaar, Samaey & Andries, 2009).

According to Van Zyl (2004) there is a relationship between the school readiness and perceptual development of learners and the success that they reach in the later years. Although the National Department of Education formed policies to introduce Grade R classes to all primary schools, it is taking time to implement this into practice. The original goal was to have all children of five years, in a Grade R class in 2010, but it did not happen because not enough classrooms and qualified teachers were available. This target was subsequently postponed to 2014 by President Zuma (Zuma, 2009; Rademeyer, 2010).

Research problem

The situation in primary schools is that many teachers in Grade R classes are not adequately qualified. The teaching approach is too formal and Grade R classes follow the same timetable as the rest of the primary school. Grade R classrooms are not equipped for informal education with the necessary educational equipment. Most primary schools do not have a separate fenced play ground with jungle gyms and sandpits for Grade R learners. Many children in South Africa enter school without sufficient, if any, stimulation prior to formal schooling. It, for this reason, became necessary to give more attention to organised structures and schemes, such as Grade R
classes, to provide opportunities for more children to be exposed to preparation in order to reach learning readiness.

Another problem is that most primary school principals do not have the background knowledge or exposure about early childhood development and informal teaching practice of children of four to six years (Greyling, 2011). Due to this, they find it difficult to do justice to the newly acquired and instituted Grade R classes. All primary schools setups and school grounds are not equipped to adapt to the needs of Grade R learners. There are not enough, or sufficiently trained teachers available, to take care of Grade R classes in primary schools (Steyn & Hartell, 2011). If teachers, not trained to teach Grade R, are made responsible for young learners, they tend to follow a formal approach that is unsuitable for five to six year olds (Greyling, 2011). These children still need stimulation to be become ready for formal learning and for becoming school-ready. Many schools also do not have teaching aids or resources for Grade R classes. In some cases where schools have educational toys, games and aids, teachers do not know how to use the equipment (Erasmus, 2008).

In most of the schools observed the Grade R classes follow the same timetable as the rest of the primary school (Erasmus 2008). Such programmes included long times in classrooms spent completing worksheets. Young children need enough time for free play and movement activities, which are often restricted when following strict timetables suitable to older learners (Greyling, 2011).

The aim of the research reported in this article was to determine the deficiencies within the education system with regard to perceptual motor learning readiness of Grade R learners in two previous disadvantaged schools in the Dr Kenneth Kaunda district in the North-West Province. The research focused on the following core aspects: Qualifications of teachers and time spent on movement by learners (structured and unstructured), classroom size and outside space, equipment and resources available at schools and the teacher/child ratio. The phenomenon, namely deficiencies within an education environment with regard to perceptual motor learning preparation of Grade R learners, as found in the North-West Province, was researched.

Description of concepts

Teacher qualifications

The DoE requires a degree or a three-year diploma in early childhood education as adequate training for Grade R teachers.

Grade R classroom and outside playground

Grade R classrooms are suppose to be informally furnished with appropriate equipment, educational toys, and designated activity areas (that stimulate creative thinking, construction, fantasy, and manipulation). The Grade R group should have a separately fenced play ground with at least a jungle gym and sandpit.
Background on circumstances in South Africa

South Africa is regarded as a developing country with many factors that contribute to the current state of national education. Various factors, such as too few schools, too few teachers and many learners who do not have access to education contribute to the concern over Foundation Phase education, which forms the concrete conceptual basis of all education. This concern is addressed in the “Education White paper 5 on early childhood development” (1995) where the importance of early childhood development is emphasised. It also sets norms and standards for the training of ECD educators (DoE, 2007). Kader Asmal, former minister of education, had already indicated in 2001 that more than 40% of all children in South Africa grow up in poverty and neglect, and that only 450 000 of the approximate 960 000 children between the age of five and six years have access to some or other early childhood development programme. Compulsory systemic assessment of learners, which began in 1998 with Outcomes Based Education (OBE), indicated a mean numeracy level of 30% and a mean literacy level of 54% in 2000, in a sample of Grade 3 learners who were involved in the assessment. In terms of literacy, reading and writing skills exhibited mean values of 39% (DoE, 2002). The findings of a second systemic assessment in 2007 did not show much improvement (Pandor, 2008; DoE, 2008). In the second assessment, a mean for literacy was indicated as 36% and 35% for numeracy (Serrao, 2008).

It was also found that in certain parts of South Africa 25% of learners from previously disadvantaged groups did not pass Grade 1. These data demonstrate the pressing need for correct and sufficient stimulation and intervention for school beginners. Poorly developed perception, as well as gross and fine muscle coordination, must already receive the necessary attention in Grade R. Since Grade R has become part of the Foundation Phase, learners must achieve certain outcomes in all eight subjects, as is prescribed by the National Curriculum Statement (NCS) (DoE, 2002).

Many schools have already instituted a Grade R class, but in many cases the teachers who offer these classes are not qualified to teach in the ECD phase. Although the reasons for this can be considered as varied and complex, it seems if few native African language speakers are prepared or willing to be trained to teach classes in the Foundation Phase level of education. Evidence in this regard shows that African school leavers do not consider helping primary school pupils to read and write (Govender, 2011), while university statistics show that African trainee teachers rather opt to teach high school pupils instead of their younger counterparts. Robinson, Dean of Cape Peninsula University of Technology, furthermore comments that African students perceived Foundation Phase teaching to be a low-status career (2011), while the Department of Higher Education and Training (DHET) furthermore predicts that of the 1 275 Foundation Phase students expected to graduate at the end of 2009, only 168 were African students (DHET, 2009). From this it would appear that the value of a firm foundation that is established in the Foundation Phase by good teachers is not often recognised and a qualification in ECD is hence regarded as inferior, resulting in young people being reluctant to become Foundation Phase teachers (Lenyai, 2009).
In previously disadvantaged communities, housing space is limited, while the possibility of movement and playing areas is restricted (Erasmus, 2008). This also applies to schools with overcrowded classrooms, little or no equipment and poorly qualified teaching staff: the phenomenon of deprivation with regard to development is currently being repeated (Ministerial Committee on Rural Education, 2005).

According to the outcomes set for Grade R learners, with regard to movement and physical development (DoE, 2003), there should be sufficient space and opportunities at schools with Grade R classes for these activities. Various activities, such as running, chasing and evasion games and various ways of moving (e.g. spinning around in a circle, lifting and balancing an object and expressive movements with various parts of the body) must be offered.

Results of a study in South Africa by Labuschagne (2006, p. 77) on the motor and sensory development of five and six year-olds from poor socio-economic conditions indicated developmental deficiencies of as much as 12 months. Differences were also indicated in the developmental levels of girls and boys, of which perceptual and motor deficiencies appear to be the most significant. This concurs with research conducted by Goodway and Branta (2003), which showed that less privileged children experience developmental deficiencies with regard to fundamental school readiness skills. Research found a correlation between socio-economic levels, degree of nutrition and developmental skills among children aged two to six years, from urban and rural environments in Israel and in India (Shula, Chaya, Jeri & Noomi, 2000). Physical activities in children are advantageous to their health and provide a strong platform for maintaining good health throughout life.

Although gross and fine motor skills and perceptual development are an integral, inseparable development process, the fine motor development of children is preceded by gross motor development; just as a small child’s sitting, crawling and walking actions follow in sequence (Grové & Hauptfleisch, 1978). These stages follow a predictable sequence that is commonly age related, and provide a convenient way to arrange general guidelines of motor development (Gallahue & Ozmun, 1995).

Even though there are clear learning outcomes and assessment standards in the NCS, many schools do not apply them as a result of limited facilities and ignorance, or lack of training or interest by teachers. Regardless of the fact that the NCS makes provision for education, stimulation and promotion of physical development, movement and perceptual development of Grade R learners, it is not implemented at all schools and offered on a regular basis. This is partly due to unqualified teachers and insufficient, funding, equipment and apparatus. In these classes more emphasis is placed on completing the formal work cards (that is, two-dimensional works) than on physical, motor and perceptual discovery playing opportunities (De Witt, 2009; Davin & Van Staden, 2004). This leads to frustration in the small child who, according to the Department of Education, does not, as yet, possess the fine motor abilities to colour in for long periods of time and to trace written patterns. If there could be a balance in the daily programme that Grade R learners follow between more active movement
activities and passive fine motor/perceptual activities, it would be to the advantage of the small child (South African National Tutor Services, 2003).

**Theoretical foundation**

The research problem requires an approach that makes it possible to gather context-related responses. This should lead to better understanding of the phenomenon, while the researcher should gain insight into the perceptual motor preparation of Grade R learners.

This research was undertaken with a post-positivistic and interpretivistic perspective in mind (Leedy & Ormond, 2005). The post-positivistic perspective aims to conduct an empirical observation and measurement of the research phenomenon. It reflects the need to identify and assess the causes that influence outcomes, in this case the shortcomings within the education system with regard to perceptual motor learning preparation of Grade R learners. Interpretivism is applicable because the phenomenon includes the social reality, as well as the unique views and experiences of the participants. The effect of the negative influence of the bio-ecological context in which Grade R learners find themselves is self-evident.

The research further rests on the theory of Bronfenbrenner, which focuses on an ecosystemic model. According to Bronfenbrenner, there is an interaction in the bio-ecological context in which the learner finds him-/herself. The bio-ecological context can be advantageous or detrimental to the development of the learners (Donald, Lazarus & Lolwana, 2002).

An empirical investigation was conducted with this conceptual-theoretical framework in mind.

**Empirical investigation**

**Research design**

A combination of quantitative and qualitative data collection and analysis was performed. A mixed method approach was used with the aim of using the best of each method. The combined method also strengthens the validity and reliability of this study (Creswell, 2009).

**Sampling**

Research data was obtained from an availability sample to include teacher participants of Grade R classes in the North-West Province. A category division was made of Grade R classes at primary schools (N = 17) and Grade R classes at nursery schools (N = 14). Grade R classes were further classified according to wealth and degree of communal development, i.e. from developed schools (N = 17) and previously disadvantaged schools (N = 14). According to the information obtained from the questionnaires, there
were different categories identified where schools with Grade R classes were situated. Schools were further classified as primary and nursery schools with Grade R classes:

- Developed primary schools with Grade R classes: (N = 5);
- Developed nursery schools with Grade R classes: (N = 12);
- Disadvantaged primary schools with Grade R classes: (N = 9); and
- Disadvantaged nursery schools with Grade R classes: (N = 5).

An availability sample was selected of teachers of Grade R classes in the North-West Province. Information was obtained from teachers (N = 51) and the physical availability of sources at schools (N = 31) by means of a questionnaire that was completed with individual Grade R teachers in schools.

**Measuring instrument**

A self-compiled questionnaire was used to determine the training and age of teachers and physical availability of sources and equipment at schools to stimulate perceptual and motor development. A pilot study was first performed using five teachers to test the suitability of the questions in the questionnaire after which improvements were made.

This study consisted of individual interviews with Grade R teachers during which qualitative information was obtained by means of a structured questionnaire at schools with Grade R classes. Questions on training, provision for movement development, size of classrooms and number of learners in class, the outdoor-playground, availability of playing equipment and resources were included in the questionnaire. The researcher asked the respondents questions directly from the questionnaire to obtain descriptive and explanatory information (Cohen *et al.*, 2002). Individual interviews permitted the researcher to obtain personal information from teachers, which enabled the researcher to understand their day-to-day experiences and professional realities.

**Validity and reliability**

A questionnaire designed by the authors was used to obtain descriptive information. Cronbach's alpha reliability quotient is not applicable as each question was analysed separately. A researcher was present during the completion of the questionnaires to verify the correctness of the information, by means of observation, and to ensure the validity of the answers.

**Data collection**

Schools in the North-West Province of South Africa partook in the research. Questions on training, provision of movement development, classroom and playground size, availability of playing equipment and resources were included in the questionnaire. The researcher visited all 31 schools personally. Observation and individual interviews were used as qualitative and quantitative research methods (Creswell, 2009).
Data processing

Data was analysed by using Statistica for Windows (Statsoft, 2010). Percentages, descriptive statistics, frequency tables and mean values were calculated. Two-way frequency tables were used to determine the correlation between developed and disadvantaged primary and nursery schools. Statistical significance was established on a 5% level of significance ($p < 0.05$). In two-way frequency tables the phi-quotient was used to determine the practical significance of correlations (Ellis & Steyn, 2003). A phi-quotient with values of 0.1 and smaller can be regarded as a small effect with no practical significance, while values of 0.3 as medium effect, which is visible in practice. Phi-quotient with values of 0.5 or larger is regarded as of great importance.

Findings

Training of teachers

For the analysis of the results obtained, the answers were categorised according to nursery and primary schools in developed and disadvantaged schools. Results with regard to perceptual motor learning preparing of Grade R learners were discussed.

A Spearman rank correlation was calculated between the training of teachers and their age ($r = -0.05$), which indicated no statistical or practical significant correlations. 76% of the teachers’ ages were between 30 and 50 years of age, and only 10% were in the 20 to 30 year category, which is an indication that there were few young teachers in the study population. This is an indication that the majority of Grade R teachers were mostly older people, which might be an advantage, considering that older teachers have more experience. There are not many young Grade R teachers. This suggests that, in the near future, there will not be enough teachers available for ECD education. No statistically significant differences were found with regard to the age of teachers in nursery and primary schools in developed and disadvantaged schools ($p = .29$ and $p = .52$, respectively). Table 1 and 2 provide information of the training of teachers, as obtained from the question used to determine whether the teacher is trained to offer preschool phase (ECD) education (Table 1), and what the nature of the qualification is (Table 2).

Table 1: Training of teachers

<table>
<thead>
<tr>
<th>School</th>
<th>Trained</th>
<th>Not Trained</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nursery N &amp; %</td>
<td>Primary N &amp; %</td>
</tr>
<tr>
<td>Developed school</td>
<td>N = 5</td>
<td>79%</td>
</tr>
<tr>
<td>Disadvantaged school</td>
<td>3</td>
<td>33%</td>
</tr>
<tr>
<td>Number of schools</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
No teacher in the group was found without any training (Table 1), although qualified teachers who did not possess the necessary ECD training were part of the group. There were also no teachers with further training past the four year Foundation Phase course. No teacher had obtained honours or master’s degree, or a doctorate in ECD. More trained Grade R teachers, from the developed school group, work at nursery schools (79% – P < 0.01, effect size phi = 0.41), whereas fewer Grade R teachers, with appropriate training, work at primary schools (30%).

In disadvantaged schools no significant difference between nursery and primary schools could be observed, but more than two-thirds of the teachers did not have the necessary ECD training. A greater number of teachers in disadvantaged schools did not obtain the necessary training as compared to teachers from developed schools. The greater percentage of teachers in developed schools have three to four years of applicable ECD training (66%), as compared to the 33 – 46% in disadvantaged schools that possess the minimum ECD qualifications. Teachers in disadvantaged schools with one or two years of training are, according to the National Qualification Framework levels, on levels 1 to 4 (NQF levels).

Table 2: Nature of teacher training

<table>
<thead>
<tr>
<th>Duration and nature of training</th>
<th>Developed Schools</th>
<th>Disadvantaged Schools</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nursery</td>
<td>Primary</td>
</tr>
<tr>
<td>1-year ECD certificate/diploma</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>2-year ECD certificate/diploma</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>0%</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>3-year ECD certificate/diploma</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>5%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>3-year Foundation Phase/ Junior Primary</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>16%</td>
<td>60%</td>
<td></td>
</tr>
<tr>
<td>4-year Foundation Phase (Gr. R, 1, 2, 3)</td>
<td>15</td>
<td>3</td>
</tr>
<tr>
<td>79%</td>
<td>30%</td>
<td></td>
</tr>
<tr>
<td>Total schools 51</td>
<td>19</td>
<td>10</td>
</tr>
</tbody>
</table>

Non-governmental institutions offer one to three years training in ECD, and 22% of trained teachers in the study obtained such a qualification. A further 30% are competent to teach Grade 1 to Grade 3, and possess a three-year Foundation Phase qualification, which excludes Grade R. Only 48% of the teachers possess an appropriate University or Teachers’ College qualification that equips them with the knowledge and skills to teach Grade R. Only 31% of the teachers in the study acknowledged that their pupils were previously enrolled in a pre-primary school, nursery school or day-care centre. The importance of the appropriate training to teach Grade R is emphasised by the number of learners who do not receive the necessary exposure, or stimulation, before entering Grade R, to ensure learning readiness. For some of the learners it is the first
time that they are exposed to informal and formal activities in a group context. The one-year EDC training, of which only 49% of the study population possessed sufficient training, is orientated towards the care of small children, and is not appropriate to stimulate learners in Grade R up to the level that is required for school readiness.

**Teacher-learner ratio**

Although there were no statistically significant differences in teacher-child ratios in nursery and primary schools in developed and disadvantaged schools (\( t = 0.11 \)), the mean number of learners per teacher in disadvantaged schools is 31 as compared to 27 in developed schools. Learner numbers in the different schools varied from nine learners per class, in very small one-man nursery schools, to 60 in disadvantaged schools. The mean ratio of teacher/learner in developed schools at nursery schools was 26 per teacher and 28 in primary schools. In disadvantaged schools there were 32 learners per teacher in the nursery schools and 31 in primary schools. The DoE does not indicate large differences between disadvantaged and developed schools. This mean ratio is also within the parameters that are recommended by the DoE.

**Time spent on inside and outside play and free play**

The next aspect, which can be considered as limiting to the full development of perceptual motor skills of Grade 1 learners, is the time spent on directed activities within and outside the classroom, as well as on free-time play. Table 3 contains the results in this regard.

Most of the schools (disadvantaged/developed) spend between 15 and 20 minutes on activities inside the classroom and some nursery schools spend 40 – 50 minutes. In developed schools Grade R learners in primary schools spend significantly less time on classroom activities than nursery school children (\( p = .04 \), effect size \( \phi = 0.53 \)). In disadvantaged schools there is no significant difference in time spent inside the classroom between nursery and primary schools (\( p = 0.38 \), and in general there was also no difference between the developed and disadvantaged schools (\( p = 0.77 \), \( \phi = 0.15 \)). The norm is that Grade R learners should have 45 minutes to an hour free-time play outside the classroom, as was prescribed before the OBE system was implemented.

No significant differences were found in time spent outside the classroom in primary schools or nursery schools in any of the developed or disadvantaged schools (\( p = 0.14 \) and 0.12 respectively). The children mostly spent between 15 and 30 minutes of playing outside. In developed schools, nursery school learners spent significantly more time on free-time playing than primary school children (\( p = .0.01 \), effect size \( \phi = 0.70 \)). In disadvantaged schools there was no significant difference in the time spent on free-time playing in primary and nursery schools (\( p = 0.14 \)). In general the time spent on free-time playing at developed schools was more than at disadvantaged schools; the difference is of practical significance (\( p = 0.01 \), \( \phi = 0.65 \)). In some instances time spent on free-time play at developed schools was more than 60 minutes per day. In
disadvantaged schools most Grade R classes follow the same timetable as Grade 1 to 3 classes. In break time children get food from the school-feeding scheme that reduce free playtime. In some disadvantaged schools only 20 minutes free play per day was mentioned.

Available space for playing and movement at schools

It is clear that the space available in classrooms, and in outside playing areas, differs considerably from site to site.

No significant differences in the size of the classroom at primary and nursery schools were found in any of the developed, or disadvantaged schools (p = 0.47 and 0.92 respectively), and 77% of the schools have classroom areas smaller than 80 square metres. The outside playing area at schools was also determined by the questionnaire. Depending on the number of learners that each nursery school accommodates, some schools only had one Grade R class, whereas bigger schools accommodated up to six Grade R groups. The primary schools with a quintile 5-grading had separated fenced playing areas for Grade R groups. The size of the playground varied from school to school-based on the number of Grade R groups.

Primary schools with Grade R classes in previously disadvantaged areas and informal settlements had little equipment on the playground for the Grade R learners. In informal settlements, there were sometimes 30 children housed in a makeshift structure, which served as a nursery school and playgroup, and the outside playground was very small (Erasmus, 2008).

Regulations for fixed surfaces for inside and outside playing areas were determined before 1994 by the DoE. This is, however, not applicable in the current education system.

No significant difference in the outside playground for primary and nursery schools in any of the developed or disadvantaged schools were found (p = 0.79 en 0.41 respectively). Developed schools did, however, possess larger outside playgrounds in general than disadvantaged schools (p = 0.04, phi = 0.74). The playgrounds of developed schools (53%) were greater than 900 square metres, while 64% of the disadvantaged schools were smaller than 600 square metres.

Availability of apparatus and equipment at schools

Table 3 indicates the percentage of schools that possessed none of the more important equipment that should be available. Table 4 indicates schools, which had no fixed structures. The movement activities indication that was requested of the schools can be subdivided into three groups: self-manufactured equipment (‘bottle catchers’ made from recycled plastic containers); equipment which is obtainable (waste materials like old/used tyres, wooden poles, concrete pipes); and equipment which can be bought or supplied by the education department.
Table 3: Number and percentage of schools that do not possess any loose equipment

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Developed school</th>
<th>Disadvantaged School</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nursery</td>
<td>Primary</td>
</tr>
<tr>
<td>Push wheels</td>
<td>2 (17%)</td>
<td>1 (20%)</td>
</tr>
<tr>
<td>Balance beam</td>
<td>3 (25%)</td>
<td>1 (20%)</td>
</tr>
<tr>
<td>Loose tyres</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Bottle catchers</td>
<td>4 (33%)</td>
<td>2 (40%)</td>
</tr>
<tr>
<td>Kick &amp; catch</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Go-carts/wagons</td>
<td>3 (25%)</td>
<td>3 (60%)</td>
</tr>
<tr>
<td>Rackets</td>
<td>1 (8%)</td>
<td>1 (20%)</td>
</tr>
<tr>
<td>Crates/chests</td>
<td>5 (42%)</td>
<td>3 (60%)</td>
</tr>
<tr>
<td>Boxing bag</td>
<td>2 (17%)</td>
<td>2 (40%)</td>
</tr>
<tr>
<td>Hoops</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Hobby horses</td>
<td>4 (33%)</td>
<td>5 (100%)</td>
</tr>
<tr>
<td>Sticks/pipes</td>
<td>7 (58%)</td>
<td>5 (100%)</td>
</tr>
<tr>
<td>Skipping ropes</td>
<td>1 (8%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Big balls</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Small balls</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Sand bags</td>
<td>3 (25%)</td>
<td>2 (40%)</td>
</tr>
<tr>
<td>Material bags</td>
<td>6 (50%)</td>
<td>2 (40%)</td>
</tr>
<tr>
<td>Moveable ladder</td>
<td>7 (58%)</td>
<td>4 (80%)</td>
</tr>
</tbody>
</table>

It is clear that although disadvantaged schools have a great need for this loose equipment; it is the poorer disadvantaged schools that have the least equipment.

Table 4: Number and percentage of areas with a great shortage of loose equipment

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Developed schools</th>
<th>Disadvantaged schools</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nursery</td>
<td>Primary</td>
</tr>
<tr>
<td>Small swing</td>
<td>1 (8%)</td>
<td>2 (40%)</td>
</tr>
<tr>
<td>Large swing</td>
<td>0 (0%)</td>
<td>1 (20%)</td>
</tr>
<tr>
<td>Balance beam – unstable</td>
<td>3 (25%)</td>
<td>3 (60%)</td>
</tr>
<tr>
<td>Balance beam – stable</td>
<td>2 (17%)</td>
<td>2 (40%)</td>
</tr>
<tr>
<td>See-saw</td>
<td>5 (42%)</td>
<td>3 (60%)</td>
</tr>
<tr>
<td>Jungle gym</td>
<td>0 (0%)</td>
<td>1 (20%)</td>
</tr>
<tr>
<td>Slide</td>
<td>4 (33%)</td>
<td>2 (40%)</td>
</tr>
</tbody>
</table>
As is the case with the loose equipment, it is clear from Table 4 that although disadvantaged schools had a shortage of outside equipment, it is especially primary schools in these areas, which had practically no equipment. Skipping ropes were about the only equipment that was practically available everywhere.

Table 5: Number and percentage of schools without painted patterns

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Developed schools</th>
<th>Disadvantaged schools</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nursery</td>
<td>Primary</td>
</tr>
<tr>
<td>Open area (running)</td>
<td>3 (25%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Hanging bridge</td>
<td>3 (25%)</td>
<td>4 (80%)</td>
</tr>
<tr>
<td>Balancing boards</td>
<td>3 (25%)</td>
<td>3 (60%)</td>
</tr>
<tr>
<td>Platform roundabout</td>
<td>7 (58%)</td>
<td>4 (80%)</td>
</tr>
<tr>
<td>Slide</td>
<td>3 (25%)</td>
<td>0 (0%)</td>
</tr>
</tbody>
</table>

Table 5 indicates that 80% of nursery schools and 89% of primary schools in disadvantaged areas and 42% and 40% in developed schools respectively had no painted geometrical shapes. These patterns, which are especially important for perceptual motor development, can be made with little cost to the schools, as most of the schools possess cement surfaces. At developed schools more painted lines and footprints were found at primary schools than at nursery schools, while 75% of disadvantaged and 40% primary schools had no ‘hop scotch’ lanes. In the disadvantaged group no painted lines, footsteps and ‘hop scotch’ patterns were found at primary schools, while 20% of disadvantaged nursery schools, no footsteps or hop scotch lanes were found. No disadvantaged nursery school had a cycle lane, while one (11%) disadvantaged primary school had a cycle lane. Two (17%) developed nursery schools and one developed primary school had a cycle lane.
Young children enjoy playing on lines and patterns and learn skills such as balancing and gross motor coordination while they play. Cycling is advantageous to general muscle growth and balance development.

Various schools possessed equipment, which was not listed on the questionnaire. Equipment mentioned was large wooden constructions, outside dollhouses, tree houses, car wrecks with seats and steering wheel, ‘cars’ built of wood and avenues where go-carts can ride. Some schools had planted poles of various lengths to exercise balancing. Quintile 4 and 5 schools all had sand pits and were equipped to offer water games.

**Discussion of the results**

The aim of the investigation was to determine the presence of physical deficiencies that can hinder perceptual motor development and school readiness preparation of children. Deficiencies were identified in every aspect of the schooling of Grade Rs.

**Teacher training**

A large number of teachers did not possess the necessary training for teaching in Grade R and that influences the learners’ perceptual motor development and therefore their learning readiness. Learning readiness in young children must be emphasised.

**Playing equipment and apparatus**

Schools in informal settlements and deprived communities exhibited a great deficiency in playing equipment and apparatus. As a result learners could not receive sufficient perceptual motor stimulation. At provincial level, the DoE already started supplying schools with playing apparatus in a limited capacity. Disadvantaged schools had a greater shortage of loose equipment, especially primary schools. Skipping ropes were the only apparatus that was available anywhere. Some of the schools had limited equipment and some of the teachers used their own equipment in classes. Some of the schools, especially in informal settlements and deprived neighbourhoods, had almost no equipment and did not have any developed outside playground with jungle-gym apparatus, swings and possessed limited movement areas.

**Time spent on physical activity**

Especially in primary schools, not enough time is spent on physical activity; both directed and free play activities.

**Recommendations**

The importance of ECD, which forms the basis upon which learning is built, must as a result be brought to the attention of school principals and school governing bodies. School principals must ensure that teachers, who are responsible for Grade R classes, receive the necessary training and that not any available teacher be used to teach
Grade R classes. If the minister of basic education can set guidelines, the problem can be addressed and promoted at national level.

If movement development and physical activity were to take its proper place in the school programme, it would be to the advantage of the learners. In the report for the adaptation of the NCSs, as presented by the current minister of education, Angela Motshekga, physical education is prescribed as a subdivision of general studies and Foundation Phase learners must be exposed to it for at least two hours per week (DoE, 2009).

Factors that influence development, such as perception, spatial orientation, reasoning and understanding, coordination, gross and fine muscle development, as a result of deficiencies were identified in this study. These deficiencies can have a direct impact on the learning readiness of Grade R learners. It is recommended that principals must ensure that teachers, who are responsible for Grade R classes, receive the proper training to teach Grade R learners and the DoE should supply schools with equipment and resources which will enable the promotion of learning readiness and that equipment and apparatus must be maintained. A further recommendation is that primary schools should have a separate fenced playground for Grade R to Grade 3 learners. The DoE is in the process of providing jungle gyms and other equipment for Foundation Phase learners at disadvantaged primary schools. As schools do not have the necessary fenced playgrounds for Foundation Phase learners, equipment is being used by the older children and not for its specific purpose.

School principals in conjunction with the community can attempt to better equip playgrounds, more specifically, playgrounds for Grade R learners. Innovative Grade R teachers can, by means of workshops, obtain knowledge on how to make various playing apparatus and resources from waste materials (Peeters, 2008).

From the data in this article it is clear that diversity in the Republic of South Africa stretches further than its different population groups. The constitution gives each child the right to education. According to data collected in this study the following plays a big role, which limits or prevents the equal rights of certain Grade R learners: A deficiency in playing apparatus, resources and equipment in Grade R classes should also be addressed.

Children from privileged backgrounds enter the schooling system at greater advantage than children from impoverished homes. Due to the discrepancies between home and the school and negative schooling experiences, the vast majority of children in schools within impoverished neighbourhoods that provide a poor learning environment are disadvantaged. There is, therefore, a need to provide equal opportunities and access for all children (DoE, 2000, p. 12).

If the officials in educational and provincial head offices attend to findings and recommendations in articles such as this deficiencies within the education system regarding Grade R learners will be limited.
Conclusion

In the results of the study it shows that teachers are not sufficiently trained for the early child developmental needs within the education environment. Many schools are under-supplied in terms of resources and equipment. The level of learning readiness of Grade R learners is determined by perceptual motor stimulation in the pre-school phase. It seems as the influence of knowledge and teaching experience of teachers and availability of teaching aids and equipment has an immense effect.

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Levels of well-being and involvement of young children in centre-based provision in the Free State Province of South Africa

Abstract
This article reports on a study that examined the levels of young children's well-being and involvement in centre-based provision (birth to five years) at child, group and setting level in Free State, South Africa. The study was funded by the Flemish Department of Education and was executed in collaboration with the Free State Department of Education and the University of Free State. Nineteen settings were included in the study. The average setting was registered for 121 children (with ratios varying from 30 to 326 children registered). Foundation Phase students from the 2nd and 3rd year of study at the University of Free State collected data through observation tools designed by the Centre for Experiential Education at Leuven University, Belgium. The core instrument uses the Leuven scales for well-being and involvement. Results of the study indicate that overall scores for well-being and involvement are low, but also that there are huge differences between different groups and settings. Thus, indicating that early childhood education in centre-based provision makes a difference.

Keywords: well-being, involvement, early childhood, South African Childhood Education, centre-based provision
Introduction

Early childhood development (ECD) services are receiving considerable attention from policy makers, service providers and families across the globe (Britto, Yoshikwa & Boller, 2011). In South Africa policies, law, care and education programming for ECD are framed in support of children’s rights to survival, development, protection and full participation in society (Department of Education, 2001; Biersteker & Dawes, 2008; Ebrahim, 2010). A recent study on addressing exclusion and invisibility in ECD in South Africa draws attention to the value of focusing on the well-being and involvement of children in both center, and home-based, learning environments (Save the Children & Bernard van Leer, 2010).

These constructs, as defined by the Centre for Experiential Education at Leuven University in Belgium, suggest that well-being involves the basic needs of children being satisfied, and refers to the degree to which children feel at ease. Involvement, on the other hand, refers to developmental processes. This concept is closely linked to Csíkszentmihályi’s (1979) concept of flow and to what Bronfenbrenner and Ceci (1994, p. 572) refer to as an intense ‘proximal process’.

Taking into account the importance of paying attention to well-being and involvement of young children, the study reported in this article aimed at filling the gaps in knowledge about the levels of young children’s well-being and involvement in early childhood settings in Free State, South Africa.

Outlining the lives of children from birth to five years in South Africa

Ebrahim (2010), while tracing the trajectory of early childhood care and education in South Africa, argues that a complex relationship exists between the provision for the early years and the political, economic, social and cultural features of the South African society. She notes that the advent of democracy led to greater political will and acknowledgement of the complexity of young children’s lives.

In mid-2008, South Africa’s total population was estimated at 48.7 million, of whom 18.7 million were children under the age of 18 (Statistics South Africa, 2003-2009). Children therefore constitute 39% of the total population. Nationally 43% of children under five are exposed to some form of ECD stimulation (UNICEF, 2010). Approximately 36.8% of children in the Free State are the most likely to have access to centre-based provision (Statistics South Africa: General Household Survey, July 2009).

This type of provision is valuable for shaping the outcomes for children in the developing world. Longitudinal studies tracking children’s exposure to centre-based preschool education showed improvement in the number of children entering school, children remaining at school and performance at grade level in the developing world (Engle, Black, Behrman, De Mello, Gertler, Martorell & Young, 2007).

In South Africa centre-based provision, although limited, is viewed as an important service contributing to achieving national and global targets in particular aspects of
child well-being (UNICEF, 2010). In addition to concerns of increasing access to centre-based provision for children from birth to five, the quality of programmes is becoming a key focus for investigations on improving child and family outcomes (Human Science Research Council & Early Learning Resource Unit, 2010).

In light of the above, the study reported in this article used well-being and involvement as the indicators to measure quality of ECD centre-based programmes in the Free State. The following questions were posed:

1. What is the average score for well-being and involvement for an individual child, and how are the scores spread throughout?
2. Which age group showed the highest/lowest levels of well-being and involvement?
3. What is the average score for well-being and involvement on group level, and how are the scores spread throughout?
4. Are there significant differences at group level concerning scores for well-being and involvement?
5. Is there a correlation between well-being and involvement?

**Conceptual framework**

**Figure 1: The experiential education model (Laevers & Declercq, 2011, p. 16).**

What constitutes quality in ECD? From the point of view of the parent, the curriculum developer, and quality improvement programmes, the question is often answered by expressing expectations with regard to the educational context and the practitioners’ actions: the infrastructure, the content of activities, interaction style, the daily organisation and so on. Internationally in research, this is often measured by using environment rating scales, such as ECERS-R or ITERS-R (Harms, Cryer & Clifford, 2003).

From the point of view of policy and government, there is a more direct reference to the expected outcomes. With regular assessments the system of care and education is forced to get results. This leads to the development of curricula, e.g. the Free State preGrade-R curriculum (birth to four years), expressing the expected outcomes of quality ECD programmes.
In the middle of this stands the child, living and experiencing activities in centre-based provision. How can he, or she, link context and outcome? Internationally, it is often argued that the most important actor in research in ECD – the child – is neglected: “Children are too often statistically invisible. Countries need to regularly collect more high-quality information on children’s well-being that is nationally and internationally comparable. Such information is urgently required to regularly and independently monitor child well-being over time at all stages of the child’s life cycle” (OECD, 2009).

In this article, we emphasise that what constitutes quality in early childhood settings can be expressed by focusing on two dimensions namely; the degree of well-being and the level of involvement of children, giving children the central place they deserve. This is the missing link between context and outcomes, and expresses what the learning environment is doing to the children here and now. It also tells us, something about the potential impact.

**Well-being**

A variety of approaches attempt to explain child well-being by utilising language of academic discourse, such as emotional intelligence, health, social competence, academic achievement or emotional development, to name but a few. It can be argued that although there is a growing body of research that works on the understanding of what constitutes well-being, this multi-faceted and complex term can refer to a variety of terms depending on the discipline, concern, culture and/or society in which the child lives (Gill, 2009, p. 2).

Fraillon (2004, p. 19) explains that well-being was initially considered to be a component of an overarching construct of health, but argues that more recently health has been regarded as an overarching construct of well-being. Some researchers, for example Carlisle and Hanlon (2007, p. 262-264), consider well-being as entailing happiness and positive emotions. Theorists, like Pollard and Rosenberg (2003), believe that a wide variety of different factors can have an impact on the well-being of children, and, as a result, provide a more holistic definition of well-being. Child well-being can, however, not be viewed in isolation from an educational context, because the context may act as catalysts that can affect the well-being of children negatively (Fraillon, 2004, p. 17). In fact, Mayr and Ulich (2009, p. 45) emphasise that the well-being of children is a central indicator of the quality of educational institutions and processes.

Morrow and Mayall (2009, p. 221) argue that in any educational institution the concept of well-being must be interpreted within the context of cultures and the nation. In order to apply the concept of well-being to the South African context, the proposed conceptual framework for this article is situated in the process-orientated approach developed by the Research Centre for Experiential Education, University of Leuven. We have chosen the experiential education model, because it provides a common basis on which the complex and multifaceted lives of children in Free State educational settings can be investigated. It is hoped that this framework will orientate our critique of the various aspects that influence the well-being of learners. We cannot
determine how children are doing in a setting if we do not first investigate the well-being of children.

In this article, well-being refers to the degree to which children feel at ease, act spontaneously, are open to the world, express inner rest and relaxation, show vitality and self-confidence, and are in touch with their feelings and emotions; thus, indicating that their mental health is secured (Laevers, 2005).

Involvement

Answering the question of emotional well-being (viz. how is the child feeling at this moment?) alone is not enough. Therefore, we included a second indicator: involvement. This is linked to developmental process and urges the adult to set up a challenging environment favouring concentrated, intrinsically motivated activity.

The concept of involvement refers to a dimension of human activity. Involvement is not linked to specific types of behaviour, or to specific levels of development. Csikszentmihayli (1979) speaks of “the state of flow”, of which one of the most predominant characteristics is concentration. Involvement is associated with strong motivation, fascination and total implication: there is no distance between person and activity, and no calculation of the possible benefits. Because of that, the perception of time is distorted (time passes by rapidly). Furthermore, there is openness to (relevant) stimuli, while the perceptual and cognitive functioning possesses an intensity that is lacking in activities of another kind. The meanings of words and ideas are felt more strongly and deeply. Further analysis reveals a manifest feeling of satisfaction and a bodily felt stream of positive energy. The “state of flow” is sought actively by people. Young children find it most of the time in play. Of course, one could describe a variety of situations where we can speak of satisfaction combined with intense experience, but not all of them would match our concept of involvement.

Involvement is not the state of arousal easily obtained by the entertainer. The crucial point is that the satisfaction stems from one source; the exploratory drive, which entails the need to get a better grip on reality, the intrinsic interest in how things and people exist in the world, and the urge to experience and figure things out. Only when we succeed in activating the exploratory drive do we get the intrinsic type of involvement, and not just involvement of an emotional or functional kind. Finally, involvement only occurs in the small area in which the activity matches the capabilities of the person, that is in Vygotsky’s “zone of proximal development” (Laevers, 1993).

Involvement entails an intense mental activity, during which a person is functioning at the very limits of his or her capabilities, with an energy flow that comes from internal sources. One cannot think of any condition more favourable to real development. Involvement answers the question of how interested a child is in a given setting.

Status of well-being and involvement as indicators

We favour the view of well-being and involvement as process variables, meaning that it looks at the what, here and now, in interaction with the environment and what
happens within the child. As a consequence, well-being is not a stable feature of a child, but the result of complex interaction between more or less stable features of the child (for example, positive self-image) and features of the environment (for example, a sensitive teacher or an environment conducive to learning). One can imagine that a child experiencing a lot of small moments of high well-being in centre-based provision will have an impact on the structural features of a child, which, in turn, will impact on the moments of well-being. Well-being and involvement are constructed and reconstructed in constant interaction with the broader living and learning environments.

Observation of well-being and involvement is an effective and unique measure of programme quality. The observation not only discriminates between levels of quality, but also focuses directly on child behaviour and child experience, thus offering a much needed supplement to global and teacher-related measures. The observation of well-being (affective aspect) and involvement (cognitive aspect) is both uncomplicated and expeditious, making it an ideal measure for use by licensing personnel, as well as, childcare staff. These two indicators are the minimum one can expect from every ECD programme. A qualitative ECD programme has to succeed in both. Only paying attention to emotional well-being and a positive climate is not enough, while efforts to enhance involvement will only have an impact if children feel at home and are free from emotional constraints.

**Research design and methodology**

This project was funded by the Flemish Department of Education in Belgium and was executed in collaboration with the Department of Education in the Free State, as well as the University of the Free State in South Africa. The duration of the project extended from November 2007 till June 2010. This article focuses on the data gathered between February and March 2010 by 79 students in selected ECD settings in the Free State.

The Free State Department compiled a list of 100 ECD sites in poor and rural areas of the Free State. From this list a total of 23 settings and 37 groups were visited. In each group a random sample of 20 learners were observed. Because of different reasons (see “compiling the definitive data set”), not all the gathered data could be used. This article is based on the data of 29 groups within 19 settings.

The observations for this study were done by trained 2nd and 3rd year Foundation Phase students. Observation was used as a tool to gather data on experiences of children. Literature shows that this technique is particularly useful for the gathering of data on the behaviour of children (McMillan & Schumacher, 2006, p. 9; Mwamwenda, 2004, p. 13). Davin and Van Staden (2005, p. 243) note that this can be an outcome when careful and meticulous observation includes watching attentively and focusing on specific aspects of activities that children are engaged in. With the use of the Leuven Scales for well-being and involvement (Laevers, 2005) the experiences of children by observation was grasped. This data set was used as a direct indicator for the quality of the ECD setting.
Not everything is grasped by observation. To be able to fully understand the ECD reality and to add qualitative information to the observations, an interview with the responsible practitioner was conducted. It enabled the student observer to clarify misunderstandings that arose during the observation and to gain additional information. Student-researchers were also asked to keep a reflective journal, in order to record their experiences.

Prior to the study consent was sought from the Free State Department of Education, the student-researchers and the participants at the sites. Every attempt was made to adhere to the ethical guidelines for involving human subjects in research, particularly regarding informed consent, voluntary participation and the confidentiality of information.

Compiling the definitive data set

In total data of 79 different observers covering 23 settings and 37 different groups was received. In order to get rigid data, a triple selection was undertaken:

- To check validity and reliability of the observations, all observers were asked to perform a reliability test (by scoring 15 video excerpts for well-being and 15 for involvement) to check how reliable and valid their scores for well-being and involvement were. Data of observers who did not perform well on the test (this is a result with less than .70 correlation, using the ICC-norm whereby the results on the test are compared with the expert scores) were excluded.
- Observers who did not conduct a reliability test were excluded.
- If several observers observed the same group, an at random selection of data of only one observer was included. All data of the other observers in the same group were excluded.

The consequence is that the data presented is based on a much smaller sample than initially gathered. Data of 29 observers composed of 19 settings and 29 different groups were retained for analysis.

The smallest setting was registered for 30 children, the biggest one for 326 children. The average setting was registered for 121 children. The adult/child ratio was also registered. In general there was one adult available for 25 children. For the youngest age group (0-2 year) the ratio was slightly better with one adult for 14 children.

Findings on well-being and involvement

Child level

An at random sample of children was observed. In total, the definitive dataset consisted of 409 individual scores for involvement, and 224 scores for well-being. The average involvement was 2.96 on a five-point scale. Well-being was with 3.04, on a five-point scale, slightly higher. In both cases, the standard deviation was high,
indicating the big differences in scores between children. There was a significant, but moderate correlation \( r = .66, p < .001 \) between the two quality indicators; well-being and involvement. This interlinking of well-being and involvement is understandable, and is also evident in other research.\(^3\)

Table 1: N, mean and standard deviation for well-being and involvement (child level)

<table>
<thead>
<tr>
<th>Child level</th>
<th>Well-being</th>
<th>Involvement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>-------------</td>
<td>---</td>
<td>------</td>
</tr>
<tr>
<td>224</td>
<td>3.04</td>
<td>1.21</td>
</tr>
</tbody>
</table>

Indoors-Outdoors

In a standard observation, the observer did one observation (= this is one scanning round of 10 children) indoors and one observation outdoors. Both for well-being and involvement, the results outdoors were lower than the results indoors. The independent samples t-test, however, did not reveal significant differences (well-being: \( t(182) = 1.216, p = ns \); involvement: \( t(367) = 1.391, p = ns \)).

Spreading of well-being and involvement

For well-being (N = 224) we concluded that almost 32% of the children did not feel good at the moment of the observation (scores 1 and 2). Approximately a third of the children (34%) felt rather neutral (scores 2+ to 3+). Another third (34.4%) felt good to very good in the setting (scores 4 and 5).

For involvement (N = 409), we concluded that 38.4% of the children were not busy during the observation (scores 1 and 2); approximately a fifth of the children (22.5%) were doing active things without real investment of their possibilities (scores 2+ to 3+). More than a third of the children (39%) were performing in top gear (level 4 or 5) at the moment of the observation.

Table 2: N, spreading and percentage for well-being and involvement (child level)

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>%</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low/very low</td>
<td>1</td>
<td>25</td>
<td>74</td>
<td></td>
</tr>
<tr>
<td>1+</td>
<td>5</td>
<td>31.7%</td>
<td>3</td>
<td>38.4%</td>
</tr>
<tr>
<td>2</td>
<td>41</td>
<td></td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>2+</td>
<td>9</td>
<td></td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td>3</td>
<td>61</td>
<td>79</td>
<td>22.5%</td>
</tr>
<tr>
<td>3</td>
<td>6</td>
<td>33.9%</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>3+</td>
<td>43</td>
<td></td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>High/very high</td>
<td>4+</td>
<td>4</td>
<td>34.4%</td>
<td>7</td>
</tr>
<tr>
<td>5</td>
<td>30</td>
<td></td>
<td>53</td>
<td></td>
</tr>
<tr>
<td></td>
<td>224</td>
<td></td>
<td>409</td>
<td></td>
</tr>
</tbody>
</table>
Figure 2: Histogram with normal curve for well-being (child level)

Mean = 3.04
Std Dev. = 1.212
N = 224

Figure 3: Histogram with normal curve for involvement (child level)

Mean = 2.96
Std Dev. = 1.322
N = 409
Age groups
For all observations, the observers noted down the age of the observed child. For well-being we received data about the age of 190 children, for involvement 375 children were included.

Table 3: N, mean and std. deviation for well-being and involvement, linked to age groups (child level)

<table>
<thead>
<tr>
<th>Child level</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-2 year</td>
<td>12</td>
<td>3.00</td>
<td>.98</td>
<td>17</td>
<td>2.12</td>
<td>1.11</td>
</tr>
<tr>
<td>2-3 year</td>
<td>42</td>
<td>2.65</td>
<td>1.35</td>
<td>59</td>
<td>2.71</td>
<td>1.23</td>
</tr>
<tr>
<td>3-4 year</td>
<td>54</td>
<td>2.95</td>
<td>1.18</td>
<td>111</td>
<td>2.92</td>
<td>1.33</td>
</tr>
<tr>
<td>4–5 year</td>
<td>39</td>
<td>3.02</td>
<td>1.35</td>
<td>128</td>
<td>3.11</td>
<td>1.19</td>
</tr>
<tr>
<td>5-6 year</td>
<td>36</td>
<td>3.35</td>
<td>.98</td>
<td>53</td>
<td>3.10</td>
<td>1.47</td>
</tr>
<tr>
<td>6+</td>
<td>7</td>
<td>2.71</td>
<td>1.31</td>
<td>7</td>
<td>2.43</td>
<td>1.51</td>
</tr>
<tr>
<td>Total</td>
<td>190</td>
<td>3.04</td>
<td>1.21</td>
<td>375</td>
<td>2.96</td>
<td>1.32</td>
</tr>
</tbody>
</table>

To know if well-being and involvement are influenced by age, we did an ANOVA on the data of single age groups. In total, 190 scores for well-being and 375 scores for involvement were included in this analysis. For well-being we did not get indications of significant differences, linked to age (well-being: F(5,184) =.1.307, p = ns). For involvement, however, there was an age difference (F(5, 369) = 2.621, p < 0.05). When looking closer only the observed difference in mean involvement between the youngest group and the 4-5 year olds was significant. Older children displayed significantly higher levels of involvement. Yet, the number of observations per age group is quite limited, and future analyses including more observations, is needed to draw any firm conclusions on this matter.

Table 4: Comparison of mean score for well-being, involvement and age group (child level)

<table>
<thead>
<tr>
<th>Involvement</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>Means with the same letter don’t differ significantly from each other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-2 year</td>
<td>17</td>
<td>2.12</td>
<td>1.11</td>
<td>A</td>
</tr>
<tr>
<td>2-3 year</td>
<td>59</td>
<td>2.71</td>
<td>1.23</td>
<td>A</td>
</tr>
<tr>
<td>3-4 year</td>
<td>111</td>
<td>2.92</td>
<td>1.33</td>
<td>A</td>
</tr>
<tr>
<td>4–5 year</td>
<td>128</td>
<td>3.11</td>
<td>1.19</td>
<td></td>
</tr>
<tr>
<td>5-6 year</td>
<td>53</td>
<td>3.10</td>
<td>1.47</td>
<td>A</td>
</tr>
<tr>
<td>6+</td>
<td>7</td>
<td>2.43</td>
<td>1.51</td>
<td>A</td>
</tr>
</tbody>
</table>
**Group level**

In total, 29 different groups were observed. In most of the groups, both an observation indoor and an observation outdoors took place. We noticed no significant differences between indoor- and outdoor observations. For this reason, we will base the following analyses on the group mean of indoor and outdoor scores together. Most of the group means were based on 20 individual scores (= 2 scanning rounds of 10 children/observation).

**Categories**

Which mean level can we consider as sufficient or even excellent? The answer cannot be given by statistics alone. An approach is to imagine what kind of quality we want to receive at the level of experiences of children. Amongst users of the scales (Laevers, 2009) there is a consensus that 3.50 is a critical point and can be considered as a minimal acceptance.

For well-being, almost all of the observed groups have a group mean fewer than 3.50. This is no surprise, since also in the spreading at child level; the majority of the scores (66%) are beneath 3.50.

For involvement we get a similar picture. The majority of groups (81.5%) have a group mean beneath 3.50.

**Table 5: Synthesis mean well-being (n = 12) and involvement (n = 22) [group level]**

<table>
<thead>
<tr>
<th>Mean</th>
<th>&gt;2.50</th>
<th>[2.51-2.75]</th>
<th>[2.76-3.00]</th>
<th>[3.01-3.25]</th>
<th>[3.26-3.50]</th>
<th>[3.51-3.75]</th>
<th>[3.76-4.00]</th>
<th>&lt;4.01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well-being</td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>8%</td>
</tr>
<tr>
<td></td>
<td>[8%]</td>
<td>[25%]</td>
<td>[42%]</td>
<td>[8%]</td>
<td>[8%]</td>
<td>[8%]</td>
<td>[8%]</td>
<td></td>
</tr>
<tr>
<td>Involvement</td>
<td>1</td>
<td>6</td>
<td>8</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>4.5%</td>
</tr>
<tr>
<td></td>
<td>[4.5%]</td>
<td>[27%]</td>
<td>[36%]</td>
<td>[4.5%]</td>
<td>[9%]</td>
<td>[14%]</td>
<td>[4.5%]</td>
<td></td>
</tr>
</tbody>
</table>

**Synthesis**

**Child level**

As a province, the received image out of the child observations indicates that quality ECD-programmes are in urgent need. A third of the children are feeling neutral and for another third of the children, well-being is worrying (score 1 or 2) at the moment of observation: emotional development of these children may be at risk. A similar picture is received for involvement. Only 39% of the children are developing and learning at the moment of observation (score 4 and 5). More than a third of the children are bored when we observed them at a random moment (score 1 and 2).
Group level

One could argue that this can all be explained by the deprived background of most of the observed children, thus, this would neglect the influence of the educational context and the fact that this context may act as a catalyst that can change well-being of children, as stipulated by Fraillon (2004). As argued above we see well-being and involvement not as child features, but as the result of complex interaction between features of the child and features of the environment, thus, indicating something of the quality of the learning environment, in turn. If so, differences between groups will be evident, since the sample of ECD-settings are all recruited in similar poor and rural areas. This is linked to differences in the quality of the educational context as well. Analysis on group level reveals these differences. Both for well-being and involvement we get a broad range of mean scores (see Table 5). In other research linking environment rating scales to the scores for well-being and involvement we have confirmation that the learning environment has a strong influence on well-being and involvement. The learning environment (defined in five dimensions; offer, group climate, room for initiative, organisation and style) is responsible for 28% of the differences in well-being and 40% of the differences in involvement at group level after multilevel analysis (Laevers & Declercq, 2011).

Discussion

In this study we attempted to gain a picture of well-being and involvement of young children in centre-based early childhood settings in the Free State. The findings show that the overall scores for well-being and involvement are low, but also that there are huge differences between individual groups.

The average adult-child ratio in a Free State ECD-setting is worrying. Often there are a lot of children in a setting with only a few adults available. The average number of adults/child is 1 adult for 25 children. For the baby and toddler group (0-2 year), the average is, with 1 adult for 12 to 14 children, slightly better. In qualitative notes, two observers (different settings) mention that teachers do not get a wage, but work for charity. Another observer states that “Teachers are underpaid and this is what discourages them.” A lot of practitioners mention, during the interview, that it is the love for children that keeps them going. This underlines the urgent need to invest in staff for ECD.

Both well-being and involvement of a lot of children, observed at an at random moments is worrying. The mean ‘well-being’ is with 3.04 low. If we look at the spreading, we get a picture where more than a third of the children (32%) are feeling at unease in centre based provision (score 1, 1.5 or 2 for well-being). Another third are feeling rather neutral (score 2.5, 3 or 3.5 for well-being). In the qualitative data, we get indications to explain this. Often basic needs of children are at risk:

Some children are orphans, live with grandparents and are HIV positive. Some children are underfed and sometimes the only food they receive is at school (breakfast and lunch).
No food, troubled family-situations and too many children in the class to get individual attention might explain some of the low levels of well-being.

For ‘involvement’ we get a similar picture: the mean is with 2.96 low and the spreading is high (1.32): 38.5% of the children are doing nothing of significance at the moment of observation, 22.5% of the children are doing routine activities, 39% are developing and learning when observed.

Although the deprived background of a lot of children can explain some of the scores, it’s not all. Given the fact that observations are done in settings with a similar (and rather deprived settings), we see enormous differences at group level concerning well-being and involvement. This is hopeful. It means that the quality of the learning environment impacts directly on the levels of well-being and involvement. In other words, it is the ECD setting that makes the difference. Groups with a group mean for well-being and/or involvement higher or above 3.50 are achieving good quality within the hardest conditions. Further qualitative research is needed to investigate the critical success factors of those settings performing well.

For teacher development and education purposes well-being and involvement are valuable. The concepts match the intuitions of many student-observers and practitioners and give them a scientifically-based confirmation. When we can get children in that ‘flow state’ (this is a level 4 or 5 for involvement), development must and will take place within the area(s) addressed by the activity. In contrast to effect variables – the real outcomes are only seen in the longer run – the process variables give immediate feedback about the quality of interventions and tell us on the spot something about their potential impact. Furthermore, foregrounding involvement and well-being as key indicators for quality, engenders a lot of positive energy and synergy: the enthusiastic responses of children are very empowering and give the practitioner deep satisfaction both at the professional and the personal level. Many observers have implemented the concepts afterwards in their own lessons and approach towards children. Well-being and involvement empower people.

A critical note on issues related to the study

- The Free State province is a large area to conquer. Transport was an issue. A taxi-shuttle was organised. In small buses groups of four to five students, with one student responsible for the group, were put together to make the observation possible and in some cases, accommodation needed to be arranged.

- At the beginning of the study safety was an issue. Most of the ECD settings are situated in areas, which are perceived as being dangerous. After the student-researchers were trained some parents raised their concerns with the Department of Education. A few requested that safety agents escort student-researchers for field visits. Some student-researchers refused to participate due to the location of the ECD settings.
At the time of the study there was no qualification directly related to early childhood education at the university. The observers were students in Primary Education (linked to the Department of Curriculum Studies). They were not familiar with specificities of early childhood education. They were more geared towards education of older children and structured teaching driven by outcomes rather than the child’s perspective and the value of free play. Whilst they were given a whole days training, which helped them to familiarise themselves with the basics of early education, more intense training before the actual observation would have made observations even stronger.

The field visits proved to be a profound experience for most student researchers. There is often a significant cultural distance between the (mainly) Afrikaner girls as observers, and (mainly) Sesotho practitioners in ECD settings. One could ask about the levels of well-being of the student observers. Did the observers feel at ease in the setting? The same question can be asked about the observed practitioners: were they comfortable with strangers visiting their settings?

Language was an issue that complicated the study. Sesotho practitioners were interviewed in English by mostly Afrikaans native speakers. Both for interviewer and interviewee English was an additional language. In this context nuances are lost or more difficult to grasp.

The research tool was developed in close collaboration with researchers at the University of the Free State. However, the concepts underpinning the whole tool, well-being and involvement, were developed at the Research Centre for Experiential Education. It was also tried out in countries where culturally complexities are not as proliferated. Both concepts are broad and openly defined and suitable for a range of situations. In a country where the richness of culture and ethnicity matters, it is crucial to explore how these foundations influence the concepts of well-being and involvement.

Endnotes
1. Setting level refers to the preschool setting as a whole. Group level refers to the (age) groups or classes within the preschool. In most cases one preschool setting contains several groups.
2. Defined as “In the early phases and throughout the course of life, human development takes place through processes of progressively more complex, reciprocal interaction between an active, evolving biophysical human organism and the persons, objects and symbols in its immediate environment. To be effective, the interaction must occur on a regular basis over extended periods of time. Such enduring forms of interaction are here forth referred to as proximal processes. Examples of enduring patterns of these processes are found in parent-child relationships, child-child activities, group of solitary play, reading, learning new skills, problem solving, performing complex tasks and acquiring new knowledge and know how (Bronfenbrenner & Ceci, 1994).
3. From other research we can see that both dimensions are interlinked with a moderate correlation of .50. In other words, we expect to see some correlation (cf. Laevers, F. et al.
4. Analysis of variance (ANOVA) is a collection of statistical models, and their associated procedures, in which the observed variance in a particular variable is partitioned into components attributable to different sources of variation. ANOVA provides a statistical test of whether or not the means of several groups (in this case, the data of the single age groups) are all equal or not.

5. We have limited the database to the data of single age group groups going from birth to six years. Mixed groups are not included, since the exact age of those children is unknown. One exception is the mixed age group 0-2 years, since there is no overlap possible with the other distinct age groups.

References


Voices from different cultures: Foundation Phase students’ understanding across borders

Abstract
From “How was your day?” to “Remember the time we ...”, we use stories as a way to share our experiences, understandings and concerns with others. Stories extend our knowledge and understanding of other people and situations, other cultures and languages by including the emotional expressions of factual information. When so much of family and community life in South Africa remains insular and disconnected from other cultures, other languages and other belief systems, stories can extend boundaries beyond our single perspectives and experiences to the varying perspectives of others. This becomes particularly important for teachers of young children who may have very different life experiences from those of the children they teach. In this project, we examined storytelling as a way to cross-cultural boundaries and of harnessing the diverse worlds of South African citizens pedagogically. We asked fourth year students in a Foundation Phase teacher education programme to identify a person from a different cultural and linguistic group; and to have that person share a story with them to discover how the experience of listening to stories from different cultures, languages, and belief systems might influence their attitudes towards teaching children with those characteristic differences.

Keywords: emotional expressions, single perspectives, storytelling, cross-cultural boundaries

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Introduction

From “How was your day?” to “Remember the time we ...”, we use stories as a way to share our experiences, understandings and concerns with others. Stories extend our knowledge and understanding of other people and situations, other cultures and languages by including the emotional expressions of factual information:

[...] a story carries information about how things work and what meanings events have. In addition, stories are told to someone...by someone...who recounts the events and often presumes to know what the characters are thinking. A story also contains information about presumed intention and motivation as well as a sense of audience, of who is looking in on events. Finally, a story by its very nature resists singular interpretation [...] A story captures nuance, indeterminacy and interconnectedness in ways that defy formalistic expression and expand the possibilities for interpretation and understanding (Doyle & Carter, 2003, p. 130).

When so much of family and community life in South Africa remains insular and disconnected from other cultures, other languages and other belief systems, stories can extend boundaries beyond our single perspectives and experiences to the varying perspectives of others. This becomes particularly important for teachers of young children who may have very different life experiences from those of the children they teach. In this project, we examined storytelling as a way to cross cultural boundaries and of harnessing the diverse worlds of South African citizens pedagogically. We asked fourth year students in the Foundation Phase teacher education programme to identify a person from a different cultural and linguistic group from themselves, and to have that person share a story with them to discover how the experience of listening to stories from individuals of different cultures, languages, and belief systems might influence their attitudes towards teaching children with those characteristic differences.

Literature review: A tale of storytelling

Benjamin (2006) pointed out that we are all storytellers and stories are a part of our past, as well as our present day life experiences. Stories from our grandmother's knee, as well as from our culture, help to guide and define our identities as members of a family and cultural group, transmitting the cultural knowledge and wisdom that have helped us to survive over time. Stories structure our reality according to cultural norms, values and expectations.

Stories also serve to examine and express our own unique life experiences by giving voice to our individual identities. As we tell stories, we process events of the day, reconnect to our past, or move into the future. Our stories allow us to reflect on our values and beliefs at different points in our personal timelines. In this sense, our stories are not static, but serve as a tool of communication that allows us to “question or problematise the taken-for-granted habits and institutions of performing narrative” (Langellier & Peterson, 2004, p. 5). Actually hearing ourselves as storytellers, and seeing the reactions of our stories reflected in our listeners, can trigger new ways of thinking about the events we recount. Removed from the immediate time and place, in which
the story occurs, we can step back to re-view the story line itself, and in the company of the listeners who react to what we are telling, we may be affirmed or challenged to reconsider our own interpretations of the accounts we narrate. The personal story we tell can serve as “a powerful means of becoming aware of the taken-for-granted arrangements and constraints of one’s own culture” (Luwisch, 2001, p. 134).

However, the significance of storytelling comes in the experience of sharing it with other people. Through expressive language and sensory imagery, the storyteller attempts to admits other into her world by “neutralising the otherness and strangeness” (Luwisch, 2001, p. 134) while at the same time, listeners attempt to connect with the story and its teller. Through the platform of storytelling, individuals from dissimilar cultures can share aspects of their life-worlds in ways that inform, enlighten, and illuminate so as to better appreciate the perspectives of the other (Sax, 2006). However, the ability to appreciate the differences between storyteller and listener is dependent on the willingness of both to learn from and about the other. This can be particularly powerful for marginalised people who have the opportunity to claim their own voices and share them with others who want to hear what they have to say. However, if the listener attends with sensitivity to the stories shared by a storyteller who represents a position of cultural and linguistic difference, the listener benefits in that she becomes better able to appreciate the other person. This is particularly important for teachers of learners whose life-worlds are significantly different from their own, and who teach in settings where there is great diversity among the learners themselves.

Within the classroom setting, teachers must first build relationships with their students as unique individuals who are living and learning together as a community. This is particularly important in classrooms of teachers and learners who are different from one another culturally. Appreciating one’s own stories as a way of understanding oneself, can lead to a greater sensitivity towards others and the stories they have to share. In studies reported by Luwisch (2001), teachers who attended to their own stories and integrated them into their curriculum became more adept at engaging with their students’ concerns, pointing to the critical importance of story, as a way to personally connect with learners.

The personal connection that develops through storytelling comes through listening to another person, especially when the other person is in a marginalised or less powerful position, as is often the case with learners in classrooms. Ball (2006) points out that the pedagogical implications of listening to the narratives of students includes getting to know students as individuals, actively engaging them in lessons, holding high expectations for their performance, and connecting content to students’ lived experiences. She goes on to state that as

[...] developing teachers listen to the narrative voices of those living and working in impoverished or under-resourced schools, they can come to hear about the characteristics that this population considers important in an effective teacher [...] they can begin to hear what the students are saying about how they want their education to challenge them to become critical thinkers [...] they can begin to hear their aspirations (Ball, 2006, p. 43-44).
In their work to develop a culturally sensitive curriculum in their teacher education class, Percival and Black (2000) explored the use of stories and folktales as a method of organising their own teaching. Working from Nieto’s definition of culture as

[...] the ever-changing values, traditions, social and political relationships, and worldview shared by a group of people bound together by a combination of factors that can include a common history, geographic location, language, social class and/or religion (Percival & Black, 1992, p. 111),

they conceptualised the development of a culturally sensitive curriculum as a process of discovery where students learn to respect the differences of others. In ways similar to the work of Sommer and others (2009) who used stories to “transcend cultural boundaries”, within counselling supervision settings, this study is part of an ongoing examination of how pre-service teachers traverse cultural boundaries through storytelling.

Theoretical and conceptual framework of research

Because we are preparing our early childhood teacher education students to work with learners from diverse backgrounds and cultures, we wanted to examine a personal encounter between our students, as individual listeners to storytellers from different cultural and linguistic groups. Dewey (1938) spoke of teaching and learning as “a continuous process of reconstruction of experience”, and Sommer, Derrick, Bourgeois, Ingene, Yang and Justice (2009) noted more specifically that experiential activities can support the development of multicultural understandings. The dialectical processes of experience and reflection on experience served as the conceptual framework for this study.

Through personal encounters with people identified as culturally and linguistically different from themselves, students had the opportunity to question their personal beliefs and values in light of the stories they heard. They were encouraged to examine their own multicultural awareness, and sensitivity, within the storytelling setting, while being asked to consider how it might affect their future teaching experiences. Therefore, by combining the use of storytelling from people whose home languages and cultures are different from those of our students, we believed that we could capture the impact of border crossing on students’ understandings of the value of narrative, so as to broaden understandings of people in general and the children they would subsequently teach.

Methodology

This study took place at an urban university in South Africa where 129 students were enrolled in their final year of a four-year BEd degree programme in Foundation Phase teacher education. Students completing this course of study are qualified to teach from the Reception year (kindergarten) through to Grade 3. As part of the module students completed a storytelling assignment that included identifying a storyteller from a different cultural/linguistic group than the student, listening to an oral telling of a story
from the storyteller’s own experience or cultural background, and completing a written response to a guided reflection that was submitted with the completed project.

Of the 129 students enrolled in the module, 85 students completed the assignment in Afrikaans. They were all native Afrikaans speakers and identified themselves as Afrikaans South Africans. The remaining 41 students who comprised the ‘English-speaking’ group were all female South Africans, and included white Western European students, one Indian student, and three Black South African students whose first language was not English. To answer the question, “How can we strive to understand each other across the boundaries of culture, languages and other belief systems in SA?” we analysed the reflections of the 44 students who responded in English.

Ethically, permission for this project was obtained through the University’s Ethical Clearance Committee. Both students’ and storytellers’ identities were kept confidential and all participants signed letters of informed consent to allow the use of the stories and reflections for analysis and publication.

Using a narrative inquiry approach (Charmaz, 2006) to understand storytelling as a vehicle for cultural border crossing, we coded each student reflection line by line to identify emerging themes. Once we independently coded all the reflections, we began to collapse the codes into broader themes and created memos to further explain the themes. We returned to the literature to check the veracity of the themes themselves, and the fit between the conceptual ideas we were identifying with the coded data.

Findings

What happened when students cross cultural borders to listen to stories told by members of different cultural and linguistic groups? According to our students, when they took the risk to ask someone to tell them a story, they found that their storytellers were eager to share information about themselves and relate stories that reflected their personal experiences, or that were part of their family or cultural heritage. The students learned that the stories told went beyond simply sharing information from storyteller to listener to become a conduit for teaching the students more about a culture, a language, and a person. As a result of the storytelling experience, students reported that new relationships were formed, or familiar relationships were deepened, and, as a result of their listening to others, they had a newfound respect for the storyteller and others more generally.

Meeting at the border

The essence of the storytelling encounter, the actual journey itself to meet another person through the shared experience of storytelling and listening, involves meeting at the border between the familiar and unfamiliar. This particular assignment pushed future teachers to become vulnerable in selecting storytellers who were different from themselves and this proved to be challenging for many. A few students selected family members, who were not English or Afrikaans, the dominant groups within
the university. For these students, the level of risk taking to cross a cultural border was minimal. One student focused her attention on the storytelling aspect of the assignment and said,

I decided to use my Italian grandfather as the storyteller. As a child I would spend holidays with my grandfather, as he always had the best stories to tell. From ghost stories to war stories he always had a way to entertain and teach us something new.

Many students selected people who worked within their homes or residence halls as domestics, while others sought out people within the local community. For these students, approaching their potential storytellers was personally challenging, because now they had to ask ‘favours’ from people who typically provided services to them. Although the students felt vulnerable at having to “move outside their comfort zones” to identify a storyteller who met the criteria of the assignment, they found they were greeted enthusiastically by people who were willing to share their stories with them.

I also overcame personal fears, since I am a shy person who does not like asking anyone for help, therefore when I stepped out my comfort zone and found a willing participant; it was an experience of personal growth. I was rewarded with the satisfaction of enjoyment while I was listening to the story.

Many students identified people who were in their lives, but with whom they had never really talked before. In these more informal relationships, students were clearly in a more privileged position in their daily relationship with the storyteller. The storyteller was often a domestic worker in the student’s home, or residence hall, or was a labourer in a service industry, such as a petrol attendant.

By speaking to someone who I have known for three years, but never really spoken to before was very rewarding and by listening to George I could see that he was excited that someone different was interested in his life!

I started working on it with my domestic worker, who I then realised has lived a very hard life in terms of trauma and heartbreak because of the story she chose to tell me. I also realised that I never really sit down and listen to her or ask her any questions about herself or about her life and how different it is to mine.

Given the differences in social position and class, the storytellers themselves might have felt vulnerable in sharing their personal stories with others, but for many, the opportunity to share with another person appeared to outweigh any concerns. All the students were able to find a person who would tell a story, but the students were the ones who were surprised at the willingness of the storytellers to share a personal event or a fictional story from their past.

I thought that no one would have the time or want to tell me their story. I found two people who worked at Sasol in my neighbourhood. They were eager to tell me their story [...] Sometimes, people from a lower demographic seemed to me illiterate. I found this not the case. Both my storytellers were excited to think back to their past and come up with a story.

The person I spoke to was so happy to tell me about these stories. He informed that the one he told me is merely a chapter from a whole set of stories that his family tell their young ones [...] Whilst watching him tell me the story I could see him truly taking a trip down memory lane to a place that held very beautiful memories to him [...] The security guards in my complex are always friendly and
helpful and I chose to ask David because I felt he would be more appreciative than annoyed and I was correct.

**Seeing what is on the other side of the border**

The stories that we hear from others often teach us lessons about ourselves or about life. The storytellers in this study related stories of their own personal experiences, or from their own cultures. For example, Harry, one of the storytellers, told about a trip to the coast where his family had a lovely day at the beach that ended in sunburns. His story reinforced a common experience shared by many people regardless of culture, and served as a simple exchange one might have when meeting at the border. After hearing the story the student reflected:

This simply helped to teach me about the untold stories in the world and how every memory changes the way in which you will live from that point onwards. For example, Harry’s whole family is very careful with their sun exposure since he remembers the pain his father endured from his sun burn. I am now reminded of the dangers of sun exposure and the fact that all experiences can have a positive and negative side to them.

Other stories served to teach the listeners about the different cultures and life experiences of the storytellers.

I introduced myself and he told me he was Johnny and that he is Sotho [...]. He told me about their traditions in his family and their ways and beliefs. He explained the process of getting married which was a very important topic to him. He felt bad as he explained he’s been married twice, once when he was twenty one, and then last year but is only expecting children from his new wife end of this year [...]. He explained how in his culture the men have to save and bank money in order to show his chosen wife’s father that he can support her and have children with her. Johnny explained that even once you are married you are still your family’s child and therefore you do not have to make decisions on your own.

Still other stories invited the students into a world of fable and fantasy. When her storyteller told the tale of ‘The lion and the donkey’, the participant responded.

Sarah told me a folk tale, mostly told for entertainment and she was one of the best storytellers I have ever met. I learnt so much about the art of storytelling from this woman in the short time I spent with her, about capturing your audience and using your voice, it was wonderful.

Markham’s story of the villagers’ fear towards a blind woman’s pet ‘dog’, an old retired circus lion, and their plot to dispose of the animal was spell-binding for the student who was listening.

When Markham started to tell me his story I was very curious as to how the story would turn out. I was even leaning forward out of interest. It made me realise how rare it is for people to tell each other stories in this generation. The wonder of storytelling is getting lost along with the rest of our youth’s culture.

**Speaking the language**

However, when crossing cultural borders, you sometimes have to confront challenges related to language. Sometimes the linguistic challenges were very real for both
the storyteller and the listener. Using gestures to assist in communicating with one another and telling stories was a common strategy shared by students and storytellers. However, it is interesting to note how unaware the students were of the language abilities of people they selected. For example, Lisa chose a domestic worker, of the family whose children she baby-sits, to be her storyteller. Prior to the assignment, neither knew each other well. The domestic worker was in her forties, while Lisa was in her early twenties. Lisa reported: I found this assignment to be a rather challenging one, as I encounter a few communication barriers such as the fact that Patricia’s English is rather broken and I found that at most times she did not really understand me, even when I switched to Afrikaans to try and express myself in such a way that she could understand better, as that is her ‘stronger language’, I still had the feeling that she did not fully understand me. In a sense I felt that when I asked her about her biographical information and other interesting facts she held back.

Lisa discovered “that after this experience there is a better connection between us and now I find it easier to have every day conversations with her when I see her.”

Candice selected the domestic worker who had been employed by her mother since she was a young child. She commented:

Having Maxine around me all the time, I have never really realised her level of literacy. During our conversations of sharing information about our daily happenings I have never really realised her use of broken English. It had become a way of life and a norm for me. Through doing this assignment I realised actually how much she struggles to speak in English, but yet she tries so hard. Although her highest level of Education is Standard 8, she still struggles immensely with her English.

Regardless of their newfound opportunities for conversation that resulted from these encounters, the challenge of border crossing remains. Language structures the realities that are lived out within culture. The limitations, therefore, of a shared expressive and receptive language by both speaker and listener increases the possibility for miscommunication and misunderstanding.

Whether they knew their storytellers before the assignment or not, as students talked with their storytellers to learn more about them as people, and then listened to the stories that were told, they began to recognise their own misconceptions about others.

I did not know Salma before I started on this project; I knew that she occasionally worked at the house where I currently rent a room. I knew that she spoke beautiful Afrikaans and that; from the words I could recognise, she spoke Tswana, Sotho, or Pedi. I now realise that I quickly jumped to the ignorant conclusion that she would have difficulty telling me a grammatically correct story, or be able to write it down legibly. Salma is a remarkable woman. She is intelligent and funny with a permanently positive outlook on life. The wedding dresses that she makes are works of art, and should be displayed in boutiques.

But the encounter with different languages led many students to consider learning another language themselves.

After finishing this assignment I felt that I would like to try learning at least one different language besides English and Afrikaans, I started to wish that I had
taken the subject Tswana more seriously in school but at that time my class and I saw it as a pointless subject as we would not be writing an exam on what we had learnt [...] I now know what it must feel like for a learner who does not understand English to go to school not understanding the language of medium in the school and then been expected to answer questions.

Returning home

After the time spent identifying a storyteller, getting to know the person and listening to the stories that were told, students reflected on what they had learned from their encounters with others. All of the students spoke of new, or enriched relationships, with their storytellers and a newfound appreciation for the diversity of cultures within South Africa.

By doing this assignment I now talk more to Leah and we often share stories of both her and my life and a connection between us has developed [...] I would not change anything about this assignment as I feel it was beneficial for me to take the time to learn about someone else especially someone who is from a different culture from myself and feel that it has changed me and I have grown personally as I now have a better understanding for another culture.

This assignment taught me a new type of respect for others. So often we believe that achieving success in life is through getting a degree, or owning a big house and getting married. Through doing the assignment it struck me once again that achieving success for one person can be completely different to achieving success for another person. For Miriam, success was rearing her baby to be a beautiful woman. Through hard work and dedication for her daughter she is now able to help her daughter to obtain a degree from a University in Financial Management. From Miriam growing up with nothing, she is determined to give her daughter a better life [...] That is what I call success.

Border crossing into new spaces often means that we also have to learn a new culture and new way of being. Students spoke of learning about new cultures and the thinking behind the stories.

I found this assignment very interesting, as I was able to see how a person from another culture lived as a young child [...] As I grew up understanding Zulu and was exposed to the Zulu culture, it was interesting to see the differences and similarities between my own culture, Zulu and Sepedi. I think teachers of the younger grades should expose the learners to the different cultures of South Africa as it explains the multiculturalism of our country, which not all young learners are aware of.

Conclusion

How can we strive to understand each other across the boundaries of culture, languages and other belief systems in SA? Although the geography and nationality bind people together as South Africans, the richness of the 11 different languages and cultures and a history of segregation and suspicion continue to separate people. The common elements of stories and the universality of storytelling across generations and place serve to draw us together and allow us to transcend the boundaries of culture and language, class and status. Students in this study recognised that everyone has a story to tell, and if they moved from their comfort zones of familiarity they could
appreciate the value of each person. This assignment opened a door for better understanding of cultural difference and led many students to consider learning more about other cultures and languages for themselves and for their future learners.

On the surface, the storytelling experience provided a context for storytellers and listeners to come together to share a tale. The students in this study expressed their interest in hearing the stories themselves, often mesmerised by the tale because of the way it was told or the content itself. However, what was clear from students’ reflections was that the experience itself of being in relationship as a listener to a storyteller was the most significant aspect of the project. Regardless of the kind of story told – fable, imaginary, or experiential – students valued the opportunity to get to know others through their stories. The experience of telling and listening to stories created a cognitive and an affective bond between the storyteller and the audience, actively engaging both parties in new opportunities to increase self-reflection and enhance multicultural understandings through shared interpretations. As students listened to the stories of others they began to question their own personal experiences, beliefs and values, thereby opening doors to greater understanding of self and other leading to increased multicultural sensitivity. For some students, they recognised their positions of privilege compared to their storytellers. Even though they had known they had economic advantages over many people, they began to be more aware of their responsibility to listen with respect to others who had fewer economic resources and value the person as a unique individual who possessed different, yet important, assets. Other students empathised with their storytellers and were amazed at their resilience in the face of difficult life circumstances. Still others came to know people with whom they lived in new, more personal ways and their relationships began to shift to a deeper level of caring for one another.

In classrooms that are increasingly diverse in terms of students’ home languages, cultures, abilities, and values, teachers must develop the multicultural understandings, skills, abilities, and dispositions to teach their learners. Ball (2006, p. 44-45) makes an important point in this regard when she says,

[...] listening to the narrative voices of our students can be a powerful tool for improving understanding, voiding stereotypes, reducing fear, and increasing familiarity with students’ lived experiences outside school.

As a result of the assignment, students began to see that they had their own stories to tell and have, as a separate part of this larger project, written stories that they can use with Foundation Phase learners. Supporting Luwisch’s (2001) findings that teachers who integrate their own stories into their curriculum may be more sensitive to their students’ concerns, these students pointed to the power of knowing themselves and their ability to respectfully connect with others. The border crossings that were supported in this study suggest that when future teachers are able to meet another person from a different cultural and linguistic background through the medium of storytelling and listening, they can begin to approach ‘otherness’ with greater sensitivity and respect.
References


Pre-school children’s understanding of Mathematical patterns

Abstract
This study explored the patterning abilities of eight children between the ages of four and five-and-a-half. Task-based interviews were conducted where children were required to produce their own repeat pattern, to copy and extend a given repeat pattern, and complete missing parts of a repeat pattern. The findings show that most children were able to copy and extend a pattern, but few could produce their own repeat pattern. While most children tended to focus on “what comes next”, some children paid attention to pattern structure, but were not able to isolate the pattern element.

Keywords: mathematical patterns, repeat patterns, pattern element, early childhood numeracy
**Introduction**

Emma is four-and-a-half and loves to make necklaces. She carefully threads the beads onto a string, starting with orange then pink then green; then orange, another pink, and a green, and so she continues. She does not yet know that the twelfth bead will be green but once she has threaded the eleventh bead, she will know what comes next.

Threading beads is a typical example of young children’s experience of pattern. They soon learn to identify a mistake and to correct it, but few are able to predict the colour of a bead in a particular position and few can easily determine how many times the pattern has been repeated because they do not see orange-pink-green as the basic unit of the pattern. They simply see orange, pink, green, orange, pink, green, and so on.

The exploration of pattern is a key element of doing mathematics. Indeed Steen (1990, p. 5) described mathematics as the “science and language of pattern”. English (2004) argues that the development of children’s mathematical reasoning is dependent on *inter alia* their ability to identify, extend and generalise patterns. Pattern is a phenomenon that young children encounter daily in many different forms and contexts. They may recognise patterns in fabric, in designs of buildings, in clapping to music, and in their own play.

Papic and Mulligan (2005, p. 609) define pattern as “a numerical or spatial regularity” and suggest that pattern structure is constituted by “the relationship between the various components of the pattern”. They distinguish between different types of patterns, as follows (Papic & Mulligan, 2005; 2007):

- **Repeating patterns** contain an element that recurs continuously. This pattern element or unit of repeat contains one cluster of the individual components that form the repeat. The following pattern can be coded as an ABCD pattern with three repeats: □◆◆□◆◆□◆◆□◆◆□◆◆. The unit of repeat is delimited as □◆◆□◆◆. Repeating patterns range in complexity and may contain more than one variable, for example in a pattern with beads the variables may be shape and colour. Repeat patterns are particularly important because of the links with iteration in multiplication and measurement (Mulligan & Mitchelmore, 2009).

- **Spatial structure** patterns refer to patterns where the individual components are organised in a recognisable physical arrangement, such as a triangle of dots or a rectangle of stars.

- **Growing patterns** increase or decrease in a systematic way. They are frequently associated with spatial structure patterns where the spatial structure increases in size, such as triangles of dots where successive triangles have a larger number of dots and the increase in dots is systematic. However growing patterns could also take the following form: ABAABAAABAAAAB.

It seems fair to say that pre-school children’s experience of pattern tends to focus mostly on colour and shape, as well as repeating patterns. Consequently, it may be
more useful to consider pattern at this level as the repetitive regularity of colour, quantity and/or shape.

**Literature review**

There can be little doubt that mathematical patterning is an essential part of mathematics. Cuoco, Goldenberg and Mark (1997) identify ‘pattern sniffing’ as a habit of mind that mathematicians develop, and argue that learners of mathematics also need to develop this competence, where they deliberately look for regularities in the mathematics under investigation, and where they see regularities in their daily lives which may then prompt a question that can be investigated through mathematics. Patterning skill is particularly important for the development of algebraic thinking (Warren, 2005) as well as functional thinking (Blanton & Kaput, 2004). For example, typical tasks in introductory algebra require learners to generate algebraic expressions as generalisations of visual (growing) patterns. These algebraic representations express functional relationships in the pattern.

Pattern exploration is also a fundamental component of young children’s development, and extends beyond mathematical patterns to include identifying regularity and variance across the pre-school curriculum in diverse areas that include language, art, science, music and physical education (Fox, 2005). Ginsburg, Inoue and Seo (1999) investigated the relative frequency of different kinds of mathematical activity in a pre-school setting and found that children in their study were working on activities involving shape and pattern for 30% of the observed time.

Economopoulos (1998, p. 231) suggests that the key shift for children to make with repeating (red-blue) patterns is to move from seeing that “red comes after blue and blue comes after red” to seeing that “red-blue is a fundamental unit of the pattern”. Once children have made this shift, she argues they will then be able to use the known information to predict the unknown. Thus, they will shift from a focus on “what comes next” to see the structure of the pattern, and will recognise that it comprises repeating units that are made up of two or more basic elements.

Economopoulos describes tasks used in a professional development programme with kindergarten teachers, where participants engaged in small action research interventions with their own children. One task involved a pattern of four tiles, alternating green and blue, with the next four tiles covered by cups. Someone was required to point to a particular cup and a child was required to say what colour tile was under the cup. While some children read the entire green-blue pattern from left to right to work out the answer, others simply looked at the last visible tile and worked out the alternating pattern, saying something like: “I looked at the last colour, and that was green; so in my mind I just went green-blue-green and knew that the next one had to be blue” (p. 231-232). Economopoulos suggests that those who worked from the start of the pattern were using a “what comes after what” strategy, whereas those who looked at the last visible tile were developing some understanding that green-blue was the smallest unit of repeat in the pattern.
However, there has been very little research from a mathematical perspective on young children’s patterning abilities (Jones & Peters, 2004). Most of the research that has been done has occurred in the last decade and has come from Australia (e.g. Fox, 2005; Mulligan & Mitchelmore, 2009; Papic & Mulligan, 2005; 2007; Waters, 2004). One of the consistent claims of this body of research is that children have the potential to perform more complex patterning tasks than they are typically given, but this potential will only be realised if teachers pay more deliberate attention to pattern structure. For example, in the pre-school years where repeat patterns are dominant, teachers need to emphasise the unit of repeat and to provide children with the language to talk about it.

Waters’ (2004) case study of two classes of five and six year olds, involved two teachers who both acknowledged the importance of mathematical patterning in the curriculum. In one class children referred to the ‘patterns’ on their clothing. One noted an AB pattern around the cuff of her jeans, another referred to the matching pattern (i.e. symmetry) of the butterfly on her shirt, and a third child noted the pattern on his shorts which consisted of a visually random design. The teacher referred to all three instances as patterns without noting the characteristic differences. This lack of attention to carefully defining what a pattern is may result in children considering any kind of picture as being a pattern. In another activity involving a worksheet with a repeating AB pattern, children failed to identify the repetition of shapes and the teacher did not intervene appropriately to define the pattern for them. Waters observed ten patterning activities across the two classes and concluded that the teachers did not work with a consistent definition of patterning, demonstrated limited understanding of patterning language, did not increase the complexity of the patterning tasks, and did not integrate pattern activities across the curriculum. By implication Waters suggests that these are important aspects of mediation to support the development of learners’ patterning abilities, and we would agree.

Papic and Mulligan’s (2005; 2007) study shows that interventions with pre-school children had a substantial impact on the children’s performance on patterning tasks. The study initially focused on children in their final year of pre-school at two day-care centres. An intervention was implemented in one of these centres and they assessed children’s progress using three interview-based assessments one of which was done after the first year of formal schooling. They concluded that the children who participated in the intervention were able to develop more sophisticated patterning skills, and their patterning skills continued to be more advanced than the non-intervention children after the first year of formal schooling. In particular they found that the ability to identify the unit of repeat and hence the structure of simple patterns was a key difference between the two groups of children. Whereas the non-intervention children focused mainly on alternating colours in solving patterning problems, the intervention children could identify the unit of repeat and used this to solve tasks. For example, when copying towers of alternating colours with an ABABAB pattern, intervention children identified the AB pattern element and the number of repetitions, while non-intervention children simply remembered the alternating
colours: red, blue, red, blue, red, blue in a similar way to the responses discussed by Economopoulos (1998). This simple, yet profound, difference shows how the intervention children were paying attention to structure, and the research suggests that without teacher intervention, children do not readily do this.

Most of the research we reviewed has focused on the overall performance of groups of learners. By contrast, our research focuses on individual children and their performance on a range of tasks involving repeating patterns. This enabled us to get a more nuanced perspective on some of the complexities of children’s growing understanding of repeating patterns. While the children had been exposed to patterning work across the curriculum, they had not yet been explicitly taught the notion of ‘pattern repeat’, nor to identify the pattern element. Consequently, our findings reveal what these children could do based on general exposure to patterning. In particular, we will focus on the extent to which children have a sense of pattern repeat.

Research design

Setting and participants

The research was conducted in an independent pre-primary school in the northern suburbs of Johannesburg, which draws children from middle to upper socio-economic backgrounds. The first author is the principal of this school, the class teacher of the children who participated in the research, and the primary researcher. Although the original intention was to select a sample from the class, there was so much enthusiasm to “play the games with Erica” that, with parents’ consent, all 17 children were given the opportunity to complete the tasks in a task-based interview setting (Goldin, 2000). This provided additional opportunity to pilot the interviews. We report here on the responses of eight children, all of whom had been at the school since the age of three, and were thus in their third year of pre-school education. They ranged in age from four years and five months to five years and three months. All children spoke either English or Afrikaans as their home language. Prior to the data collection, which took place four months into the school year, the children had done pattern work weekly. This work included pegboard activities where they were required to work individually to copy a given ‘picture’ on a card by placing pegs in the appropriate places on their pegboards. These pictures included various patterns. Children also threaded beads onto sticks and arranged blocks or counters in patterns as a group activity. Children were familiar with some of the apparatus that were used in the interview, but had not worked with the card-based activities that are described below.

The data were collected in a room adjacent to the children’s classroom. Each child sat individually with the teacher-researcher, and each interview took 20 – 30 minutes. Careful attention was taken to avoid interrupting the children as they worked on the tasks. Questions were only asked of them after they had completed each task. It was important to give them the opportunity to explain what they were doing immediately after completing the task, as, due to their age, they may not have remembered this at
a later stage. In some cases the children talked aloud as they executed the task, which gave us insight into their thinking as they worked. All interviews were video-recorded, with the camera focusing on the child’s hands and the manipulatives available on the table.

**The tasks**

Each child was asked to complete a series of tasks. The first task was to produce their own pattern with ‘touch and count’ (unifix) cubes. The second task was to fill in or complete the missing part of a repeat pattern, and the third task was to copy and repeat patterns using beads on dowel sticks. Our discussion views the task from our adult perspective. We are well aware that the children were not necessarily conscious of all the aspects we mention. Conversely, it may be that the children saw features of the task, which we are not aware of. One obvious issue is that the children in the study had not as yet learned to read, and so they were not yet conditioned by the Western convention of reading from left to right.

**Task one – Building a pattern**

Each child was given the same instruction: to create a pattern using blocks and then to repeat the pattern. The instruction stipulated that they could make any pattern using any amount of blocks. Our intention was that this task would give insight into the children’s ability to produce a pattern. Also, being an open-ended task, we believed that this would help the children to settle down in the interview.

**Task two – Fill in and complete patterns**

This task investigated repeat patterns where children were asked to complete a given pattern. The materials used for this task came from an ‘educational game’ where each card has six divisions, four with pictures, while two are blank. We shall refer to this as the ‘strip’. Two loose picture cards are provided to place on the strip, in order to complete the missing parts of the pattern. Four tasks were chosen from this game and were presented one at a time. We refer to these as Tasks 2a, 2b, 2c and 2d.

Task 2a contains an AB pattern of red and blue cups and saucers. Blue cups have the cup handle on the right and red cups have the cup handle on the left. Thus the orientation of the cups produces the same AB pattern as the colour. The structure of the strip is AB_BA_. Where _ indicates a blank place for the child to place a loose card.
Task 2b contains an AB pattern of green T-shapes. Here the same colour has been used throughout but the orientation of the T alternates. Thus all the loose cards are identical and the pattern emerges by changing the spatial orientation of the loose cards. The structure of the strip is ABAB__. Task 2c is the most visually complex task with an ABA__B structure on the strip. As with Task 2b, the loose cards are identical and the task requires a spatial orientation of the loose cards.

Task 2d consists of pictures of three skittles. The colours of two skittles are laterally reversed on some positions in the strip so, as with task 2a, the loose cards are different. The structure of the strip is A_AB_B.

The strip in Task 2b is the one that provides clear indication of the pattern element with two repeats, and since the open spaces are at the end of the sequence, this task required pattern completion rather than filling in the missing parts of the pattern. The given information made this the easiest task for the children and with hindsight; perhaps, we should have given this task first. Neither Task 2a nor Task 2d make the alternating repetition explicit. We anticipated that some children might place the loose cards so as to group like colours together, thus producing an ABBBAA pattern for Task 2a, and an AAABBB pattern for Task 2d. The symmetry of this arrangement on Task 2c could provide a strong indicator to children that this is a correct response. However, in both cases we are treating alternating AB patterns as the correct response. The repeating AB structure on strip 2c was less obvious than on the other cards, because of the more complex image on each card. We wanted to see what criteria children
would use in their decision-making to complete the pattern, for example, would they
draw on the spatial structure of the strips and/or the given pattern to place the loose
cards, and if so, what aspects of the design would they focus on? The loose cards for
each task were placed randomly on the table. We do not know what impact this might
have had on each child’s responses. For example in the diagram for Task 2b above, the
cards are placed in the correct order and orientation. A child could take this as a cue
to move them both into position without making any changes to the order and spatial
orientation.

**Task three – Copy and extend patterns**

This task also focused on repeat patterns. Children were given different picture cards,
one at a time, containing a pattern of beads on a string. The beads differed in colour
and shape. The children were then required to select the appropriate beads
to copy the pattern, and then to repeat the pattern several times. This required
them to distinguish shape and colour. Children were given trays with all the
necessary beads in each colour and each shape as shown alongside. We gave the
children dowel sticks for threading the beads (rather than string) to capture
their actions more clearly on camera. We report here on only two of these tasks,
which we refer to as Task 3a and 3b.

Task 3a contains an ABCD pattern that
is repeated twice, with both colour and
shape changing. However, if one focuses
only on colour, then the pattern is ABCB.
Children had to recognise the pattern
element, choose the correct shape and
colour, and notice the repetition.
Task 3b contains an ABCDEFGH pattern with no repeats. However, if one focuses only on colour, then the pattern element is ABCD and there are two repeats of the pattern. If one focuses on shape only, there is an ABCABCA structure with a cube on the left end. If children focused on both colour and shape, they had to recognise that there were no repeats on the card and then had to repeat the entire ABCDEFGH pattern.

After the interviews had been conducted, we selected eight children for the analysis. In making this selection, we wanted to include responses that covered a wide range of performance on the tasks, as well as instances of inconsistency where children were able to complete some tasks correctly, but not others. We anticipated that potential inconsistencies and instability in children’s patterning ability might give insights that have not as yet been reported in the literature. We excluded interviews where children appeared to lose concentration too soon and where the technical quality of the video footage made analysis difficult. Interviews were transcribed, and analysis began with repeated observations and descriptions of the video footage together with the transcription.

In analysing the video footage, we paid attention to children’s actions and their talk. For example, we noted what children did when they started each task; whether they worked from left to right or right to left, whether they turned their dowels sticks around during the task; and whether they pointed to particular parts of the card. Since the children were not easily able to express their thinking, we had to match carefully their talk with their actions, such as pointing to particular shapes or parts of the pattern. There were several instances where what the children said, did not match with what they were actually doing. This meant the transcriptions could not be used without the footage.

The initial focus of the analysis was on the extent to which each child was able to complete a task correctly. We then focused on each task, comparing the children’s productions in order to identify similarities and differences. Finally we focused on each child in order to explore consistencies and inconsistencies in their performance across tasks.

Findings and discussion
We begin with an overall summary of the children’s performance on each task. Thereafter we discuss the strategies of three children in more detail, in order to highlight some of the key findings of this research.
Task one – Building a pattern

Three children produced repeat patterns. They worked with ABCD structures and their number of repetitions ranged from two to seven. Despite producing the repeat patterns, the children’s talk about their patterns indicates that some were not attending to the pattern element. They were asked questions such as: “How many times have you done your pattern?” or “Explain to me how your pattern has gone”. In response, Grant and Janet both counted all the blocks they had used. Jack counted the numbers of each different coloured block. Only Tessa was able to identify the pattern element:

Researcher: Do you know how many times you have done the pattern?
Tessa: (Pointing to each pattern element of four counters connected green, blue, red, yellow)
Ok, that’s one, that’s two, that’s three, that’s four, that’s five, that’s six, that’s seven.

Jack repeated his yellow, red, green, blue cluster twice and then added another yellow. These nine blocks were added to the bottom of his tower each time. Then his tower got too tall so he turned it around and started adding cubes to the top. He proceeded to add red then green following his earlier pattern. Then he noticed that there were “not so much blues” and so he added a third blue block. So Jack built his tower systematically using the same order for all 12 blocks. However, when he started adding to the top of the tower, he broke his ABCD pattern. Thus his final tower looked as follows, where the numbers indicate the order in which the block was added to the tower:

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<table>
<thead>
<tr>
<th>D</th>
<th>C</th>
<th>B</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>A</th>
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</thead>
<tbody>
<tr>
<td>12</td>
<td>11</td>
<td>10</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
</tbody>
</table>
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Jack’s case highlights the fact that the production of a correct repeat pattern was dependent on the way in which he used the manipulatives. He selected the colours in the same order each time, but did not connect them to the tower in a consistent manner. This resulted in an error in his pattern. If he had placed each block separately on the table as some other children did, it is possible that he would have produced the intended repeat pattern.

The other four children who did not produce the expected repeat patterns still worked in deliberate and systematic ways, with three of them using four different colours. Pam systematically took blocks out of the containers (yellow, red, green, blue, yellow, red, green, blue, red, blue) and arranged them in two rows of five blocks, but the arrangement of the cubes did not produce a repeating pattern. Despite this, she appeared to be reflecting carefully on her arrangement because she changed the positions of the last two (red and blue) blocks at one stage. John arranged eleven blocks into a ‘pattern snake’, but with no repeating pattern element. In both cases the children did not repeat a colour in their 4-block groupings. This suggests that both...
children had some sense of the form of pattern – in terms of arranging the blocks – but could not produce recognisable repeating patterns. Janet arranged seven yellow blocks in a circle while Ann arranged four blocks in a cross-shape with a gap in the middle.1 We would argue that neither Janet nor Ann attempted to produce repeat patterns and it may be that, as in Waters’ (2004) study, they interpreted the word ‘pattern’ as ‘picture’ and so they produced pictures that did not contain the structure of spatial and/or repeat patterns.

The findings from this task suggest that an ability to produce a repeat pattern does not necessarily imply the ability to identify and talk about the pattern element. In addition, children’s production of a repeat pattern is also dependent on their definition of pattern and their facility with the artefacts they are using.

Task two – Fill in and complete patterns

2(a) Cup and saucer pattern (Task 2a) – Five children identified the alternating AB pattern correctly. The other three grouped the reds and blues together and so ended up with BRRRBB. It was not immediately evident to these three children that they were required to alternate colours and/or orientations of the cups. All children focused on colour – there was no reference to the different orientations of the red and blue cups.

2(b) T-shape pattern (Task 2b) – This was the easiest of the strips since children had to complete the pattern, rather than place cards in the gaps. Seven children completed it correctly. Initially Grant placed the T upside down in position 5 and right way up in position 6. But after some interaction with Erica, he changed the orientations of both these cards.2

2(c) Red dot and stripe pattern (Task 2c) – Four children completed this task correctly – with red dots facing each other. Some justified their arrangement clearly. For example, Tessa talked about the red dots “facing each other”. In other cases we could not tell what criteria were being used to justify the correct arrangement. For example, John who placed the cards very quickly simply said, “it was the right one”. Both Janet and Bev placed the loose cards with the red dots on the right hand side. This produced ABAAAB. Bev justified her arrangement by saying that the red dots had to be next to the blue stripes. This is one of several examples where the children appear to focus only on part of the pattern and produce an arrangement that contains a partial pattern. Their reasoning may thus be valid for a section of the pattern, but is invalid if one considers the entire pattern. In some instances this inconsistency was pointed out to the child, but seldom resulted in a change to their arrangement.

2(d) Skittles (Task 2d) – The skittle task has the AB pattern element in the centre of the strip, but this is not obvious. Only Ann produced an alternating pattern. The other children grouped all the green-yellow-blue cards together and the blue-yellow-
green cards together, producing an AAABBB pattern. One child placed matching cards over the pictures on the strip.

All these tasks required the children to think about what loose card should be placed in the open spaces. With the exception of the T-task, this forced them to ask the question “what goes here” rather than the simpler question of “what comes next”. In order to place the correct card in a particular position, they need to pay attention to all the filled spaces, which requires them to look to the left and the right of any open space. This places high demands on children of this age and, as discussed above, some children were not able to do this. In a later section we will discuss how Ann made use of “what comes here” thinking to complete Tasks 2b and 2c correctly.

**Task three – Copy and extend patterns**

Task 3a had an ABCDABCD pattern, therefore the repetition was given. Seven of the children were able to copy the pattern, but only five were able to extend it to several pattern repeats. Pam did not reproduce the given pattern. Instead she made up her own EFGH pattern, which she repeated five times. It contained the same colours as the card, but only one of the elements was identical in shape and colour to the card. She had struggled with all the tasks and did not produce the expected pattern for Task 3b either, but her attempt at this task showed that she could produce her own repeat pattern.

Task 3b had an ABCDEFGH pattern; no repetition was given – which meant that the children had to work out how to repeat the pattern themselves. Five children were able to copy and repeat the pattern. Janet completed Task 3 correctly, working slowly and systematically. She identified the colour and shape of each element that she threaded onto the dowel stick, yet there was no evidence in her talk of recognising repetition in the pattern. She arranged the bead trays in the same order as the beads on both cards. This meant that if she took a bead from each tray in order, she would produce the correct pattern. Since she set up this arrangement of trays for both cards, we assume that the order of the trays corresponding to the cards was not coincidental. Thus it may be that she recognised the value of working systematically from the card, and this contributed to her success. Once she had completed each pattern, she was asked how many times she had done the pattern. For Task 3a, she hesitantly pointed to the green and red beads and seemed to skip over the yellow beads, but she did not appear to be counting all green or all red, or both. For Task 3b she appeared to be choosing beads randomly as she counted. She seemed to focus mainly on rounded beads irrespective of shape or colour, but did not count all of them.

In order to succeed with Task 3, children had to be able to keep track of where they were on the card in relation to the beads threaded on the stick. Their focus continually shifted between the card, the trays of beads and the dowel stick. If a child could identify the pattern of repeat in Task 3a, this would assist in keeping track of progress. For a child who did not recognise the repetition, the task essentially became a copying task, which could be successfully completed by focusing on what bead
comes next. In Janet’s case the deliberate order of the trays was enabling, but other children appeared to place the trays in a random order, which required them to pay more attention to the sequence on the card.

The results for each task have been summarised in the table below. We are well aware that the table does not tell the complete story of the details of each child’s performance, but it does provide a useful overview.

<table>
<thead>
<tr>
<th>Child</th>
<th>Task 1</th>
<th>Task 2</th>
<th>Task 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Produce own repeat pattern</td>
<td>Cup and saucer</td>
<td>T-shape</td>
</tr>
<tr>
<td>Tessa</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>John</td>
<td>X</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Ann</td>
<td>X</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Janet</td>
<td>X</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Bev†</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Grant</td>
<td>✓</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Jack</td>
<td>X</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>Pam</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
<td>5</td>
<td>7</td>
</tr>
</tbody>
</table>

Based on overall performance on all tasks, the children could recognise and match attributes of objects, such as size, shape and colour; and they could differentiate and sort objects. Four children could produce their own repeat patterns with several repeats of the pattern element, but all had difficulty in describing their patterns. Seven children could copy a given pattern and six could extend a given pattern. However, only one child could point to the pattern element. The remaining seven showed different levels of awareness of pattern structure. The data in the table suggests that Janet had a better understanding of pattern than Grant, since she completed more tasks correctly. However, when one looks more deeply at her responses to all tasks, there is little evidence to suggest that she is aware of pattern structure. She seems to operate at the level of “what comes next” and her inability to justify her decisions suggests that she is not aware of the properties of patterns. Her inability to count the number of repeats in Task 3 correctly also suggests she has little understanding of pattern element. Janet’s case sounds a warning to us that children may produce correct patterns with little understanding. By contrast, a deeper analysis of Grant’s
responses suggests that he may have a more developed notion of pattern than Janet, which is illustrated in the next section.

A closer look at pattern repeat

We have chosen to focus on the responses of Grant and Ann in this section. Both children exemplify different and interesting ways of reasoning when working with pattern, thus reflecting different levels of competence. We believe that the texture of these differences may provide insight into how children work spontaneously with mathematical pattern, and thus inform ways in which children might be supported in their learning of mathematical pattern.

In the previous section we noted that only one child was able to identify the pattern element explicitly. In the discussion that follows we will show how Grant and Ann show various degrees of awareness of pattern repeat and the notion of pattern element. We base these claims on what the children did and said. For example, we consider the following as evidence of some level of awareness of pattern repeat and pattern element:

- Use of words like again and another to indicate more of the same, when referring to beads or pictures; for example, “another red bead”, “it goes red, blue again”;
- Different speeds of speaking about individual components of a pattern; for example, saying “red, blue, red, blue, red, blue” in the same tone and at the same pace does not necessarily imply recognition of the repeat. However, saying “red, blue” quickly as in “red-blue, red-blue, red-blue” with pauses between each ‘word’ suggests that the child is recognising the pattern repeat.
- Pointing to key elements of the pattern; for example pointing to alternate elements in an AB pattern suggests awareness of the relationship between alternating positions.

Grant

From Grant’s performance on the tasks, we can see evidence that he could produce his own pattern and reproduce a given pattern. However, he did not appear to work explicitly with an idea of pattern repeat. There was no evidence in his talk or in his strategy that he was making use of the structure of the pattern to extend it, or to count the number of repeats. For the most part, he appeared to be operating at the level of “what comes next”.

For example in Task 1, he quickly produced an ABCD pattern and repeated it five times. When asked, “how many times have you done the pattern?” he confidently counted all 20 blocks, but did not pay attention to the repeats. He was then asked how many blue, green, red and yellow blocks he had used. Each time he counted all the blocks of that particular colour. He did not recognise that each colour had the same number of blocks.
A similar situation arose in Task 2 where he referred to all elements individually. For example with Task 2c he quickly placed the loose cards in the correct places on the strip. He justified his arrangement by pointing to all colours on all six cards and saying, “blue, yellow, green, red, red; red, red, green, yellow, blue...” He hesitated a few times while naming the colours and did not show any indication in his pace or tone that he was recognising repetition in the pattern. We cannot be sure that he recognised the pattern element, but his actions do not suggest that his placements were random. In counting or naming every element of the pattern in both tasks described above, Grant did not show evidence of recognising the repetition in the pattern nor of identifying the pattern repeat. However, his ability to produce his own ABCD pattern with several repeats reflects some understanding of the notion of pattern and pattern element. Also, in Task 3a he referred to each bead he was threading by colour and shape, and used ‘another’ and ‘again’ which suggests he was recognising the repetition. But his talk did not show evidence of grouping a series of beads for the repeat.

Grant’s reasoning with the T’s in Task 2b is interesting. When he began the task, both loose cards had been placed right way up. He rotated one card and placed the first T upside down in position 5 on the strip, thus matching the T in position 4, and then placed the last T right way up in position 6. When asked why he put them that way, he said he did not know and moved the two loose cards off the strip, which suggested that he had interpreted the question to mean that his response was incorrect. The interviewer made explicit that she was not implying his response was incorrect, and that she simply wanted to know why he had done what he did. He then put them back on the strip as they were, and pointed to the cards in positions 4 to 1 (in that order) saying “down, up, down, up”. When the interviewer asked him to start from the left and tell her the pattern, he said, “Up, down, up, down, up, down” ignoring that the loose cards had been placed “down, up”. So he was describing the pattern as AB with three repeats, but his pattern was actually ABABBA. When the interviewer pointed out that what he had said did not match the actual placement of the cards, he did not change the layout of his cards until he was prompted to do so.

Initially Grant placed the loose cards incorrectly so that the T in position 5 faced upwards. When he explained his reasoning, he moved from right to left, starting with position 4 and ending with position one, saying: “up, down, up down”. If we extend this to the piece he completed, then his two cards are also oriented “up, down” and so reflect the pattern he has identified, but the pattern is not continuous from position 1 to 6 (or 6 to 1). When asked to read the pattern from left to right, he said, “down, up, down, up, down, up” thus recognising a pattern, but not describing correctly the orientation of the last two cards.

Thus we see two instances where Grant does not appear to recognise the pattern element, and as a result itemises each colour or counts each block. But with the T-cards, he recognises the AB pattern and uses it even when it does not reflect the layout he has produced. This suggests that he was not always working only at the level of “what comes next”, but does consider the pattern structure in at least one instance.
Ann

While Ann was busy with Task 1, she was asked if she knew what a pattern was. She confidently replied that a pattern was “something like squares or a little bit like other patterns”. Then she produced the arrangement shown below which she described as having two ‘sides’, referring to the blocks on the left and right, and “one down and one up” referring to the bottom and top blocks respectively.

Earlier we argued that Ann’s idea of a pattern in this task could be defined as ‘picture’. She made no attempt to produce a repeat pattern and was confident that her production constituted a pattern, as she understood it.

In Task 2, Ann showed evidence of understanding repeat patterns. For example having correctly placed the loose cards on Task 2a, she described the pattern as “blue-red, blue-red, blue-red, blue-red”. She said “blue red” quickly (hence we hyphenated the words) with a pause between each one. Also, she indicated four repeats although there were only three repeats on the strip. This indicates to us that she was seeing the pattern repeat and that she was not simply reading the six positions on the card.

Ann also showed evidence on two occasions that she was focusing on the entire pattern across the cards and could thus identify the pattern structure. When working on Task 2b, she correctly placed the loose card in position 6 before placing the card in position 5. When justifying her response, she pointed simultaneously to the upward T’s (in positions 1 and 3) and then simultaneously to the downward T’s (in positions 2 and 4). This suggests that she was focusing on “what comes here” rather than “what comes next”.

With Task 2c she quickly placed the two cards correctly with the red dots facing each other, once again placing the loose card in the right-most gap first. When asked how she knew what to do, she indicated by pointing that she had seen the printed pattern on the strip in positions 1, 2, 3 and 6. Although she did not make explicit reference to the orientation of the images in these positions, she was clearly paying attention to the whole strip and not just to the positions adjacent to the empty spaces. Taken together, these responses show that Ann is paying attention to the relationships between different positions on the various strips. She is able to recognise the pattern element even though she makes no explicit reference to it. We are uncertain as to whether Ann could isolate the pattern repeat in order to count the number of repeats.

Ann was the only child to get the pattern in Task 2d correct. She justified her arrangement by referring to the colours: “yellow, green, blue; yellow, green, blue”. She did not point or indicate where she was ‘reading’ this information from so her justification and placement of the cards contradict each other because the green
and blue should be reversed. We cannot tell if she recognised that the cards were different.

Ann's responses across Tasks 2 and 3 show that she can identify the structure of repeating patterns. She identified the pattern element and used this to place the cards in Task 2. This suggests she is working at a more sophisticated level than “what comes next” and is focusing on what comes in any particular position. In Task 3 she selected the wrong bead on two occasions, but corrected herself before selecting the next bead. This suggests she is also paying attention to what comes next. However, she does not appear to be able to isolate the pattern repeat easily as Tessa does and to refer to it explicitly.

**Difficulties of doing research with young children**

Doing research with young children has several complexities that are less crucial when working with older children and adults, for example, their short attention span and their limited ability to communicate their thinking. This means that all visual and verbal data must be carefully coordinated to establish as accurate an interpretation as possible. When the children were video recorded performing each activity, the camera was deliberately set up not to capture the child’s face. This was done to meet ethical concerns about doing research with young children and in an attempt to guarantee anonymity. However, the facial expressions would have been very helpful in the data analysis process and, with hindsight, should have been captured. In the absence of verbal data, the facial expressions may have indicated the extent to which a child was apprehensive or confident in their performance on a task. By capturing the children’s faces it may also have been possible to see what they were looking at when working on each task. While we strongly support the need for sensitive and discreet research with young children, we believe that our research would have benefitted from access to the children’s facial expressions.

A related difficulty in working with young children is their struggle to communicate their thinking. While some gave responses that gave insight into their thinking, many responses were vague and gave little insight into what the child was thinking. For example the following transcript shows the difficulty of accessing Jack’s thinking after working on Task 2c:

- **Erica:** Why did you choose to put them that way?
- **Jack:** Because I wanted to.
- **Erica:** What were you thinking when you put them that way?
- **Jack:** To put them here.
- **Erica:** Ok I’m happy with them there. I just want to know why you have decided to put them like that.
- **Jack:** Cause all the others are like that.
- **Erica:** What’s going this way?
- **Jack:** The dots.
- **Erica:** The dots, are you happy with that pattern?
- **Jack:** Mmmm.
Despite the interviewer’s attempts to find out why Jack placed the cards as he had, his answers gave little insight into what he was thinking. He was not being obstinate in his responses. It appeared that he was not able to communicate his decision-making process.

There were many other instances where this happened. In some cases perhaps the children did not actually know what they were thinking. For example, when Ann was asked how many times she had repeated the pattern in Task 3a she answered (incorrectly) six. When asked to explain how she got this answer, she said that she knew how to do it because “sometimes my brain is silly and sometimes my brain is clever.”

Another challenge in the research was the multiple roles that Erica played. Erica writes this section in the first person:

There were three roles that I fulfilled during this research – as the principal of the school, the teacher of the class and the researcher collecting data. The advantage was that I was ‘assessing’ the children that I teach and was able to give them support and encouragement when they were completing the tasks. This is important when working with young children. The children were also familiar with me, and were comfortable to do the tasks with me. We cannot know how this influenced the results, but we believe it was better for the children that I did the interviews than having a stranger do so. It was also special to work with each child in the class. It was exciting that they each wanted to have a turn to work with me personally and the children tried their best to complete each task, as they had understood it. Their enthusiasm for the project was much appreciated. The disadvantage was that it made it difficult for me to remain objective, as a teacher knows who needs a bit of help and encouragement in order to complete the task, and who can confidently complete a task without assistance. I often wanted to use the opportunity of the data collection session as a lesson and guide each child to work out the correct answer, but I had to restrain myself by letting each child interpret the activity themselves. A teacher also wants the children that she teaches to succeed and I had to be very aware not to use the data collection process as an opportunity to teach patterning skills. It was rewarding to see that some of the children had an understanding of patterning tasks and procedures.

Erica’s dilemmas as teacher-researcher are not new, but they may be more acute because the children are young. We believe that the disadvantages of her knowing the children’s abilities and the potential for bias in responding to them within the interview and then in analysing the data are outweighed by the advantages of providing a comfortable and familiar environment for the children to participate in the research. If the children had not been at ease, it is likely that their confidence and performance would have been negatively affected.

**Conclusion**

In this study, which focused on the responses of eight young children to patterning tasks, we have seen clear evidence of a range of abilities in dealing with repeating patterns. While most children could copy and extend a given pattern, fewer were able to produce their own repeat pattern. Based on the data gathered we conjecture that two of the children who did not produce repeat patterns may have been working with a notion of “pattern as picture” on that task. We have shown evidence of some
children operating on the level of “what comes next” when completing a pattern. Some show awareness of pattern structure although they are not necessarily able to identify the pattern repeat, or to count the number of times a pattern has been repeated. Only one child was able to isolate the pattern element and use this to count the number of repeats. It appears that the ability to reason about “what comes here” may be a crucial step in moving towards a greater understanding of pattern structure, and the ability to identify the pattern element. Our conjecture points to the fact that further, and more detailed longitudinal research is required before we can start making universal arguments for the ways in which children respond to patterns more generally. In addition, we join the call for making early childhood practitioners aware of the research on patterning and of the importance of building on children’s patterning abilities in the early years. In addition, we concur with Waters (2004) on the provision of support for teachers to do this. Specifically we suggest that more attention should be paid to integrating pattern development across the curriculum, to increasing the complexity of patterns that children encounter, and to develop tasks that enable children to acquire an understanding of the pattern element.

Endnotes

1. See more a detailed discussion below.
2. This is discussed in more detail below.
3. Bev did not want to continue and so stopped before completing Task 3b.

References


Playing into gender stereotyping in a pre-school theatre production

Abstract
This article gives a critical analysis of a nursery school (kindergarten/pre-school) play performance, in which lyrics and movement set the stage for gender stereotyping and sexualised behaviour. Using extracts of lyrics, the reader is invited to participate as an outsider and ‘witness’ (in accordance with narrative therapy tradition) to the way in which young children are placed as objects of stereotyping, in roles determined by the teacher play directors. To begin with the reader is introduced to socio-cultural psychology (specifically to the theory of childhood development) that focuses on the acquisition of gender roles. I argue that many school plays, especially at pre-school level, are developed for the entertainment of the (mostly) adult audience without considering what will be in the best interest of the young ‘actors’. I refer to this as an act of perversion, while arguing that this is an educationally careless and irresponsible activity that prevails in school stage performances across a variety of schools in South Africa. I propose, rather, that a school play, as a cultural ritual should be employed as therapeutic tool to the aid of childhood development.

Keywords: school-play performance, gender stereotyping, sexualised behaviour, socio-cultural psychology, early childhood development, sexual abuse
An introduction: Looking at the stage

Imagine that you are seated in a school hall in a middle to lower socio-economic residential area. The lights are slowly dimmed and the music starts. You are the parent to a five year old, soon to perform in his first nursery school play. The curtain rises and the group of five-year-old boys sway to the music of a popular Afrikaans song, “Leeuloop,” (translated as “lion walk”) that celebrates rugby, a nationally popular sport, but also other male dominated ball sports. The children enact on stage to the following instructions:

untie your pants and your belt gradually
the lion walk is very seductive
and I will explain it step by step

The boys are all geared with two tennis balls on a string and as the next verse begins, they turn their backs to the audience.

pinch two balls between your legs
with your hands and knees on the gravel
pull down your pants and roar
if you want
as long as you do the lion walk
tennis balls, cricket balls, snooker balls if you want...

The audience laughs, some people singing along to the catchy tune as the boys bend forward (backs to the audience) pulling down the extra pants they have on and swinging the two balls between their legs. This scenario repeats itself three times. The undertone to the lyrics, and the enacted movement, are not lost on the audience, but there is no obvious discomfort. You watch, thankful that your own son is not performing to this specific song, and later you will have to explain to him your adverse response to this performance in an age-appropriate manner, without undermining the teachers involved. You realise the other parents may not address this topic with their children, seeing as this is a difficult brief.

The group of boys leave the stage to a big round of applause and the music to “I’m a Barbie girl”, performed by the group, Aqua, echoes through the auditorium. A group of four-year-old girls and boys walk on to the stage and, to the beat of the music, start swinging their hips, the girls pouting red painted lips as they sing along to:

I’m a Barbie girl in the Barbie world
Life in plastic, it’s fantastic
You can brush my hair, undress me everywhere
Imagination, life is your creation

You’re my doll, rock and roll, feel the glamour and pain
Kiss me here; touch me there, hanky-panky
You can touch, you can play
You can say I’m always yours, oooh whoa

On stage, the boys embrace the girls, putting their hands on where flat chests will one day develop into breasts. Wolf whistles echo from the audience and people comment on how sexy some of the girls are. You notice that only a few of the children are smiling, enjoying their moment on stage. Most are performing robotic-like, glazed eyes looking over the audience as if the mind is somewhere else, probably trying to see a familiar parental face. Their ‘spaced-out’ expressions remind one of the dissociative states typically associated with trauma (Levine & Kline, 2007), but also considered as a normal developmental coping mechanism (Watkins & Watkins, 1997).

The next song is performed by a four-year-old girl singing “I’m a single girl” by Sandy Posey:

The single girl all alone in a great big town
The single girl gets to tired of love letting her down
The life’s unreal and the people are homely
And the nights can get so lonely
The single girls needs a sweet lovin’ man to lean on.

You pay careful attention to the lyrics, the implied disappointment in love, then ensuing loneliness and the fact that a girl needs a man to take care of her. You wonder what sense the four year old is making of the themes so ‘innocently’ sung on stage. The concert ends to “I had the time of my life” from the film Dirty Dancing, which brings to mind images from the movie in which Patrick Swayze and Jennifer Gray dance on stage after Gray’s character (Baby) has transformed from girl to woman. Your eyes scan through the programme of the evening, and you notice that of the twenty-one items, only one well-known, rather outdated, children’s song is included, the rest are all adult appropriate with more than half falling in a category related to romantic/sexual relationships. On stage you witnessed ‘babies’ emulating grown-ups in dress, manner, song and movement and you wonder how the story of this play assists in blatantly depriving these children of innocent child theatre, exposing them to the world of stereotypical sexualised behaviour and role modelling.

Your mind goes back to when you were in nursery school, in a community not to different from this one. You still have photos of the event. You vaguely remember singing a nursery rhyme in a group, swaying to and fro; there was no choreographed movement then. There was barely any rehearsal before the big event and parents cheered, just for the pleasure of seeing their little one on stage.

At the end of the evening, you take your son home. He is tired after the big event. He mumbles that he will not participate in the next play; they practised too much and some of the teachers shouted when their movements were not in unison. In the following days, you hear him singing some of the lyrics as he plays with his Lego blocks and figurines, humming the lyrics to the songs, which he did not perform on stage. In conversation, you hear him speaking of the girls chasing after the boys, playing kissing
touches and you wonder if this game, where the aim is for a girl to catch a boy in order to kiss him, can be linked to the concert where a sexual undercurrent was tangible. While thinking this, you also keep the context of current childhood influences in mind, considering the television programmes and Playstation games your child is exposed to, and the community in which you reside (Bronfenbrenner, 2005). You are subsequently left with the question of what the school-play performance signifies.

From the stage to a conference

To invite the reader to participate further in the interpretation of the school play production, imagine that you have just attended the South African Professional Society on the Abuse of Children (SAPSAC) conference, where the topic of the sexual abuse of children was specifically addressed. A police detective shared case studies of babies that had been raped, and a representative of the Gauteng Department of Education introduced the audience to four children, ages ranging from pre-school to 10 years, who had been abused by people in their families. Imagine you heard the South African statistics being read to you; roughly 33% of girls, and 14% of boys are molested before the age of 18 (Labuschagne, 2010). In South Africa it is reported that a sex crime occurs every 20 seconds (Anonymous, 2005). The number of crimes committed against children in South Africa seems to be on the rise. 72 000 crimes against children were reported in 2000, with assault and sexual abuse taking the lead. Infants and young children are often the victims of the vilest criminal offences (Berry & Guthrie, 2003). Imagine hearing of how children are groomed for sexual abuse from a young age, most often by people within their families; and how television, computer games and the film industry desensitise children to violence, as well as, sexually inappropriate behaviour. Reference is made to how children are, from an early age, conditioned to identify with stereotypically aggressive models, such as WWE Wrestlers (in the case of boys) and sexy icons, such as the Bratz girls, through infant clothing and toys (Bird, 2010).

Now consider the Children’s Bill of Rights’ statement that children should be involved in decisions and actions that affect them (UNICEF, 2009; Tisdall, 2010). Children may also not perform work, or provide services that are inappropriate in relation to their developmental stage, or be placed at risk with regards to their well-being, education, physical or mental health or spiritual, moral or social development. The South African Children’s Amendment Act (Republic of South Africa, 2008) states that early childhood development programmes must provide children with appropriate developmental opportunities that will support children in realising their full potential; thus ensuring development of positive social behaviour as well as respecting and nurturing their culture, spirit, dignity, individuality (in terms of the language and development of each child), while meeting the emotional, cognitive, sensory, spiritual, moral, physical, social and communicative development needs of children. As such, a child’s best interests should be of paramount importance in every matter concerning the child. I concur with Evans (2001) that all early childhood activities should provide children with the best possible intellectual, physical and social tools and experiences
to enable them to reach their highest intellectual, physical and social capacities. More
seriously, they should be protected from acting out semiotic mediation that ignores
their age (Postman, 1994). One can question if children’s rights are ever considered
when school plays are organised, when lyrics are selected and choreography planned,
for the stage performance of especially young children. Fritz, Henning and Swart
(2008) asked this question in a study of a primary school play production in which
they found that the teachers who were producing a play were seeing themselves as
the target audience; and for this reason produced a play for an adult audience and for
their own theatrical, cathartic experience. My argument in this article is that it is critical
that the children’s acting, singing and dancing should, epistemologically, be aimed at
a child audience. The parents and other adults who come to watch the production are
almost ‘props’ in the audience. Children, in a school production, need to participate as
part of a cultural celebration, so as to learn. Do teachers, nursery school teachers in
particular, think about what children learn as they perform lyrics, wear costumes, use
props and make movements on stage?

Sociocultural psychology and stage(s) of child development

To interpret the scenarios that I have just depicted I view the scenario data from the
psychologies that have evolved from Vygotsky’s work on child development. According
to Vygotsky (1934/1978/1986/1992), human development is a ‘cultural’ phenomenon
in that the semiotically mediated world of the growing child plays a large part in
development. On this view, young children engage in their social environment, and it
is through this act of interaction that their development occurs (John-Steiner & Mahn,
1996). This view is supported by Rogoff (1993; 2003), who sees learning to engage with
culture as a development that happens in stages of increased participation. I use her
expansion on Vygotskian theory as the organising framework with which to discuss
the stages of childhood development. In such a framework individual activity is not an
internal manifestation of an individualised, intrapsychic process or the lawful patterns
of responses to external stimuli, as some innatists would have it (Smith, 2001). Vygotsky
(in John-Steiner & Mahn, 1996, p. 192) proposed that development could be regarded
as the transformation of “... socially shared activities into internalized processes”. In
this way he rejected the Cartesian dichotomy between the internal and the external.

In order to understand the interplay between internal and external influences on
development, Rogoff proposes three planes of activity, which occurs within a group
based on various aspects of participation referred to as apprenticeship, which occurs
on the community (viz. interpsychological) plane. According to Rogoff, individuals,
in this case the children participating in a school performance undergo a process
of socialisation based on their engagement in a specific community. The children
develop according to the guided participation in the school play, as directed by their
teachers, which occurs on the interpersonal plane. The children then internalise on the
personal plane what is deemed appropriate through the interaction with each other
on stage. As such, development commences within the group as a whole, between
Fritz – Playing into gender stereotyping in a pre-school theatre production

individual members, and within the individual member (Rogoff, 1993, p. 141). These sociocultural views of participation are based on a belief in “an interdependence of individual mind, interpersonal relations and social situations that enable learning or development” (Heath & McLaughlin 1994, p. 473). Learning can, therefore, not be regarded as an independent, individual process with social aspects, but rather the result of participation in a community.

In a similar vein, Veresov (2004) referring to Vygotsky (1983, p. 145) explains that any function in the child’s cultural development appears ‘on stage’ (in the original Russian and in the theatrical discourse that Vygotsky used in some of his writing) twice, that is, on two planes. Firstly, a child develops on the social plane, among people on an inter-psychological level. Then the child develops on a psychological plane on an intra-psychological level, the ‘second stage’, or part of the theatrical stage. According to Veresov, the words ‘on the stage’ and ‘on two planes’ are not metaphors, which might be omitted or ignored. He explains ‘stage’, by referring to the Russian meaning, according to which ‘scene’, or the ‘arena’, literally refers to the place in the theatre where actors play. The concept ‘scene’, therefore also resonates on two ‘planes’; the front plane (also referred to as ‘the first plane’ and which could be seen as ‘upstage’ in theatrical discourse), and the back plane (often referred to as ‘the second plane’, or ‘downstage’ in theatrical discourse). Situating the language of one of the central tenets of Vygotskian theory of development in the language of theatre, ‘participatory action’ (Rogoff, 1991), in the culture is thus acting on both ‘planes’. The main events of the ‘performance’ of learning and development, according to theatre’s tradition, should happen on the front plane of the scene, or ‘upstage’ where the other cultural participants, such as parents and elders, can see it clearly. On this view, then, human development occurs, interactively, on two planes: inter-psychologically (on the first, front plane) and then intra-psychologically (on the second internal, individual plane). In the ‘downstage’ of individual action scenes are not as prominently exhibited as in the ‘upstage’ area. Similarly, intrapersonal development is not as prominent as interpersonal interaction.

So, the image that Vygotsky used is now an image-come-to-life. The signs and the symbols (the semiotic content) that these children physically embody through movement, in song and speech, are the messages that the school and its culture project in a tangible way. While young children learn through mediated, semiotic action, they are also scaffold to reach the outer limits of their potential at any given moment, by way of “dramatical collisions” (Veresov, 2004) on the “stage of their minds”. The concept of dramatic collisions, as described by Veresov, pertains to the contradictions between the child and the social setting, in terms of the child’s level of development and demands of the social surroundings. These collisions can be regarded as moving forces of development that relate to the “zone of proximal development” (Vygotsky, 1978, p. 86). Veresov describes childhood development as occurring on different levels of development in different functions in the child. At each stage of development, there may already be developed functions, which he describes as “…‘fruits’ of development, and there are functions that are in a process of maturation; the ‘buds’
or ‘flowers’ of development” (Veresov, 2004, p. 13). According to Zinchenko (1996, p. 8 in Veresov, 2004, p. 9), development can therefore be characterised according to cultural-historical psychology, “as a drama played concerning interaction of real and ideal forms”, with ‘ideal forms’ referring to the culture to which a child is exposed to since birth. In the case of the school-play performance that I describe the culture is reflected by the semiotics that are mediated; here young children entertain adults, acting to adult lyrics, simulating adult movements, with strong sexual undercurrents, and presenting themselves as ‘little adults’ to the applause of the audience. This all happens in a public space with the stamp of approval of the school, thus authorising the event as a cultural celebration. From the view of developmental psychology the children are indeed acting out the scenes of the future, but not as Vygotsky originally theorised play as a tool for advancement in the ZPD.

“Performing a head taller than they are”

According to Vygotsky (1966/1933, p. 101):

Play creates a zone of proximal development of the child. In play the child always behaves beyond his average age, above his daily behaviour; in play it is as though he were a head taller than himself. As in the focus of magnifying glass, play contains all developmental tendencies in a condensed form and in itself a focus of magnifying glass, play contains all developmental tendencies in a condensed form and in itself a major source of development.

Hence the question, if children learn and develop, by “performing a head taller than they are” (Vygotsky, 1978, p. 102), while engaging in a school-play performance as the one described, is it scaffolding learning to their advantage, or does it place the young children in a compromising situation? If one does not take into account that these are five-year olds, the scenes that I have witnessed may be described as scenes in which ‘being’ female is signified by acting as sexual sirens, or helpless victims. The male performers can be seen as male testosterone fuelled predators.

Young children learn through aesthetics, by engaging in play through art, music, movement, drama, story and performance as much as they learn by way of instruction (Henning, 1981; 1991). Classical theorists of child development such as Piaget (1969), Vygotsky (1978), and Bruner (2006), as well as contemporary theorists such as Gopnik and Meltzshoff (1997) and Carey (1985; 2009) foreground play as a developmental medium. There is no doubt a very powerful tool in play of various types. Play is a powerful tool for ‘mediated action’ forms that scaffold young children’s entry into a culture, whether it is of learning mathematics, or learning to practice a code of conduct, or learning how to be a member of a culture in the public spaces of citizens. It makes sense that much of Vygotsky’s terminology comes from his involvement in the theatre world of Moscow in the 1920s (Veresov, 2007; Whitelaw, De Beer & Henning, 2008) and it is evident in the analysis of his work by Russian scholars such as Veresov (2004; 2007) and also in the work of Jerome Bruner (1986; 2006).

What I wish to highlight for the interpretation of the school play production is that the social interaction that happens during scaffolding and mediation is internalised
as a package. From this view Vygotsky argues that it is not the “higher psychological functions’ of an individual alone that scaffolds learning (and learning to be), but that all learning is a form of social interaction, and that it is the social interaction itself that is internalised (see also Henning, 2008). Vygotsky says, in this regard about play, “[t]he problem is that it is nearly impossible to define ZPD in play on the basis of the basic principle of the operation of the higher psychological functions (= personality),” while it “can be accomplished to the full extent in the form of drama” (Vygotsky, 1986, p. 55). The ‘drama’, according to Veresov, can be accomplished in its basic form in any classroom, but when education ventures to the public space of an open stage, it takes on another and almost more daring form. It is in this space that I discuss the school performance referred to in the article. It is also in this space that I wish to argue for the use of school drama performances as therapeutic interventions, that is, as zones of proximal development in which children and youth can safely ‘play’ with the elements of their lives that they find obstructive. Thus I want to turn the idea of the current form of the school production that I described on its head.

What really happens on the school stage?

I wondered what children learn about themselves, others, as well as their own sexual identity, when they participate in school plays, such as the one I have described? To my mind this is a very relevant question if you consider that in the community where this school performance occurred, children will be involved in at least two nursery school plays if they entered the school at the age of three. Then add another three performances in primary school (one every second year) and a further three in secondary school. Now keep in mind, children rehearse for the play at least 10 to 20 times before it is presented to the audience; often in two to three shows. During this time lyrics and movements are rehearsed on the different stages of development that is subsequently internalised and possibly automised. If play creates a zone for proximal development (Vygotsky, 1977), the implication is that children can learn about their gendered role by acting on stage. This is aligned to research by Lave (1996) that focuses on the socialising effects of schooling and identity formation.

Sexual stereotyping and role modelling

To my mind, very specific cultural gender stereotypes were presented by the children while acting out the play. Gender role identity and sexuality starts already during infancy, based on behaviour that is related to what a society or community regards as typical to being a male or female (De Witt, 2009; Freeman, 2007). According to social cultural theory, all gender differences can be regarded as the socially acquired product of culture, influenced by physical, cognitive, social and emotional dimensions (De Witt, 2009). As such, a school play that engages pre-schoolers in sexualised movements, accompanied by music with sexualised lyrics, exposes the children to implicit gender stereotyping. This is a cause for concern when one considers the dramatic collisions
between these children’s current developmental stage, and that which is presented as the ‘ideal’ by their teachers.

Large parts of South Africa are patriarchal with the understanding that men possess power over women and children. This is exacerbated to the extent of possibly manifesting as physical violence and even sexual abuse (Richter & Daves, 2008). According to Townsend and Dawes (2004) socialisation practices perpetuate behaviour ascribed to male and female adults and children. This is where the question can be asked, what happens if children in their early childhood see the world with the eyes, speech and movement related to the sexual stereotypes of the adults scaffolding their development?

The process of stereotyping occurs, as an individual is unable or unwilling to react to a person as an individual, but rather classifies the person based on assumptions founded on rigid traits and group classification. This knowledge develops during the pre-school years and reaches a ceiling by the age of five to six years (De Witt, 2009). The songs sung in this concert subscribed to the typical Western stereotype of females (Hopkins, 1983) as being passive, emotional, and subservient, and ever in search of a male to take care of her. A school play can, therefore, become a powerful tool to either support non-biased and gender-fair play (Evans, 1998) and role identification, or lay a foundation of stereotypical behaviour.

**Process-oriented art towards enhanced cultural learning**

Similar to Vygotsky (Lim, 2004) creative expressive arts therapists such as McNiff (2004) and Malchiodi (2003), agree that children’s artwork should not be product driven, but rather process orientated. So, how can school-play performances be planned and presented while considering the seminal work of Vygotsky and those that follow? I argue that a school play should be planned and produced according to the stages of childhood development. Instead of adults selecting popular adult songs, lyrics for school-play performances need to be selected through the active engagement of children. The whole process of song selection can in itself present a learning opportunity to engage children in thinking what they like about the music they listen to, what grabs their attention when they listen to a song and how they can move to the music. Costumes need to be tailored to suit the developmental level of child performers, by, once again, engaging children in the process of the stage production. A school play should present children with ‘an experience’, since an event that is intrinsically enjoyable creates excitement and that holds immediate meaning (Cuffaro, 1995). Young children, in preparation for abstract conceptual thinking, use art through play to make sense of the world. As such, “learning becomes meaning-making when children engage their mind, and art is a primary path for this achievement” (Lim, 2004, p. 484).
From exhibiting children to using a school play as a therapeutic opportunity

I regard play, including ‘play on stage’, as a powerful tool for expressive arts therapy (McNiff, 2009; 2004; 1992; Malchiodi, 2003; 1997). With reference to the cultural, historical origins, and the home of Vygotsky’s work (Stetsenko, 2004) theatrical, dramatic expression can be utilised to do what the production I described did not do. Through play children make sense of their world, take responsibility for actions, develop new concepts, increase their social skills and are supported emotionally (Jessee & Gaynard, 2009). Research (Sullivan, Kehle & Bray, 2009) indicates that there is a link between learning and relationships. My argument is that if school-play performances can enhance relationships through fostering a “healing setting” (Wampold, 2001), it will also contribute towards the learning development of children (Rimm-Kaufman & Chin, 2007).

School plays can perform the function of ‘edutainment’ for parents and teachers, or it can truly be scaffolding for experiences of the young. Organised activities that are playful, in particular, are capable of providing a learning and supportive opportunity (Hakkarainen, 2006). In the latter case, teachers, as ‘master practitioners’ will consider the learning potential a play performance holds for their young ‘apprentices’. I argue, considering the South African landscape, that a school performance can be utilised as a school community intervention through the purposeful engagement of children in music, song, movement, dance, drama and other forms of creative expression. By doing this, the ‘master’ can assist the ‘apprentice’ in finding solutions to everyday problems (Hedegaard, 1998), e.g. how to regard gender, through the focused engagement in a school-play performance. When considered in this way, a school play is an ideal opportunity for enriched learning, especially with the integration of various art forms, such as song, movement and dance. School-play performances, as such, need to be informed by,

a) Children’s everyday life situations and challenges characteristic of their community;

b) Subject matter that is deemed relevant for their learning; and

c) Their engagement on and off stage contributing towards development, considering leading childhood development theories.

Conclusion

So, sitting in the school hall and witnessing nursery school children gyrating to adolescent/adult lyrics, the question comes to mind as to how school-play performances can be utilised as a celebration of childhood towards scaffolded learning (Fritz et al., 2008). How can adults use the ritual of school-play performance to create developmental spaces considering the different stages of development? I would like to
conclude by creating an alternative performance contrary to the one I initially shared with the reader.

So, again, imagine you are seated in a school hall in a middle to lower socio-economic residential area. The lights are slowly dimmed and the music starts. You are the parent to a five year old, soon to perform in his first nursery school play. The curtain rises and the group of five-year-old children sway to the beat of African drums, with the song “We are one” from the Lion King, playing in the background.

But you’ll see every day
That we’ll never turn away
When it seems all your dreams come undone
We will stand by your side
Filled with hope and filled with pride
We are more than we are
We are one

As you watch, you suddenly understand why your son spoke about wild animals lately and how each animal relies on another for survival. He initially wanted to be the king of the lions, but once he realised Rafiki, meaning ‘friend’ in Swahili, is actually a wise person and similar to a medicine man (to his mind therefore a doctor), he became excited to play the role. You notice the enthusiasm with which the group of children in the corner are beating the drums. The performance of the children can be described as energetic to the point of being slightly chaotic. Their smiles are broad and you remember how you had to assist your child in preparation for his transformation into Rafiki. Seeing as the cost of the school play had to be minimal, the children were engaged in how they could present their characters on stage, and, therefore, they had to use their imaginations in the development of their costumes and props. Old stockings became tails, hair-bands were used to create ears with a bit of cardboard; children were engaged in painting hardboard trees, and one of the more withdrawn children volunteered to be a rock on stage.

As the performance continues, you recall the conversation you had with your son regarding how it came about that they would be performing The Lion King. He explained how they were asked to share their favourite movies and they then had to vote for the one they would perform, after they first had a discussion about the meaning of each story. He explained that their roles were ascribed based on their personality types. You remember the meeting you attended during parents’ evening where a psychologist, knowledgeable in the field of creative expressive art therapy and early childhood development, informed the parents and teachers that the participation of the children took preference over perfection in movement. She emphasised the importance of mass participation and that even the children who did not want to perform on stage, would still be involved in the planning of the performance. She also explained how children learn in interaction with each other and develop social skills as well as learn about themselves as they engage on stage.
Later that evening, as you drove your exhausted but happy child home, you were grateful for a school where teachers gave preference to the learning of those in their charge, as opposed to engaging children in activities for the benefit of the teachers. You appreciate all the energy they invested in tailoring the play to the developmental needs of the children, engaging the children in decision-making, being sensitive to the multi-cultural population of the school and steering clear of sexual stereotypes.

**Word of appreciation**

I would like to express my appreciation to Elbie Henning, who acted as critical reader and provided scaffolding to this article.

**Bibliography**


Abstract
Historically, the concept ‘child’ has a Lockean (1960) connotation, as empty slates new born infants, are considered weak and helpless, until the improvement of growth and age has removed this deficient state of childhood. In modern societies, including South Africa, children are still viewed as citizens-in-waiting, and as citizens who need to be inducted into their future role. This deficit model of childhood is reflected in the construction of democratic citizenship education in post-apartheid South Africa. In this article we present a theoretical justification for Philosophy for Children (P4C) as an avenue to individual enlightenment i.e., education that entails the development of a child’s mind, of rationality or the capacity to think. In the light of a Philosophy for Children agenda as an educational pedagogy, we argue that doing philosophy with children starting from an early age has a special significance in education for democratic citizenship in post-apartheid South Africa.

Keywords: philosophy for children, education, democracy, citizenship, deliberation, community of enquiry

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Introduction

There can be no [...] liberty without virtue, no virtue without citizens; create citizens, and you have everything you need; without them you have nothing but debased slaves, from the rulers of the State downwards. To form citizens is not the work of a day, and in order to have men [and women] it is necessary to educate them when they are children (Rousseau, 1996a, p. 147).

Rousseau presents an argument for the need to Educate for Citizenship starting from an early age whether in well-established democracies, or in those societies in transition to democracy. Put differently, the inability to ‘develop’ a citizen, a child’s ability and inclination to act for him-/herself gives rise to slavish obedience to the state.

In South Africa’s Constitutional Democracy, the term citizenship reflects two distinct formulations; citizenship as a legal status (to be a citizen) and citizenship as a practice (to act as a citizen). In other words, to be a child means to enjoy the rights, privileges and benefits of citizenship. An objection might be raised that children are young with an insufficiently developed sense of responsibility to participate in political and socio-economic issues on equal terms with adults, but here is a powerful statement by Rousseau in support of Education for Citizenship from childhood onwards. Education for democratic citizenship is not concerned with the nature of adulthood vis-à-vis childhood or adolescence. Instead its concern is with the Republic of South Africa’s Constitution’s (1996) provision for every citizen (this includes both children and adults) the right to, access, defend and preserve individual liberties and appeal to the public good. In the light of Rousseau’s assertion, this article discusses, not only, Philosophy for Children as a vehicle to create democratic citizens, but it also addresses philosophical and pedagogical questions:

• What are the primary aims (and conceptions) of education – and by implication of citizenship education?
• What can Philosophy for Children offer as an educational pedagogy that emphasises democratic principles?
• In the case of South Africa, is post-apartheid education for democratic citizens able to foster active, critical and inquiring children between the age of 7 and 18?
• What can Philosophy for Children contribute to build, strengthen and consolidate common South African citizenship?

Aims and conceptions of education: problems and virtues

What should be the aims and conceptions of education, and, by implication, of democratic citizenship education? According to Hamm (1989) there are three distinct, but intertwined understandings of the concept of education:

1. The sociological view of education places an emphasis on socialising the child into the existing culture, e.g. family norms and practices;
2. The institutional notion refers to the development of a person, as a result of influences from schools and other formal institutions, e.g. whatever goes on in schools is something that exists in tandem with the official goals of schooling; and

3. The general enlightenment idea, which does not necessarily refer to socialisation or the attendance of formal schooling.

Instead, education is a form of human achievement involving the development of the mind. Hamm’s conceptions of education are exemplified by Plato’s (1994) political authority, Locke’s (1960) family authority and Mill’s (1989) universal position, which is concerned with general enlightenment. According to Plato (1994), the State uses its political authority to educate the child (referring to education for guardianship) to desire not only what is good for themselves, but for their society, so as to pursue the good of all people. Plato (1994) writes that it is one of the State’s chief responsibilities to inculcate in school children loyalty to the values of the State so that they “hear only morally sound stories, which will help them gain the appropriate social attitudes, such as [...] the desire for political unity”, and so on (p. 70).

In South African schools, the State as the ‘political’ parent of all its school children (7 to 18 years of age), hopes to foster good citizenship, and what the former Head of State Thabo Mbeki called a ‘new patriotism’ (Department of Education, 2001, p. 15). As this article will show, when the State School Pledge works explicitly with the values enshrined in the Constitution it speaks to children of their duty to obey, and claims also its right to rule them. The School Pledge creates the conditions under which its children are bound to honour and obey the State. In so doing, the State claims its right to rule over South African children. Plato’s political authority and its notion of education for citizenship are open to a number of objections in the South African context; 1) the difficulty in determining the best constitution for a South African society, and the correct conception of ‘good’ for its children; 2) the State’s position as sufficiently wise and conscious to define the common good; and 3) its power to promote individual autonomy, a citizen’s ability and inclination to ‘act’ for him-/herself. Let us turn our attention to Locke’s ontological claim, and his argument that children are not born in a state of freedom and equality.

John Locke’s (1960) utilitarian theory places educational authority exclusively in the hands of parents. The State of nature, says Locke, is first a state of perfect freedom where people are in

[... ] possession of their Strength and Reason [...] capable to provide [their] own support and preservation, and govern [their] actions according to the dictates of the Law of Reason which God had implanted in [them] (p. 305, addition ours).

Second, it is a state of equality where “power and jurisdiction is reciprocal – [there is] no relationship of subordination or subjection” (p. 304). According to Locke (1960), children are not born in this state of equality because they are deemed newborn infants, helpless and weak. However, our definition of school children as free, equal participants is different from Locke’s deficit model. To counter the defects of this
imperfect state all parents are, by law of nature, under an obligation to preserve, nourish and educate their children, by taking care of their offspring during the imperfect state of childhood. In turn, children have a perpetual obligation of honouring their parents. According to Gereluk (2010) three common arguments are given for increasing natural parental rights in their children’s schooling:

- Parents are the best in protecting their own children’s interests;
- Parents have a natural right to raise children congruent to their norms and values;
- If the State believes in freedom of the individual, then it must not interfere with the rights of parents to pass their values and beliefs on to their children (p. 126-128).

There are weaknesses in Locke’s parental theory:

1. Parents might not have the necessary knowledge and skills to preserve, nourish and educate their children; and
2. Parental power might also minimise a child’s exposure to alternative values, beliefs and experiences that are essential for the child’s development; education not controlled by parents can provide opportunities for the development of deliberation and critical judgement to occur;
3. Parental rights are likely to breed sectarianism, as well as localised and isolated forms of knowledge and education; and
4. This parent-child relationship is likely to create and promote forms of inequalities, which is particularly problematic in South African schools given the country’s past.

Let us turn our focus to Mill’s (1989) universal education standards that sought to develop a child’s mind, through rationality or the capacity to think.

John Stuart Mill’s (1989) theory refuses to rest educational authority in any hands without the assurance that the choices of children will not be prejudiced in favour of some ways of life as opposed to others. At the centre of Mill’s theory of education is the liberty principle, which holds that the individual is not accountable to the State or Society for his/her actions, in so far as these concern the interests of no person but himself/herself:

*It is in the case of children, that misapplied notions of liberty are a real obstacle to the fulfilment by the State of its duties [...] so much less do the generality of mankind value liberty than power [...] that to bring a child into existence without a fair prospect of being able, not only to provide food for its body, but instruction and training for its mind, is a moral crime, both against the unfortunate offspring and against society; and that if the parent does not fulfil this obligation, the State ought to see it fulfilled, at the charge, as far as possible, of the parent (p. 105).*

There are three points worth noting about Mill’s liberty principle. Firstly, children (human beings in general) have absolute individuality and absolute freedom; ought to be able to do, pretty much, whatever they desire. Secondly, a parent is to be compelled to guarantee a child’s right to education, in order to develop children into rational and
moral human beings. Thirdly, the overarching aim of education is the development of children, which entails the development of the mind, of rationality and other receptive forms that distinguish one as being human. Furthermore, either State or parental power can be justified on the basis that they promote children’s natural liberties in the medium to long-term.

However, it is our contention that Education for Democratic Citizenship that conditions, indoctrinates and brainwashes school children is ruled out on ethical and reasonable grounds because it is likely to dispel any hope of:

- Safeguarding liberty principles in schools, a child’s ability and inclination to act for him-/herself; and
- Infringing upon a child’s growth and development i.e., the mind, rationality or the capacity to think; and creating communities of enquiry – ‘free public spaces’ where deliberators are moral and political equal agents.

On this basis, we make the assertion that the principal concern of education, and by implication Education for Democratic Citizenship in South African schools, should be the development of the mind, i.e. the capacity of children to think, reason and act by themselves. In Hamm’s (1989) words,

> [...] education is the achievement of a desirable state of mind characterised by knowledge and understanding in breadth and depth with cognitive perspective and by corresponding appropriate emotions and attitudes, these brought about, deliberately in a manner not to infringe upon the voluntariness and wittingness on the part of the learner (p. 38-39).

In other words, Hamm’s basic aim of schools is the pursuit of general enlightenment. At the same time, we note that State schooling and parents’ obligation to take care of their offspring during the imperfect state of childhood can indeed contribute to children’s education as a form of general enlightenment. For example, one can go to school without acquiring any knowledge or understanding. Again, one can also grow up in a particular traditional form of life without the person developing a broader sense of the reality of life. In brief, the primary aims of education and, by implication, education for democratic citizens are to; 1) promote children’s autonomy, as well as their ability and inclination to ‘act’ for themselves; and 2) guarantee children the freedom to opt out of State or parental conditioning, indoctrination and brainwashing. The aims and conceptions of education, whether State, patent or individual choice should place the development of democratic citizenship at its centre.

**Philosophy for Children: Its role in democratic participation**

Historically, Philosophy for Children has served to foster a progressive educational agenda, and thinkers in support of it have often argued that it seeks to prepare children for citizenship within a democratic society (Fisher, 2007; Vansiegleh, 2005). Matthew Lipman has posited that, as a programme, Philosophy for Children aims at improving the conditions of teaching and thinking in educational systems (1991). He
has also suggested that the goal of the program is helping children learn how to think by themselves. Lipman (2003) declares:

If the schools could do more than teach children to exercise better judgement, it would protect them against those who would inflame them with prejudice and manipulate them throughindoctrination. It would make them better producers and consumers, better citizens and better parents (p. 273).

In effect the central focus of doing philosophy with children is improving reasoning ability, developing creativity and augmenting critical thinking. This assertion is in line with Hamm’s primary purpose of education, that is, the pursuit of general enlightenment. Like Dewey (1966), Lipman emphasises that introducing children to the activity of philosophising strengthens thinking ability and prepares children to function in a democratic society where they will deal with problem-solving, making intelligent and informed decisions and acting autonomously. In addition, it is by engaging in a communal search for understanding, based on a belief that mutual understanding of community members across differences of opinion and diversity of interest through dialogue and discussion (Vansieleghem, 2006), that a democratic ethos is fostered in children at an early age. Such a background has driven the declaration that

[...] the community of enquiry reflects democracy and initiates children into the principles and values of this paradigm. [...] By exercising in school freedom of thought and action, democracy will become their way of living when they become active adults within their society (Sharp, 1999, p. 12).

Doing philosophy with children is a holistic dynamic approach, which promotes active, critical and inquiring minds. To that end, in order to achieve these goals, schools should involve building what Charles S. Peirce coined a ‘community of inquiry’. By community, Dewey (1966) refers to a group of like-minded but diverse individuals who come together around a common concern over time. Such a community is a democratic society of members who, together figure out challenges, plan and solve problems that arise from their world. Schools form one of those communities wherein children can be encouraged to think for themselves. As Vansieleghem rightly puts it, “philosophy offers the possibility to think autonomously by supplying instruments which enable the individual to question the others and the self” (2006, p. 177). As Lipman and his contemporaries in the Philosophy for Children field have recommended, in order for children to do philosophy they should be a community of inquirers in which individuals develop caring, reasonable, and autonomous interconnectedness with others; a small community characterised by a dynamic peer co-operation (Daniel, 2001; Schleifer, Daniel, Lafortune & Pallascio, 1999) in which autonomy leads up to interdependence. Referring to community, Lipman (1995) explains that ‘community’ in community of inquiry stresses,

[...] the social, affective, and creative aspects of the process. Social because the community’s members recognise their interdependence, and at the same time acknowledge each other’s distinctive points of view and perspectives. Affective, because participants in such communities care for each other and for the procedures of inquiry and creative because such communities encourage participants to think for themselves-independently, imaginatively, and with originality (quoted in Schleifer, 1996, p. 97).
The introduction of Philosophy for Children through the pedagogy of community of enquiry has the potential to develop in young citizens the attitudes, orientations and dispositions that will enhance their lives as democratic participants, by encouraging their active engagement in communal life. Philosophy for Children is a pedagogy that integrates the methods and content of philosophy and the pragmatist ideal of the community of enquiry, in order to facilitate reflective thinking skills, as well as the social skills and attitudes necessary for democratic citizenship. According to Lipman and Naji (2003), community of enquiry is a

[...] methodology, involving mutual criticism and scrupulously careful voicing of opinions and judgement, which educators recognise as an educational approach that prepares children to become citizens in a democracy (Lipman & Naji, 2003, n.p.).

By drawing on Dewey’s notion of community, as depicted in this section, we hope – in the process of this article – to lay the basis for building classroom communities of inquiry appropriate to the South African context. We propose a more democratic way of making democracy the prevailing doctrine in South Africa by adopting this notion of the community of enquiry. At this point, the attention turns to the modern theories of democracy that shed light on the educational benefits that comes with treating children as fellow citizens or members of democratic societies.

In *The Social Contract*, John Rousseau's (1968) theory of participatory democracy is designed to develop the personal and public dimensions of Education for Democratic Citizenship in three ways; 1) participation increases individual freedom by enabling the child to be (and remain) his/her own master; 2) a participatory process ensures that all children are equally dependent on each other and equally subject to the law; and 3) participation has an integrative function; it increases the feeling among children that they belong to their community. The major implication of Rousseau’s theory of participatory democracy for the education of children is that it promises to teach them how to preserve individual liberties and appeal to the public good. This implies that unless children are educated to contribute both to their personal and public dimensions of citizenship, i.e. to develop their characters along with taking part in matters concerning the State the realisation of their status as citizens will remain a mirage. Rousseau’s argument, which centres on the pursuit of the public good and individual freedom, had an influence on a number of theorists.

In his essay ‘Representative Government’ (1975), Mill claims that it is only within a context of popular participatory institutions or large-scale society that one sees an active type of character fostered:

The active, self-help character is not only the best, but is the likeliest to acquire all that is really excellent. The private citizen is called upon to weigh interests not his own; to be guided, in case of conflicting claims, by another rule than his private partialities to apply at every turn, principles and maxims which have for their reason of existence the common good. He is made to feel himself one of the public and whatever is for their benefit to be for his benefit (Mill, 1975, p. 340-341).
For this reason, Mill’s preferred form of government is to be judged by its effects on citizens, including children, by determining whether they are able to transcend their subjective, self-regarding perspective and take the public interest into account. For example, the South African Schools Act (1996) allows children to participate in school governance. Although she is not writing about South Africa, Pateman (1970) maintains that a democratic institution is more than likely to force an individual “to widen his horizons and take the public interest into account” (p. 30). There is a stress here on practising popular government at local level, as an enabling condition for participation on a large scale. Although Rousseau and Mill are not writing about Philosophy for Children, their proposal that participation of children in school government is likely to develop active characters, is an assertion that is compatible with the philosophy for children agenda. Drawing from Rousseau and Mill’s work, the connection between ‘philosophy’ and ‘children’ becomes evident given that participatory institutions are able to foster active, critical and inquiring children able to contribute to the general good. This personal development from egoism to autonomy enables children to become free and fulfilled beings. It is necessary, as this juncture, to evaluate recently proposed compulsory citizenship education initiatives, aiming to promote the development of democratic children in South African schools.

Philosophy for Children: Critical analysis of education policy

The Bill of Responsibilities (2008) stipulates the following:

The right to citizenship expects that each of us will be a good and loyal South African citizen. This means that we are responsible for: obeying the laws of our country, ensuring that others do so as well, and contributing in every possible way to making South Africa a great country. […] I accept the call of this Bill of Responsibilities, and commit to taking my rightful place as an active, responsible citizen of South Africa. By assuming these responsibilities I will contribute to building the kind of society, which will make me proud to be a South African (Department of Education, 2008, p. 4-5).

The Bill seeks to inculcate in school children loyalty to the values consistent with the Constitution of Republic of South Africa. However, Education for Democratic Citizenship approach is also likely to promote loyalty using democratic means. In addition, the Bill’s concept of ‘good’ and ‘loyal’ citizenship paints the picture of a child who, in the absence of explicit exhortation, is incapable of acting in a socially and morally responsible manner. The language of ‘obedience’ is highly revealing given that the words ‘good’ and ‘loyal’ are not defined or elaborated upon. Furthermore, school children are urged to accept and commit themselves to what is, in effect, an impoverished sense of citizenship. On the whole, the language of ‘expectation’, ‘acceptance’ and ‘commitment’ manifest in these prescriptions is not appropriate for a democratic South Africa. The Bill is likely to make South African schools the instruments of slavish obedience to the State, as Rousseau cautioned us. In his article, ‘Schools are bad places for kids’, Holt (1974) asks whether schools “are trying to raise sheep – timid, docile, easily driven or led – or free men?” (p. 43). With regard to South Africa, we see the Bill is intended to make school children “a flock of sheep
innocently nibbling the grass side by side” (Mill, 1975, p. 345). If what the DoE desires is sheep, namely docile and unquestioning dependents, the Bill as part of a compulsory curriculum subject would be the appropriate way of preparing South African children for citizenship. It follows that the Bill of Responsibilities is inclined to demand, if not dictate, unquestioning obedience from learners in South African schools. The Bill is not a democratic approach to cultivating democracy, while by using Philosophy for Children methods Education for Democratic Citizenship is a democratic undertaking. We maintain that although the Bill claims to promote an ‘active, responsible citizen’, in the final analysis it sets out to foster inactive, obedient and passive South African schoolchildren. The national Schools Pledge (2008) has been proposed for daily recitation at assemblies and memorisation in classrooms.

The national School Pledge (2008) reads:

We, the youth of South Africa, recognising the injustices of our past, honour those who suffered and sacrificed for justice and freedom. We will respect and protect the dignity of each person and stand up for justice. We sincerely declare that we shall uphold the rights and values of our Constitution and promise to act in accordance with the duties and responsibilities that flow from these rights. ‘ke e: / xarra // ke [written in the language of the /Xam San people, which literally means, diverse people unite] Nkosi Sikelel’ iAfrika [God bless Africa] (Department of Education, 2008, addition ours).

The School Pledge is noble and inspirational in that firstly, it calls on the children to acknowledge the injustices of the past; and secondly, honours the heroes and heroines who endured suffering and sacrifice for justice, democracy and citizens’ rights in South Africa. Against this background, the words of the Pledge are meant to evoke national pride and promote nation-building and common South African citizenship. In terms of citizenship, it might be said that the document is crafted with the aim of producing informed and thoughtful South African children. In support of this claim, alongside the vow of allegiance, the national anthem is taught and sung in South African schools. However, similar to the Bill, the patriotic School Pledge is likely to promote obedience, if not unquestioning loyalty because mere repetition of lines contained in the Pledge does not teach democracy.

The most notable objection is that school children will have to recite and memorise the Pledge. It would appear, then, that the mere recitation of the Pledge’s words undermines the central focus of doing philosophy with children, that is, improving reasoning ability, developing creativity and augmenting critical thinking among children. Although he does not write about the South African pledge, the School Pledge infringement with individual autonomy is succinctly evoked by Gatto (1993) when he writes:

Our system of government school destroys both mind and character. It prevents the formation of the most precious resource of all – a self. To have a self you can trust it must be singular, it must be bold, it must be brave, resourceful, strong, self-reliant, unfettered. Does anyone […] think government schools teach such things? (cited in Davie, 2005, p. 18).

Gatto’s quotation alerts us to a system of government that lacks a holistic approach to educate its citizens, school children to be precise, about what it means
to be democratic. In South Africa, as elsewhere, a government’s holistic undertaking would include an Education for Citizenship that seeks to develop active characters that contribute to the common welfare of South African society. The well-rounded South African citizen of the future is not merely a historically aware child, but an active, informed and critical individual. On the contrary, the pledge is likely to lead to unreflective socialisation through the teaching of social honour in South African schools. A more damaging outcome would be the reinforcement of an unquestioning and uncritical attitude to the values that guide South African social interaction, which will amount to a socialisation into unthinking compliance, if not unreflective patriotism. We contend that the values which South Africans, in general, and school children, in particular, have desired for generations – freedom, independence and critical thinking – are not consistent with children repeating lines in an habitual manner. This conception of learning endorses rote compliance to the detriment of a free, independent and critical society towards which South African people aspire. If we are to reify our Constitution and our Bill of Rights rather than just hear it interpreted for school children, the DoE’s responsibility will be to teach South African children to think, and not to impose rote compliance or to indoctrinate them. The values prescribed and enforced in the Bill of Responsibilities and the School Pledge run the risk of closing down, rather than opening up, a meaningful debate about values that South Africans have desired for generations, and still aspire to.

In Benhabib’s (1996) deliberative model of democracy public dialogues result from free and unconstrained deliberation about matters of common interest. According to the deliberative model of democracy:

> The institutions of this polity are so arranged that what is considered in the common interest of all results from processes of collective deliberation conducted rationally and fairly among free and equal individuals. The more collective decision-making processes approximate this model the more [it] increases the presumption of their legitimacy and rationality (Benhabib, 1996, p. 69, addition ours).

Similar to the Peirce notion of community of inquiry, Benhabib’s model seeks to educate citizens by promoting public dialogue among free and equal deliberators. In other words, Philosophy for Children in South Africa can promote the development of democratic citizenship by teaching children to talk, given that talk is fundamental to democratic citizenship. Benhabib’s version of deliberative democracy promises to educate children by: 1) treating all school children as moral and political equals. 2) teaching them practical reasoning; moral equality, freedom and respect among deliberators; 3) learning to speak across the age divide; and 4) building friendship and active, viable communities. Benhabib’s deliberative model of democracy is likely to promote active, critical enquiring children in South Africa. Sadly, post-apartheid education for democratic children, is unlikely to promote the development of democratic citizenship, at least not by means of the ‘tools’ discussed above (the Bill of Responsibilities, the Schools’ Pledge, etc.). If this is correct, what can Philosophy for Children contribute to build, strengthen and consolidate common South African citizenship?
There appears to be a general agreement among scholars in Philosophy for Children that one of the virtues of a community of inquiry as an educational pedagogy, is that, it promotes democratic behaviour in learners, thus it deserves to be considered an adequate form of democratic education (see Sharp, 1994; Lipman, 1998, Splitter, 1997). While the approach has been tried and tested in a number of countries outside Africa, its application remains to be empirically explored in the South African context. Such a strong presupposition deserves our careful evaluation and this is the ultimate purpose of this section. Lipman (1998) and Sharp (1994) contend that building classroom communities of inquiry engages children in an educational process that enhances democratic behaviour and disposition and in the process the community of inquiry becomes a proper model of democratic education in South Africa. Based on the foregoing we propose that the list of values and behaviours below will serve the minimalist conception of the philosophical community of inquiry. But the question is: what can the philosophical community of children as inquirers contribute in fostering democratic principles in the classroom and in South African society at large?

### Values and corresponding behaviours of the community of inquiry

<table>
<thead>
<tr>
<th>Community</th>
<th>Inquiry</th>
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<tr>
<td><strong>Basic values:</strong></td>
<td><strong>Basic values:</strong></td>
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<tr>
<td>Participation</td>
<td>Curiosity</td>
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<td>Respect</td>
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<td>Empathy</td>
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<td>Equality</td>
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<td>Fallibility</td>
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<td><strong>Corresponding behaviours</strong></td>
<td><strong>Corresponding behaviours</strong></td>
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<tr>
<td>Sharing experiences and thoughts</td>
<td>Questioning</td>
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<tr>
<td>Actively listening</td>
<td>Minimising irrational moves</td>
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<tr>
<td>Being civil</td>
<td>Expressing one’s belief and opinions</td>
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<td>Showing support</td>
<td>Being open-minded</td>
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<tr>
<td>Communicating with all participants</td>
<td>Being tolerant</td>
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<tr>
<td>Trusting</td>
<td>Self-correcting</td>
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<td></td>
<td>Striving for clarity</td>
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The above summarises what goes on in an inquiring community especially in a classroom setting. But, how does one get children to participate in classroom communities of enquiry? Within a classroom context, communities of inquiry require that while a teacher is responsible for opening up dialogue among children, every
member of the community has the right to question, to interrogate and to open debate or determine the agenda about matters of common concern. Although the author is not writing about South African schools, Sharp (1994) maintains that “[…] the classroom community of inquiry is an educational means of furthering the sense of community […] a precondition for actively participating in a democratic society” (p. 31). In a community of inquiry, learners are taught to use logic and evidence to produce a rational position, to present their positions to their (presumed equal) peers, to exchange views fruitfully with them, and to come to a considered conclusion as a result of the evaluation of competing propositions.

The table above is designed to show that at the centre of the community of inquiry are values committed to the possibility of discoursive inquiry in which members freely and collectively work together to deliberate on matters that affect them be they social, practical or purely intellectual. Such experiences of participation in classroom communities of enquiry are especially empowering for children, helping them to understand that participation is a worthwhile effort. The deliberation process approved by participatory democracy also prepares a common ground for different individuals with different interests, aptitudes and persuasions, it challenges the world and searches for meaning for the betterment of human life. In both well-established and newly formed democracies, there is a need for children to experience the educational benefits of deliberative democracy as part of democratic citizenship education in South African schools. In those countries facing internal conflict and tensions that threaten democracy, such experiences take on an even greater significance. Children need opportunities to learn what their rights and duties are, how their freedom is limited by the rights and freedoms of others and how their actions can affect the rights of others.

We take a more cautious approach to this assertion although we grant that the classroom community of inquiry is a relatively value-free setting, just like the conception of participatory democracy. The major point of separation between the classroom community of inquiry and participatory democracy is that the former tends to be purely intellectual with nothing in the larger society to act out. Yes the community might deliberate for purposes of conceptual clarification, or for discovering a new perspective, and yes sometimes the inquiry leads to a conclusion about the topic at hand (Lipman, 1991), but, what in practice the discoursive classroom community of inquiry can offer remains an unanswered question and this is yet to be tested in practice.

We agree with Barber (1984) that activism is at the heart of participatory democracy and through it citizens must understand what they want their world to be like so that they can transform it and head towards their ideal world. In a similar vein, we attempt to make the case that through participation in a philosophical community of inquiry, South African children are familiarised with the deliberation process, although we argue that a proactive component needs to be added to it. South African children have to be shown how the process of inquiry should help them to take their places as democratic citizens. While this might sound a big challenge as critical analysis of South African education policy revealed earlier, philosophical community of inquiry
does not expect children to voice their views about how it should be run. On a small scale schools should initiate children in developing the virtues and dispositions of a deliberative democracy that the community of inquiry seeks to attain. Philosophy for Children provides tools to get children/learners to participate, to ‘open’ up, and to assume public and explicit ownership of thoughts, ideas and suggestions. For example the community of philosophical inquiry provides for the inclusivity of all children including the disabled, the hypersensitive and children in difficult situations or those who struggle at school. By allowing children as young citizens in deliberative moves as in a community of inquiry, it is hoped that they will be agents in promoting the growth and development of the young democracy South Africa is.

Conclusion

What are the primary aims of education, and, by implication, education for democratic children? In philosophy of education circles, the institutional, sociological and general enlightenment uses of education are not regarded as incompatible but, rather, as intimately and reciprocally linked. However, from a Philosophy for Children perspective, the primary purpose of education involves the pursuit of general enlightenment, i.e., the development of children, which entails the development of a child’s mind, of rationality or the capacity to think. Philosophy for Children as an educational pedagogy constitutes the potential to educate for citizenship in a democratic society, because through participation in it children found a ‘free space’ that is likely to produce active, informed and critical South Africa citizenry. Unfortunately, the Bill of Responsibilities and the national School Pledge conception of education for democratic children are likely to produce obedient and loyal citizens, not active, critical and inquiring South African citizens. Philosophy for Children as an educational pedagogy seeks to cultivate school children that acknowledge and practice deliberation in South African schools. Only Philosophy for Children through a community of enquiry classroom practice is likely to challenge the Lockean deficit model of childhood, as reflected in post-apartheid citizenship education policy. Philosophy for Children within the framework of modern theories of democracy, and its emphasis on the educative potential of learner participation, is better positioned to foster active, critical and inquiring school children able to build, strengthen and consolidate South Africa’s democracy.

Endnotes

1. According to the South African Constitution (1996, p. 14) a “child means a person under the age of 18 years”. Unsurprisingly, equal citizenship is emphasised, “all citizens [including children] are equally entitled to the rights, privileges and benefits of citizenship; and equally subject to the duties and responsibilities of citizenship” (Republic of South Africa, 1996, p. 3, addition ours). On the educational front, the South African Schools Act (1996) makes provision for compulsory schooling from Grade 1 to 9 (7-15 years) and non-compulsory from Grade 10 to 12 (16-18). The concept ‘child’ in South Africa reflects two distinct uses – child as a bearer of Constitutional status (to enjoy civil and political rights e.g. individual liberties) and child as a recipient/beneficiary of educational practice (to enjoy social rights e.g. doing
philosophy with children in schools and beyond). In this article, we adhere to this usage on the understanding that one could also employ the term ‘child’, to refer to ‘potential citizen’, that is, every child is entitled to education for democratic citizenship in South African schools.

2. The national Schools Pledge is not a new phenomenon in South Africa. The idea of the School Pledge was introduced by the Working Group on Values in Education (2000) as a starting point for a national debate on “the appropriate values South Africa ought to embrace in its primary and secondary educational institutions” (Department of Education, 2000, p. 1). The proposed Pledge did not see the light of day because the prevailing opinion was that it enforced unquestioning obedience and loyalty to the Republic of South Africa. The new national School Pledge was first raised by former President Thabo Mbeki in his State of the Nation Address in February 2008. Mbeki said that the government “should develop an oath that will be recited by all learners in their morning school assemblies” (State of the Nation Address, 08 February 2008). Similar to what undergirded the 2000 version, the national DoE seeks to require all schoolchildren to recite the pledge of allegiance to the Constitution and the Republic of South Africa.

3. The Bill was mainly the work of the National Religious Leaders’ Forum (NRLF), which began drafting it in June 2007. Speaking on behalf of the NRLF, Chief Rabbi Warren Goldstein said the idea behind the Bill was “to nurture a culture of giving, care, compassion, duty and responsibility in our youths” (Mohlala, 2008, p. 4). As a result, a joint initiative between the NRLF and the national Department of Education introduced the Bill of Responsibilities in South African schools with a focus on the 1996 Constitution and Bill of Rights. The assumption from the DoE is that through its curriculum, the Bill will ensure that there is common understanding of the rights and obligations of citizenship in South African schools. In short, the DoE hopes to convey to the youth that they have a responsibility to respect the right to equality, human dignity, life, family or parental care, education, work, freedom and security of the person, property, freedom of religion, belief and opinion, a safe environment, citizenship and freedom of expression. What is interesting for the purpose of this article is the inclusion of ‘right to citizenship’.

4. Inquiry in the context of philosophical community of inquiry has as its basic values curiosity, creativity, reasoning, freedom, pluralism and fallibilism. Curiosity or the sense of wonder initiates inquiry by questioning and dialogue in search of meaning and truth. But as Lipman argues “[…] without creativity there is no source of surprise” (Lipman, 1991, p. 161). Inquiry also involves reasoning by following certain principles and freedom permeates all aspects of inquiry by allowing participants to freely ask questions, stating any objections and imagining all possibilities. Pluralism is a product of freedom of each community participant to develop and express his or her own ideas. Inquiry is a process, which welcomes all these different voices in a community where members are open-minded and tolerant toward what their co-inquirers bring to the table. Philosophical community of inquiry is the kind of philosophy of education that is relevant in South African schools.

References


Abstract
In this article we report on the ‘sense-making’ by children of a ‘scientist’ and ‘science’. We investigated these conceptions through drawings by using the Draw-a-Scientist Test (DAST) developed by Chambers. We conducted the research in two urban schools; a public school located in a low-income previously designated black (African) suburb, and a private school in an affluent suburb. In theorising on the sense making of a ‘scientist’ and ‘science’ by children from these diverse learning contexts, we examined the notion of ‘semiotic mediation’, which is a central idea in Vygotsky’s work. The results of the study show that children in the previously designated black school have little or no conception of science or a scientist. The significance of these findings needs to be considered against the inequities in education, and in particular in science education in this country due to the apartheid system. Despite Grade R being the first year in the twelve-school career of children we believe that the findings of this study do signal that concerted steps need to be taken so that children develop stronger conceptions of science and a scientist.

Keywords: semiotic mediation, sense making, draw-a-scientist test, conception of scientist
Introduction

Over the past 50 years, a growing body of research has emerged on people’s perceptions of science and scientists. Some of this research has focused on children’s perceptions; how they make sense of the world. The implications of this research for science learning are important because of the glimpse it gives of how children view the world and how conceptions can be scripted culturally and educationally in children’s interactions (Gopnik & Meltzhoff, 1997). Some studies have indicated that the perceptions of scientists held by students (or others) are related in some way to their attitudes toward science and science self-efficacy (e.g. Finson, 2000; Finson, Riggs & Jesunathadas, 1999), subsequently affecting their prospects of entering a science-related career (Zeldin & Pajares, 2000). If young children learn to see the world of science (and the work of a scientist) in a stereotypical way, and not related to their world, it may predispose them to a stereotypical view, coupled with a sense of exclusion. Losh, Wilke and Pop (2008) assert that youth become psychologically involved with or disengaged from science long before they enter college or choose careers (p. 775), and so school experiences and particularly early experiences are important in nurturing an interest in science. In the context of this inquiry into the sense making of young children, the way the work of a scientist is encountered semiotically may have some impact on how children learn science in school and also how this may affect not only their achievement in school, but their career options later. Therefore, having some foreknowledge of children’s perceptions of science and scientists is an important aspect of children’s learning that teachers need to know if they are to effectively and positively impact children’s experiences in science. It is also important for researchers, if they are to research science learning effectively. In explicating the sense making of young children of what constitutes a ‘scientist’ and ‘science’ we adopt a sociocultural perspective on learning, because we argue that early conceptions of worlds of knowledge, such as the world of natural science, are mediated interactively, thus socioculturally.

One of the most crucial aspects on which theories of learning differ is how they view the role of the social/cultural milieu in the development of psychological processes (Rogoff, 1990; Roth, 2010; Wertsch, Minick & Arns, 1984). According to neo-Vygotskian researchers such as Wertsch et al. an individualistic perspective on learning views human experience and environmental forces strictly from the position of how they influence the individual’s psychological development (p. 151).

The most known individualistic theory in modern development cognitive psychology is that of Piaget, although his work has been followed by theories that award conceptual development earlier in a child’s development and also not strictly in stages (Carey, 2009). We invoke the work of Piaget, however, because of how he examined social activity solely; from the perspective of how it influences the individual’s development and how disequilibrium and perturbation, two of the concepts in his theory of cognitive development, have social origins. A sociocultural view of learning
stands in contrast to such a strict constructivist position and according to John-Steiner and Mahn (1996) Vygotsky’s work with his collaborators in Russia in the 1920s and 1930s still contain the essence of a sociocultural view on learning and development. One of his two main (completed) works (Vygotsky, 1978) explains the human ‘mind in society’. The social/cultural context and history of individual cognitive activity are the roots of the ‘semiotic mediation’ that undergirds learning. Vygotsky proposes that...

The very nature of tools and practices are the semiotic medium that consistently interfaces children’s learning. Their interaction with more experienced members of society and with their peers facilitates the interface, as do texts and other tools and signs. The signs of, for example, the work of science and the image of scientists, mediate young children’s development of a conception of what a scientist is (and therefore also what science constitutes in society). Within the context of our study, the sense making of young children with regard to what constitutes a ‘scientist’ and ‘science’ would thus be mediated through the social/cultural activities of the social/cultural grouping in which a child first learns about science and scientists. On this view of learning and conceptual development learning is therefore also a form of enculturation, which occurs through adopting the cultural practices of a social group situated in its distinct culture. While much of the research in helping us understand how children come to know the world has been underpinned by Piagetian and post-Piagetian theorising, Robbins (2007) points out that there are challenges made concerning the ideas of the universality of childhood upon which many of these studies are founded (p. 46) as the complex, dynamic and contextualised nature of thinking cannot be explained. In investigating the sense making of a ‘scientist’ and ‘science’ by children from diverse learning contexts we therefore considered it more appropriate to adopt a sociocultural perspective on learning, while not negating other views, such as those proposed by Carey (2009).

We wanted to find out how children in their first year of school view “the work of a scientist”, not because of the image itself, but what it would signify in terms of the children’s conceptions and sociocultural exposure to the notion of ‘a scientist’. We conducted the research in two urban schools; a public school located in a low income previously designated black (African) suburb, and a private school in an affluent suburb. The public school is only populated by black children, and the private school was racially mixed. Although much research has been conducted worldwide with learners of different ages, race and ethnicity on their images of science and scientists, no such research has been done in South Africa. We consider this study of particular significance for this country in view of a thrust in government education policy for the improvement in the quality of school science for all learners, so that they may pursue tertiary studies in science, and thereby follow career paths in science.
In our investigation we started off by asking the following research questions:

1. What images do Grade R children in a previously designated black public school and a private school have of science and scientists?

2. Are there patterns in the images of science and scientists portrayed by these children?

In theorising on the sense making of a ‘scientist’ and ‘science’ by children from these diverse learning contexts, we examined the notion of ‘semiotic mediation’, which is a central idea in Vygotsky’s work (Wertsch, 1990). For Vygotsky, semiotic mediation is the key to the appropriation of knowledge by the developing individual. Mediation takes place by way of semiotic mechanisms (tools and signs), which mediate social and individual functioning and connect the external and the internal, the social and the individual (Wertsch & Stone, 1985; Hardman, 2010). In its Vygotskian sense, mediation involves the use of culturally-derived psychological tools, such as utterances in spoken or sign language, in transforming the relations between psychological inputs and outputs (Fernyhough, 2008, p. 6).

Semiotic mediation thus occurs wherever discourse occurs, and that discourse is ubiquitous in the living of social life, enabling children to internalise the world they experience in the living of their life (Hasan & Cloran, 1990). Vygotsky (1981) listed a number of examples of semiotic means:

- language;
- various systems of counting;
- mnemonic techniques;
- algebraic symbol systems;
- works of art;
- writing;
- schemes;
- diagrams;
- maps and mechanical drawings;
- all sorts of conventional signs and so on (p. 137).

He argues for the central role of language in learning by maintaining that it mediates the communication through which thinking with others is made possible (Wells, 2007). According to Hasan (2002)

- in the Vygotskian oeuvre, the phrase ‘semiotic mediation’ has come to stand for ‘mediation by means of the linguistic sign’ (p. 1).

Halliday (1993) a sociolinguist, describes language as semiotic tool in learning:

- When children learn language, they are not simply engaging in one type of learning among many; rather, they are learning the foundations of learning itself. The distinctive characteristic of human learning is that it is a process of making meaning; a semiotic process; and the prototypical form of human semiotic is language. Hence the ontogenesis of language is at the same time the ontogenesis of learning (p. 93).

Hasan further explains the notion of semiotic mediation by invoking insights from systemic functional linguistics. She point out that the noun/gerund ‘mediation’ is derived from the verb ‘mediate’, which refers to a process with a complex semantic structure involving participants and circumstances that are potentially relevant to this process. The participants include someone who mediates, i.e., a mediator (the subject performing an action of mediation); something that is mediated (through the sign or tool); and someone who is the object of mediation, i.e. the ‘mediatee’. The circumstances for mediation refer to the means of mediation, i.e. the modality and the location in which mediation takes place. Teachers can be viewed as subjects; books,
texts, language and images can be viewed as mediating signs and tools; learning children can be viewed as objects of the action in the semiotic mediating activity.

The meanings of words as signs and of other signs as well do not remain constant for individual persons, but develop as they are encountered in new contexts of activity and as connections of various kinds are established with other meanings. This is an ongoing process of conceptual development (Vygotsky, 1987). Vygotsky makes a distinction between ‘meaning’ and ‘sense’, during conceptual development (Wells, 2007). ‘Meaning’ is relatively stable corresponds with the definition of lexical items as they are found in dictionaries, while ‘sense’ is a dynamic, fluid and complex formation that is significant for the user of the word. In our inquiry the notion of ‘sense’ is thus the focus. On this view we investigated the ‘sense making’ rather than ‘meaning making’ by children of a ‘scientist’ and ‘science’. We wanted to gain some insight into their conceptual development as captured in their expression of the idea of ‘scientist’ and of ‘science’.

**The Draw-a-Scientist Test (DAST)**

In this study the ‘sense making’ by children of a ‘scientist’ and ‘science’ is investigated through their drawings. Although language was the primary semiotic means on which Vygotsky focused much of his studies, he did consider drawings as one of the other means by which children ‘talk’ about their world, both to themselves and to others (Lindquist, 2001). In fact, Dyson (1982) cited by Ring (2001) draws attention to Vygotsky’s description of drawing as a kind of ‘graphic speech’. In exploring the young child’s drawing from a socio-cultural perspective, we can gain some insight into the influence of the views and beliefs of older and more significant others at home and at school settings (Brooks, 2009). Toku (2000) says that although in the early years of childhood children show similar patterns in their drawings, they

show another important characteristic in their drawings; cultural specificity when they reach certain ages (p. 1).

This is also the perspective from where we conducted the study, trying to understand how two groups of Grade R children from two very different contexts make sense of ‘science’ and a ‘scientist’.

The instrument we used was designed by David Wade Chambers (1983). It has been used with people of all ages, from pre-school children to adults. Chambers developed the Draw-a-Scientist-Test (DAST) 30 years ago, and he patterned it after Goodenough’s Draw-a-Man Test (Finson, 2002). He had young children draw a scientist on a blank sheet of paper, and they then described the images of a scientist reflected in the drawing, which served as focal point and made the notion of ‘a scientist’ less abstract. This enabled him to derive some information on the perception of a scientist from young children up to Grade 5. We consider this test appropriate for the age group of children who formed the focus of this study, as young children have limited language skills to either write or speak about their conceptions of science and scientists, unless they have lived in an environment where this is part of the home or the pre-school
discourse. Furthermore, Kahle (1993) cited by She (1995) has commented that since DAST does not require reading or writing skills, it minimises the possibility of ‘socially desirable’ responses that have been scripted into their vocabulary, although drawings are also inscribed by different examples and models of drawings that children encounter.

Chambers (1983) identified attributes or elements that consistently appeared in drawings of scientists, for example a lab coat (usually white), eyeglasses, scientific instruments and products of technology such as rockets. From these indicators, Chambers was able to show that views of scientists varied by age and grade level, and that children began to develop stereotypical views of scientists from a very early age. Finson, Beaver and Cramond (1995) developed further the Chamber’s DAST by incorporating additional stereotypical images such as gender and age in a Draw-a-Scientist Test Checklist (DAST-C). We expected some variance in the two groups of children that we studied and it turned out that it was a credible expectation.

Method

The DAST was administered to Grade R children in a public school in Soweto and in a private school in Pretoria. The schools were demographically different with the Soweto school (School A) located in a low-income and previously racially segregated community, and the private school (School B) in an upper/middle-income community. The children in School A speak isiZulu and Sesotho as first languages. There were 34 isiZulu and 46 Sesotho speakers who were placed in separate classes, with each class being taught by a teacher in the respective first language. The 46 Grade R children in School B were taught in the medium of English, for whom this was also their home language in the majority of cases.

The DAST was administered by the class teacher, who asked the children, working separately, to “Draw a picture of a person doing science”. This instruction was translated into isiZulu and Sesotho for students at School A. This translation was done by one of the authors of this paper and validated by a professor of African languages.

The following instruction was given to the children:

isiZulu: Ake udwebe isithombe somuntu owenza isayensi.
Sesotho: Swantsha setshwantsho sa motho a etsa saene.

The children were presented with a set of coloured crayons and a sheet of paper. The time for children to complete the drawing was not stipulated, but all children managed to do the drawing within half an hour. Some children inquired as to what they should draw; and they were assured that whatever they drew would be fine. This was a common question as evidenced in other studies (Finson, 2002; Monhardt, 2003).

Based on the DAST-C (Finson et al., 1995), the following were chosen as indicators of the standard, conventional image of a scientist:

1. Lab coat (usually but not necessarily white)
2. Eyeglasses
3. Facial hair (beard, moustache, abnormally long sideburns)
4. Symbols of research (scientific instruments, lab equipment of any kind)
5. Types of scientific instruments/equipment – Symbols of knowledge (books, filing cabinets, clipboards, pens in pockets, and so on)
6. Technology (the ‘products’ of science) – Types of technology (televisions, telephones, missiles, computers, and so on)
7. Relevant captions (formulae, taxonomic classification, the ‘eureka!’ syndrome)
8. Male gender only
9. White only
10. Indications on danger
11. Presence of light bulbs
12. Mythic stereotypes
13. Indications of secrecy
14. Scientists doing work indoors
15. Middle-aged or elderly scientist

After having completed the drawing each child was interviewed and asked to talk about their artefact. In cases where the drawing of the image was not distinct, the children were asked to explain what they had drawn and what specific parts of the image represented for them. These follow-up interviews were deemed to be essential in order to get valid results, and this was also signalled in a study by Monhardt (2003). We had Piaget’s clinical interviews in the back of our minds when we conducted the interviews, although there was no real protocol.

Each drawing was then analysed for the presence of indicators listed from the DAST-C. In accordance with the analysis of other similar research where the DAST-C test was administered, each indicator was marked only once, even if multiple counts of the same indicator were present in the drawing. All counts were then tallied and recorded on a frequency table.

Results: about ‘complexes’ and ‘pre-concepts’

The mean indicator of the standard image of a scientist for the School A and School B children were 1.46 and 2.70 respectively (Table 1).
### Table 1: Frequency of drawn indicators

<table>
<thead>
<tr>
<th></th>
<th>Number of children</th>
<th>Number of children</th>
<th>Mean indicators per child</th>
</tr>
</thead>
<tbody>
<tr>
<td>School A</td>
<td>80</td>
<td>117</td>
<td>1.46</td>
</tr>
<tr>
<td>School B</td>
<td>46</td>
<td>124</td>
<td>2.70</td>
</tr>
</tbody>
</table>

The results show that 58.75% of School A children drew 0 or 1 indicators, and that 52.16% of School B children drew 3 or more indicators (Table 2).

### Table 2: Distribution of indicator scores by school type

<table>
<thead>
<tr>
<th>School type</th>
<th>Indicator score</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>School A</td>
<td></td>
<td>16</td>
<td>31</td>
<td>22</td>
<td>10</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>20.00</td>
<td>38.75</td>
<td>27.50</td>
<td>10.50</td>
<td>3.75</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>School B</td>
<td></td>
<td>4</td>
<td>10</td>
<td>8</td>
<td>10</td>
<td>6</td>
<td>5</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>8.70</td>
<td>21.74</td>
<td>17.39</td>
<td>21.74</td>
<td>13.04</td>
<td>10.87</td>
<td>4.34</td>
<td>2.17</td>
</tr>
</tbody>
</table>

Furthermore, the chi-square test showed an association between the school type and indicator scores less than three and greater than or equal to three ($\chi^2 = 27.73$) with children at School B more likely to draw three or more indicators than children at School A. It is therefore evident that children at School A have a much weaker conception of a scientist than children at the School B. The mean indicator scores per child for each category showed that School A children scored lower than the children in the School B in 9 of the 10 categories where indicators were registered (Table 3). School A learners only scored higher in the middle-aged or elderly person category. In Vygotskian parlance the children in School A had not developed conventional ideas and were expressing notions that can be described as ‘complexes’ (Vygotsky, 1987, p. 137). The chi-square test also showed an association between the school type and the indicators, symbols of research ($\chi^2 = 18.48$) and technology ($\chi^2 = 8.24$) with children at School B more likely to draw these indicators than children at the School A. These children thus encountered images or ideas of the type of person a scientist is and this can be described as ‘pre-concepts’.

### Table 3: Frequency and mean indicator scores

<table>
<thead>
<tr>
<th>Indicator</th>
<th>School A (N = 80)</th>
<th>School B (N = 46)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Mean indicator score per child</td>
</tr>
<tr>
<td>Lab coat</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Eyeglasses</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Facial hair</td>
<td>0</td>
<td>0.00</td>
</tr>
</tbody>
</table>
The most commonly prevalent indicators of a scientist were symbols of research, technology, male gender, white race and the scientist working indoors. We will now describe some of the features that were evident in these indicators.

The common ‘symbols of research’ depicted in the drawings of the children who we would categorise as holders of ‘pre-concepts’ were test tubes and flasks, containing colourful liquids. When questioned on these symbols at the interview, children indicated they had seen such symbols on children’s television programmes such as *Takhalane sesame* and *Thabang*. Only two children from School A reflected these symbols in their drawings.

In representing ‘technology’, children mainly drew laptops and rockets. The interviews revealed again that a probable source of these indicators was the image of science that was portrayed on television. However, two children both from School B in explaining why they had drawn the laptop alluded to the presence of the laptop at home and they believed this must have something to do with science. The following excerpt from the interviews attest to this:

The laptop on the table is the one like the one my sister uses. She does science.

It shows science working because of the importance. We have it in our home. I can also use it for stuff like animals.

No children from School A drew a laptop.
The indicator ‘middle-aged or elderly’ scored relatively high in the drawings of children from both schools. However, this finding needs to be interpreted with caution, as an indicator of a standard image of a scientist. The interviewed enabled us to shed more light upon these drawings. When interviewed on the drawing we established that in most instances the figures drawn did not in fact refer to a scientist but a member of the learner’s family. The following excerpts from the interview illustrated this:

- My father is collecting cattle from the drinking place.
- This is my mother wearing a dress and high-heeled shoes.
- My mother is asking her friend for directions.

We therefore infer that although a significant number of drawings of children from the School A reflected this indicator, this cannot be taken as evidence of their image of science and a scientist. It was merely a person whom they drew in order to draw as required.

For children at School B the situation was different as these two indicators appeared to be used in conjunction with other indicators. For example, where a child drew an elderly person, they showed the person engaged in a science activity such as building a rocket.

Another indicator which scored comparatively higher than others was ‘male gender only’. We investigated the possibility that the gender of the children may have been a factor in the gender depiction of the person being drawn by doing a chi-square test. The result showed that there was a significant association between the gender of the child and that of the person drawn ($\chi^2 = 93.77$). Overwhelmingly, children had a figure of the same gender as their own. In fact there were only seven cases where a child had drawn a person of a different gender as their own. It is therefore questionable the extent to which this indicator can be considered to describe the learners’ image of a scientist. The interview responses appeared to support this assertion, as children indicated a preference to depict their own gender in the drawings. The following responses indicate this when children were questioned on it:

- I showed the person like me. He is me doing science.
- I drew it to show me with the rocket. I want to make a rocket.

A similar argument can be advanced for the children’s choice of race in their drawings as only 18 children of the 146 who participated in this study showed the race of the scientist to be different from their own race. This finding is substantiated by Dickson, Saylor and Finch (1990) cited by Finson (2002) who observed that people normally draw an image of their same sex when asked to draw a person, regardless of personality measures and family composition.

A sizeable number of children represented the ‘scientist working indoors’. Table 3 shows that 24 School A children and 18 School A children showed the scientist working indoors. To a certain extent this finding correlates with other studies, which have overwhelmingly shown that children of all ages portray scientists doing work indoors.
Discussion

The results of the study show that children in the previously designated black school have little or no conception of science or a scientist. The analysis of drawings revealed little or no evidence of indicators such as a ‘laboratory coat’, ‘symbols of research’, ‘technology’ and ‘symbols of knowledge’. The drawings by children from the private school showed a stronger conception of science and a scientist, as evidenced by the significantly higher mean indicator score per learner. With regard to the race and gender indicators, statistical analysis showed that there was an association between the race and gender identity of the child and the race and gender of the person depicted in the drawing. It is difficult to interpret this finding. On the one hand it is encouraging that the drawings by black and female children depicted images of their race and gender, as blacks and females have been traditionally underrepresented in science careers. However, as already mentioned the validity of this finding needs be explored as other studies have indicated that people tend to draw images of their own race.

As pointed our earlier apart from investigating the conception of a ‘scientist’ by children from diverse learning contexts, we wanted to know what this signifies in terms of the children’s formation of this conception from a sociocultural perspective. We now explain the different results for the two groups of children by invoking the notion of semiotic mediation explained earlier. We have already referred to language as an important semiotic tool in learning, and we contend here that the vastly different sense-making of a ‘scientist’ and ‘science’ by children at the two schools may be attributed to the extent to which they have encountered these words within a particular social/cultural grouping. All the children at the Soweto school had either isiZulu or Sesotho as their home language, and the teaching and learning at the school took place in these languages. The word ‘scientist’ is therefore unfamiliar to them. We decided to translate the instruction “Draw a picture of a person doing science” into their respective home language. Despite this translation that was validated by a professor of African languages it is possible this translation was not appropriate to the language level of the children. This language difficulty with this term also became apparent from the interviews when children were asked in their home language what science was. They often responded with a blank expression without any plausible explanation. This was in contrast to children in the private school who readily responded to this same question by detailing relevant information on the subject. It is conceivable that children at both schools would have little exposure to science in their classroom instruction as the Grade R curriculum does not formalise the teaching and learning of science. In the South African curriculum, Natural Sciences as a learning area is only introduced from Grade 4 onwards. Consequently, children attending the township school would have not acquired the requisite vocabulary on concepts of ‘science’ and ‘scientist’.

Another factor in the sense making of a ‘scientist’ and ‘science’ by the children is the status attributed to ‘science’ and ‘scientist’ by the community in which the school is situated. Lewin and Naidoo (1998) suggest that the negative experiences of black
students at studying science in the apartheid years, many of who are parents of the present generation of students may have resulted in deep-seated attitudes towards science. If this is the case it is possible that children from the Soweto school (objects within a semiotic mediating activity) would have had only limited exposure to these conceptions through their interactions with elders (subjects) in their community. Furthermore, it is conceivable that these children would not in their lives have had access to mediating tools such as science books and magazines. Although we will not attempt to explain our findings with reference to social class, it is worth mentioning that cultural studies in other countries such as in the United States of America (Atwater, 2000; Zuniga, Olsen & Winter, 2005) point to social class as an important variable on importance attached to science education by sociocultural communities.

The significance of these findings needs to be considered against the inequities in education, and in particular in science education in this country due to the apartheid system. The economic development of South Africa depends upon a strong emphasis being placed on human resources in the fields of science and technology (Lewin, 1995). Historically, the proportion of people pursuing careers in science and technology has been small. This can be largely ascribed to the apartheid policies of the country, which sidelined black learners in the study of science at school. The Department of National Education’s White Paper 1 on Education and Training (1994) provided a framework for the transformation of the education system. The main thrust for science education in this document is the improvement in the quality of school science for all students, especially black students so that they may pursue tertiary studies in science, and thereby follow career paths in science. As noted earlier children develop images of science and scientists from a young age, and these images do influence their attitude towards the subject. It is therefore a cause for concern that this study has revealed that Grade R children in a previously designated black suburb have little or no conception of science and a scientist.

Despite Grade R being the first year in the twelve-school career of children we believe that the findings of this study do signal that concerted steps need to be taken so that children develop stronger conceptions of science and a scientist. Although the Grade R curriculum does not making explicit reference to the teaching and learning of science, teachers need to explore other learning areas so that opportunity may be created for learners to develop images of science. For example, a goal of the Languages Learning Area is that it “develops the critical tools necessary to become responsible citizens” (Department of Education, 2002, p. 19). This particular goal can be pursued by engaging learners in an activity for example where they are asked to express their opinion on a science-related issue impacting upon society. Role models are also important in encouraging students in science and dispelling stereotypes students may hold about the race and gender of scientists.
References


The endangered subject of quality Visual Art education

Abstract
Quality and meaningful Visual Art education provides opportunities for learning and holistic development to all children at school. Research projects in this regard highlight the problems that teachers experience in this field. The contribution of higher education in the training of educators to provide for teachers in Visual Art education is important. Curricula of four local and one overseas university for the BEd training in the Arts are compared and discussed. The importance of literacy and numeracy at school level is not disregarded, but the fact that visual literacy is an important part of being literate is emphasised. The current shortage of well-trained Visual Art educators is a challenge. Overcoming this challenge will provide all members of future generations in schools with the learning opportunities that are available through quality Visual Art education. The impact of several reviews of the South African Educational system and the effect thereof on Visual Art education are discussed.

Keywords: quality Visual Art, learning opportunities, teacher training, primary education, curricula, visual literacy, case study research, educational change, curriculum review
Introduction

Quality and meaningful Visual Arts education provides numerous opportunities for learning and holistic development to all children at school. It is an important tool for rich and varied learning. In many schools the teaching of Visual Art poses problems and challenges to teachers.

The impact of three reviews during the past decade of the curriculum for South African schools by the Department of Education (DoE) has placed pressure on the quality of Visual Arts education. Higher Education Institutions (HEIs) are to provide for the training of Visual Arts teachers to teach quality Art education to all learners in schools.

Background

With a new government ruling since 1994 a new National Curriculum (C2005) replaced the former curriculum rooted in Outcomes Based Education (OBE). It soon became clear that this curriculum was unsuccessful and it was reviewed by a task team appointed by the minister of education. A revised curriculum called the Revised National Curriculum Statement (RNCS) was adopted in schools in 2002. As part of this curriculum Visual Art was grouped under the learning area Arts and Culture. Arts and Culture was one of eight learning areas forming the compulsory programmes in the General Education and Training Band (primary schooling).

A new minister of education announced in 2008 in parliament that C2005 had to be reviewed again as poor school exit level results and outcomes of several research projects revealed dismal performance in literacy and numeracy of children in South African schools.

A task team conducted the review and tabled a report in 2009. A new National Curriculum was drafted in September 2010, to be implemented and phased-in from 2012 onwards. Teachers in South African schools are facing the third curriculum review in one decade.

C2005 and Art education in the primary school

Approximately 80% of teachers currently in practice in South African schools did not have formal training in OBE. Teachers already in the field at the inception of C2005 were retrained during school holidays to enable them to follow the new curriculum. It was widely expressed that the short training sessions offered during school holidays were not adequate (Rademeyer, 2009, p. 8).

For the Intermediate Phase (Grades 4-6) the one-week of compulsory training in OBE was offered to teachers prior to the introduction and implementation of the new curriculum. The first half of this training was dedicated to the principles of OBE, and the second half of the week was learning area specific. Generalist teachers in the primary school had to choose which learning area training sessions they would attend.
Teachers who selected to receive training in the Arts and Culture learning area were not necessarily the teachers who eventually taught the integrated four disciplines, namely Dance, Drama, Music and Visual Art as this learning area was generally bestowed on teachers not for their interest, skill or expertise, but for their free periods on the timetables. Launched in April 1997, C2005, instead of heralding a brighter educational future for all, brought educators into a quagmire of poorly understood curricular dreams and promises that were almost impossible to fulfil in a regular classroom (Johnson, 2007, p. 2).

Although huge amounts of money had been spent on implementing the then new curriculum, school visits have indicated that lesson planning was superficial, and because teachers did not have subject discipline knowledge, they were not able to make assessment judgments (Western Cape Education Department: Tradeworld reference Ed 15236). In many of the so-called under-achieving schools identified by the Western Cape Education Department Arts and Culture was not offered at all.

Several projects have been offered by various non-government organisations and by the Western Cape Education Department Directorate for Curriculum Development, for in-service training in Arts and Culture, especially with regards to the ‘specific pathways’ for the Senior Phase (Grades 7-9) and ‘focus schools’ for Arts and Culture. These were presented as workshops and planning sessions. Unfortunately, several of these projects were not accessible for all educators, while a number of teachers, who have attended, reported that their teaching of Arts and Culture hardly improved through attendance of the workshops (Johnson, 2007, p. 5).

During 2008 available funding was implemented by the Western Cape Education Department to improve the quality of Arts education for under-achieving schools in the rural areas by offering skills building workshops (Western Cape Education Department: Tradeworld Reference ED 15236). The main need in the Intermediate Phase learning area, Arts and Culture, was the training of teachers to implement the curriculum. The vast majority of teachers did not have a background in the Arts, whereas some may have background or talent in only one of the four Art forms, namely Dance, Drama, Music or Visual Art.

Whenever there is change, there seems to be uncertainty. There are similarities in the uncertainties that are presently experienced in Arts education in South Africa, the UK, Australia and the USA. Various publications address concerns amongst Arts educators pertaining to good practice after a curriculum review. Uncertainty leads to problems amongst practitioners. General problems that are reported are the lack of specialised teachers and funds, and a lack of vision and knowledge of the educational potential of the Arts. Teachers in the UK comment on their vulnerability in teaching Art and the little time allocated to Art teaching, leading to slow development in the expressive subjects (Jolley et al., 2004, p. 562). Snow et al. (2005, p. 18) explore the lack of an intellectual framework for teachers and administrators in the USA to explain the importance of the subject. In addition, there is a lack of confidence that teachers experience in teaching the subject. Low teaching morale, financial cutbacks and over-
sized groups with little resources are problems that are experienced in schools in Australia (Wright, 2003, p. 29). Educators have much to learn in presenting Art and its cultural diversity. Advisory materials are often limited, especially for non-Western modes of analysis. The real world of Art and Visual culture is about challenging and questioning and it often runs against the grain of generalist teachers. Arts educators have much to learn in terms of how they present Art, and its cultural diversity, to their pupils and students (Hatton, 2003, p. 362, 367).

A case study research project was conducted in the Western Cape during 2006. The purpose of the study was to investigate how and if Visual Art offered opportunities for learning in the primary schools selected for the case studies.

Case study research

During 2006, case studies were conducted in schools in the Western Cape Province to investigate the facilitation of learning opportunities through Visual Art.

The methodology for this study suggested a purposive sampling of quality rich cases. Four schools were selected after consultation with the subject advisor for Arts and Culture at the Educational Management District Council for the Wine land region, as well as adjudicators for the children’s Art section of the Tygerberg Eisteddfod. Close proximity to the Wellington Campus was a consideration for selection.

The findings after the case study visits can be briefly summed up as follows:

Three of the four cases visited

Experienced, specialist-trained Arts educators were employed to teach Visual Art. In one case there were two Visual Arts educators, one for Foundation Phase and the other for Intermediate/Senior Phase. Every learner in these three cases participated in Visual Art activities for two periods (one hour), per cycle. Learners could participate in extra-curricular Visual Arts programmes after school hours as well.

The evidence documented for these three cases provided evidence of a rich variety of learning opportunities: Multi-literacy was addressed, visual learning occurred, and aural learning was evident. The introduction of every new project started with an explanation and sometimes the demonstration of a technique, thus combining the visual and the aural. Several projects provided kinaesthetic experiences due to the variety of media. Although the majority of the work in these cases dealt with the creation of artwork, visual literacy was addressed by the fact that, apart from the practical work, Art appreciation was done in the form of assignments and there was some evidence of work in reflection and appreciation. Intra-personal, interpersonal and spiritual intelligences were shaped by the experiences. Mathematical intelligence was utilised.

The different ways in which children learn was observed. All of the projects allowed for individual thinking patterns. The logical-mathematical, interpersonal, intra-personal
and naturalistic, as well as spatial intelligences benefitted from these experiences and individual learning styles were encouraged.

In the three cases mentioned above, the National Curriculum Statement for C2005 was used as a guideline only. The Art forms (Drama, Dance, Music and Visual Art) were offered discreetly, not integrated, with evidence of Visual Art and Music on the timetable. Visual Art projects were linked with general class work as far as the topics concerned.

No prescriptive manuals or publications were used, as the educators were confident and experienced in their field of teaching. The teachers were comfortable and co-operative with the researcher in their classrooms.

The other case

The teachers were responsible for the Arts and Culture of their own class. They were all generalist teachers, with no specialist training. Although there was an Art room at the school, Art lessons were conducted in their own classrooms, thus not using that facility. The timetable allowed for two separate Arts and Culture periods (35 minutes each) a week for all classes. Some teachers were uncomfortable with the researcher in their classrooms, and in one instance refused to accommodate the researcher although prior arrangements were made. Case study visits had to be cancelled twice because teachers were using the Arts and Culture periods to catch up on other work. During the lessons visited, no attention was given to shape, size, colours, line, composition and the other elements of Art. No appreciation or study of aesthetics was done in this case.

From this evidence it could be concluded that the richest variety of learning opportunities through Visual Art occurred in cases where Arts educators were well qualified, confident and specialists in their field. In these cases Visual Art was taught in the traditional way under the guise that the National Curriculum Statement (NCS) was followed.

In the cases where generalist class teachers who have been re-trained during the sessions offered by the Western Cape Education Department were responsible for the teaching of Visual Art, the opportunities for learning were not rich and varied, and in fact, seldom facilitated (Westraadt, 2007, p. 104).

More studies that focussed on the teachers in primary schools and their experience of the teaching of Visual Art as part of the learning area Arts and Culture were conducted and are discussed briefly in the following section.

Studies taking the situation of teachers in schools in account

In a study undertaken by Ms Sandy Johnson, senior lecturer in Arts education at Cape Peninsula University of Technology, the implementation of the Arts and Culture policy document in primary schools in the Cape Peninsula was investigated. Findings of questionnaires were coded and analysed, and then this information was used to devise an open-ended interview with four teachers who were specifically selected...
for their difference in educational sites, undergraduate training and their experience. They were asked to give a narrative account of their teaching duties, the way in which they have implemented the Arts and Culture curriculum, and their responses to this new curriculum.

Although the majority of the respondents stated that their schools taught Arts and Culture according to policy, further investigation revealed that not all of these teachers had read the documents, and that a large majority of those who claimed to have read the documents could not understand them. They were, thus, only partly able to implement them. Almost all needed assistance with understanding and implementing the principles of integration. In the Arts and Culture learning area, where children should be taught to think, to problem-solve, to value and to create, they were limited by the technical rationality of their educators. There was often a tired educator, trained to be a generalist, and battling to cope, with only two hours a week allocated for the four disciplines of the Arts and Culture curriculum. On top of that there were also the other seven learning areas, which had to be dealt with (Johnson, 2007, p. 6).

**Curriculum review 2009**

The problems that are experienced in the teaching of Arts and Culture can be applied generally to the other learning areas as well. These problems were evident when The South African Consortium for Monitoring Educational Quality conducted the “Third International Mathematics and Science Study”, testing more than 500 000 learners in 45 countries in Mathematics and Science. South African learners had the lowest average scores of any country on the continent. A “Progress in Reading Literacy Study” as well as “Monitoring Learning Achievement” carried out with Grade 4-learners in 400 primary schools in 18 African countries proved that South African learners proved to be amongst the lowest scoring in the world (Education Handbook, 2009, p. 90-91). The abovementioned tests were done in 2003, 2004, 2006 and 2008. Although there was a slight improvement, South African schools were still underperforming in literacy and mathematics when compared to other nations (Bloch, 2009, p. 66). When Parliament opened in 2009 the new minister of basic education announced that a task team had been appointed to investigate the situation in schools pertaining to the teaching of the school curriculum.

Everybody involved with education in South Africa expected a review of the curriculum in schools. The task team that was appointed by the minister of basic education investigated the nature of the challenges and problems experienced in the implementation of C2005. The panel reviewed documents and conducted interviews with teachers and unions from all nine provinces. A report from the task team was tabled in October 2009. In this report changes were recommended. These changes were widely communicated and are to be implemented within a five-year plan in three phases from 2011 to 2014. The ultimate goal of the review is to improve teaching and learning, to relieve teachers of the administrative burden of the present system and to
consolidate the curriculum into a set of coherent documents per subject (Final Report, 2009, p. 16, 27).

**Curriculum review and Arts education**

Curriculum 2005 (C2005) was launched in March 1997 and implemented in phases per grades from 1998. This curriculum was reviewed in 2000 and replaced by the Revised National Curriculum Statement (RNCS) in 2002. According to the revised curriculum, Arts and Culture were to be one of eight compulsory learning areas from Grade R-9. Arts and Culture include Dance, Drama, Music and Visual Art, as well as comprehensive knowledge of the diverse cultures of South Africa.

The RNCS for C2005 offered opportunity for learning through the Arts and about the Arts. Practical work, as well as appreciation (reflecting) and visual literacy were possible through the learning outcomes. Art forms of various cultures were to be studied (Western Cape Provincial Arts and Culture Task Group, 1995, p. 9-11). During the initial planning by the Western Cape Provincial Arts and Culture Task Group, Gardner’s (1983) theory of multiple intelligences, which makes provision for multiple ways of learning and knowledge acquisition, was a source. The kind of learner that was envisaged was one with values, a lifelong learner who would be confident, independent, literate, numerate, multi-skilled and compassionate, with respect for the environment and the ability to participate in society (RCNS, 2002, p. 3). The studies that were conducted at schools proved that this ideal was only achieved in isolated cases.

The final report presented by the review task team in October 2009 proposed major changes with regards to Arts and Culture. In the Foundation Phase the subject Arts and Crafts replaces the naming of the learning area Arts and Culture. This subject forms part of the learning programme, General Studies, and is allocated two hours teaching time per week. In the Intermediate Phase Arts and Culture is replaced with Creative Art, forming part of General Studies and allocated two hours per week teaching time. It is also suggested that the generic integrated attempts of the current curriculum should be replaced by more distinct focus on Drama, Dance, Music and Visual Art (Final Report, 2009, p. 42-44). The report suggests that outcomes should be replaced with content, concepts and skills that are most appropriate to learning at different levels.

It is a relief to everybody involved with Arts education that our subjects are still there, because the entire review process propagates an emphasis on literacy, especially in English and Numeracy. At present bursaries awarded by the Department of Education (DoE) for teacher training are only awarded to students that choose Mathematics, Science and Technology as majors. The fear is that the Arts are often considered as an optional extra, regardless of the rich possibility for learning and acquisition of knowledge that is possible through the Arts (Rademaker, 2003, p. 17).

In his book, *The Arts and the creation of Mind*, Elliot Eisner writes about the Arts as a rich opportunity for learning. He describes a wide variety of possibilities for the practise and development of imagination. The total person, including intelligence,
memory, skills and emotions can develop through Art-making. Few subjects can duplicate these experiences. The knowledge and ways of thinking that are cultivated through Arts education is seldom attained through other learning experiences. It leads to innovation and originality, which can be transferred and applied to other subjects (Eisner, 2002, p. 50). Ms M. le Roux, director for audience training at Artscape Cape Town writes about the importance of the Arts as a vehicle to transport knowledge in other subjects, in order to make knowledge more accessible and enjoyable for learners (Le Roux, 2007, p. 1).

Long ago, educators such as Dewey, Read and Lowelfeld wrote about the potential for learning that is possible through quality Visual Arts education. Hargreaves, Greene, Wright, Eisner and others, have elaborated on the undebatable learning that can occur in and through the Arts. This learning is manifested by the total development of the child (Westraadt, 2006, p. 5-8). Quality Visual Arts education provides opportunities for problem solving through experimentation and discovery, which opens unique channels for learning (Wright, 2003, p. 279). Cognitive skills that can be developed through rich and varied Arts education are organisation, problem solving, sequencing, ordering and sorting, critical analysis, planning, prediction, estimation, memory development, humour, concentration, decision making, flexibility, inventive thinking and imagination (Kear and Callaway, 2000, p. 142). Hickman, (2000, p. 147) writes about diverse forms of knowing which can include the aesthetic, scientific, interpersonal, formal and practical. These ways of knowing and learning that are possible through Visual Arts education activates the senses, intellect and emotions. It is often non-verbal and difficult to measure using conventional instruments or tests.

Human intelligence is multi-faceted and there are individual variations in learning. Arts education provides for visual, auditory, kinaesthetic, verbal and enactive modes of comprehension and can lead to higher levels of literacy (Robinson, 1993, p. 25). Visual thinking bridges the two hemispheres of the brain. Modern learners are absorbed by information that is presented visually. Visual literacy develops critical and independent thinking (Knight, 2004).

Added to the various intelligences, cultural background and the frame of reference of learners are also vastly different. Culture can play an important role in learning style. Arts education provides opportunity for the development of individual thinking. This contributes to respect for diversity and prevents stereotyping. Critical and creative thinking, alertness, openness, and acceptance of others are of the qualities that can be attained (Greene, 1995, p. 179). The Arts provide an environment and opportunity that empowers diverse learners to participate in activities which develop observation and expression (Kear et al., 2000, p. 135).

There are concerns amongst Arts education practitioners about the effect of yet another review and the impact the changes might have on the quality of Visual Arts education.
Change is upon us once again

As mentioned in the beginning of this paper, C2005 has been reviewed and major changes can be expected. A certainty is the increase of time allocated to languages, mathematics and science. This brings to mind the critique by Chapman (2004, p. 12) of the ‘No Child Left Behind Act’ of the USA as follows; the core academic subjects, previously called the three R’s (Reading, wRiting and aRithmetic) are granted most time and funding, while the Arts are often regarded as an extra, used as a bribe or reward. Wright (2003, p. 39) states that artistic modes of knowing are overlooked where the three R’s are primary.

It is clear from the report tabled by the task team that the learning area Arts and Culture will cease to exist and it seems that distinct teaching in the Art disciplines, will be re-instated (Final Report, 2009, p. 42-44). Exactly what will happen to Visual Art remains uncertain until the final policy is published. Drafts of the new policy documents were made available for comment by stakeholders in September 2010. As Visual Arts education is often on uncertain ground, a great concern for Arts educators is what will happen with the teaching of quality Visual Arts education.

In an article in the Cape Times, Le Roux (2007, p. 11) mentioned that the participation in Arts and Culture by all learners can contribute to the development of critical thinking, imaginative skills and creativity. This requires skilled Arts Educators who are able to communicate the Arts to all South African learners. Ms Le Roux stresses the necessity of skills-based Arts education in the General Education and Training Band to ensure proper articulation into the Further Education and Training specialised Art subjects. It could be argued that worldwide, the low status and time allocated to the Arts in education in comparison with the other educational imperatives such as Sciences, Mathematics and Technologies points to the general lack of appreciation of the contribution of the humanities to the development of people as social, cultural, productive and collaborative citizens. Ms Le Roux cites Psilos (2002, p. 1), who draws attention to the compelling advantages of Arts education developing “competencies necessary to become economically self-sufficient over the long term” and the potential impact of Arts education on workforce preparation. There is mention of the success of Arts education programmes, especially amongst youth at risk; through increasing academic performance, reducing absenteeism, increasing self-esteem, interpersonal skills, positive attitudes towards work, creative thinking, problem-solving and communication skills and the ability to work without supervision.

Prior to 1994, and the change in South Africa to an inclusive democratic government, Arts education was not available to the majority of learners in South Africa. Music and Visual Art tuition was primarily offered at the schools formally reserved for ‘white’ students and at some ‘coloured’ schools. Schools from the ex-department of education and training for black learners provided tuition in Arts and Crafts. For the rest, learners who could afford it studied Music and Dance privately outside of school time. Children from higher socio-economic brackets, who were exposed to the Arts through other sources, such as families and communities, reaped the benefits of these activities;
children lacking these resources lost out on the educational advantages that Arts education provides. The inclusion of Arts and Culture as a compulsory learning area for all learners in the General Education and Training Band is a wonderful opportunity for all to empower themselves through participation in the Arts (Le Roux, 2007, p. 11).

Who are to facilitate the learning through Visual Arts education that is such an important part of the holistic development of pupils in the primary school that can lay a foundation for building on in the Further Education and Training (FET) band and the focus schools that have been started by the DoE?

**Higher education**

At the level of higher education, the former teacher’s diploma had to be revised to provide for the training of teachers in a BEd degree (Adler et al., 2002, p. 19, 33). The White Paper on Higher Education (RSA, 1997) recommended that teacher education be unified in a system of higher education. Five principles were recommended as a basis, namely: global and national relevance, learner centeredness, professionalism, cooperation and collegiality and innovation. A Committee on Teacher Education and Policy (COTEP) put together norms and standards (1995), in accordance with the national policy sanctioned by the minister of education in 1995 (Pretorius, 2004, p. 114).

Future curricula were expected to be congruent with these standards as set out in the Higher Education Qualifications Framework (HEQF). The transformation was based on equality, human dignity, social justice and basic human rights. The approach to education and training, lifelong learning and outcomes-based delivery was organised on the basis of the qualifications framework (Pretorius, 2007, p. 44-45).

Norms and standards identify seven roles of the teacher as mediator of learning, interpreter and designer of learning programmes, assessor, lifelong learner, area/subject/discipline/phase specialist, active in the community in citizenship and pastoral roles, leader, administrator and manager (Du Plessis, 2007, p. vi-ix).

New structures for quality assurance, such as the Committee for Higher Education (CHE), the Higher Education Quality Committee (HEQC), and the South African Qualifications Authority (SAQA) were put in place. Substantial reform was enforced in a very short period of time (Pretorius, 2007, p. 44-45).

Since 2001 pre-service teachers at various Universities in South Africa have had the changed school curriculum built into their subject didactics for the learning areas, as expounded in the National Curriculum Statement for C2005 (National Curriculum Statement. Grade R-9 (Schools) Policy, 2002). However, at this point in time, teachers who have had the didactics of the National Curriculum Statement taught as a formal part of their BEd degree comprise approximately 20% of the workforce currently teaching in schools.
Teacher training in Visual Art

My concern about Visual Arts education and the learning opportunities as a result of quality Arts education led to an investigation of the curricula for teacher training in Arts and Culture. The curricula for Arts and Culture, especially Visual Art of four South African and one foreign university were compared. Universities: 1, 2, 3 and 5 are South African, while university 4 is in a foreign country.

The yearbooks of the universities were available and opened on the Internet. Some of these documents for the BEd degree were very comprehensive, adding up to over 300 pages, whilst others were very basic, consisting of only four pages.

From these yearbooks, undergraduate curricula and all the information that pertained to Visual Arts education, and in some cases Arts and Culture, for the four years of study was extracted and is presented in table form in this paper. The purpose of this extraction is to compare what is offered at other universities for the BEd degree in Arts education.

Anonymity of the universities consulted is preserved for the purpose of this paper.
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<tr>
<th>University 1</th>
<th>University 2</th>
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<th>University 4 (F)</th>
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<tbody>
<tr>
<td><strong>Year 1</strong></td>
<td>BEd I/SP; BEd FP (combined course)</td>
<td>Y1 and 2 three of the approved school subjects of which Visual Art can be one. Compulsory learning area didactics: Art and Handwork To gain insight into the orientation, stages of development, aims and objective, role of Art teaching, Art activities and materials</td>
<td>Creative Arts 1 Professional studies in Creative Arts (Visual Art, Music, Drama, and Dance) Credit points: 6; Semester: 2 Classes: 1 hour lecture 2 hour workshops for 13 weeks. Assessment: Arts learning experiences assignment &amp; VAPD/Portfolio This unit comprises Curriculum and Professional Studies of four Creative Arts components: Visual Arts, Music, Drama and Dance. It combines both theoretical and practical/studio work across a range of art forms appropriate for K - 6 classrooms.</td>
<td>Art in Education 1; 4 credits; 2ppw; 25wks Introduction and application of variety of media and techniques suitable for Foundation Phase. Application of the Elements of Art. Insight into the stages of development and the importance of Art in the development of the child. Introduction to Method of Art Education.</td>
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<td>Art and Culture (Music and Art)</td>
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<td>Art in Education 2; 4 credits; 2ppw; 25wks</td>
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<td>10 credits</td>
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<td>Practical work focusing on media and techniques suitable for application in G1-3</td>
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<td>2lpw 2ppw</td>
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<td>Preparation for teaching practice.</td>
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<td>Applied Visual Art, 3D, transformation.</td>
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<td>Art appreciation</td>
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<td>Music and Dance in Education, creative</td>
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<td>Study of Art forms of different Cultural groups in SA</td>
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<td>activities, playing instruments.</td>
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<td>objective, role of Art teaching, Art</td>
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<td>Art in Education 3; 4 credits; 2ppw; 25wks</td>
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<td>activities and materials</td>
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<td>In-depth experience of the following:</td>
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<td>Picture-making projects,</td>
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<td>Art and Culture in the NCS</td>
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<td>in Education, Drama strategies.</td>
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<td>Year 3</td>
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<td>6 credits, 2 ppw. Presented as a</td>
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<td>compulsory Module. The role of Art</td>
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<td>Creative Arts 2</td>
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<td>Education in early years. The learning</td>
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<td>Credit points: 4; Session: Semester 1; Classes: 2</td>
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<td>area A&amp;C (Art and Culture).</td>
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<td>hours/week for 13 weeks; Prerequisites: 36 credit</td>
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<td>points of professional studies in Primary Education including EDUP1001</td>
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<td><strong>BEd I/SP; BEd FP</strong></td>
<td><strong>Dance (social, art and movement) as educational and creative learning experience and cultural activity in Afro-centric and international context. Didactics and method dealt with during Theory and Practice of all learning areas.</strong></td>
<td><strong>Assessment:</strong> Unit of work or Resource Kit and continuation of VAPD/Portfolio This unit comprises four Creative Arts components: Visual Arts, Music, Drama and Dance. It continues to develop both theoretical and practical/studio work across a range of Art forms appropriate for primary age children.</td>
<td><strong>Art in Education 3; 4 credits; 3ppw; 25 wks</strong> In-depth experience of the following: Picture-making projects, Craft Art and Culture in the NCS Integrated lessons Assessment of Art projects</td>
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<td><strong>Year 3</strong></td>
<td><strong>Year 4</strong></td>
<td><strong>2 units of study, one of which may be Visual Art Integrated Arts (A) Special Course</strong> Credit points: 4; Session: Semester 1; Classes: 2 hours/week for 12 weeks; Prerequisites: 72 credit points of Professional Studies in Primary Education and EDUP1001 and EDUP3008</td>
<td><strong>Integrated Arts: Drama, Music, Visual Art, Dance Knowledge of theories on creativity Art appreciation. Exhibitions, budget, management of an Art unit at school. Integrated programmes</strong></td>
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<td>University 1</td>
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To teach learners from 5-12 years of age.

Assessment: A reflective portfolio derived from the in-school experience including planning processes for the work undertaken and a written critical reflection. Length and complexity appropriate for a final year unit of study. Criteria will be negotiated.

Note: Department permission required for enrolment.

This unit of study provides students with the opportunity to further their knowledge, skills, techniques and understandings in the Creative Arts, building on earlier units in the Bachelor of Education (Primary) program. It also involves teaching creative arts in a school context.
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<td>Integrated Arts Special Course comprises Integrated Arts A (Semester 1) and Integrated Arts B (Semester 2)</td>
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<td>Integrated Arts (B) Special Course</td>
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<td>Semester 1; 72 credit points of Professional Studies in Primary Education</td>
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<td>Note: Department permission required for enrolment</td>
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<td>Integrated Arts (B) Special Course</td>
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<td>Credit points: 4; Session: Semester 2; Classes: 2 hours/week for 12 weeks</td>
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<td>Prerequisites: EDUP4070</td>
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<td>Assessment: Assessment options will be negotiated with the students but are linked to unit outcomes and reflect the 4 credit point loading.</td>
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<td>University 1</td>
<td>BEd I/SP; BEd FP (combined course)</td>
<td>University 3</td>
<td>Bachelor of Education (Primary Education)</td>
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<td>University 4 (F)</td>
<td>To teach learners from 5-12 years of age.</td>
<td>University 5</td>
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**Year 4**

Possible examples include: reflective scrapbook/portfolio; rationale for using Creative Arts in the primary school; critical responses to ‘Arts’ experiences. Note: Department permission required for enrolment. This unit of study will further develop students’ knowledge, skills, techniques and understandings in the Creative Arts, building on the unit of study undertaken in Semester 1.

**ACE**

Arts Education
Subject Didactics Art and Culture integrated
Table 2: BEd Intermediate Phase

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<td><strong>Year 1</strong></td>
<td>20 credits 4 ppw</td>
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<tr>
<td><strong>Art Theory 1</strong></td>
<td>Summary of ancient Art</td>
<td>Analysis and identification of structure, form,</td>
<td>Creative Arts 1</td>
<td>Subject Didactics: Learning Areas 1; 5 credits; 1ppw</td>
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<td>Theory of children’s Art and developmental stages with emphasis on gr. 4 – 6</td>
<td>composition, texture and spatial relations. Assessment of work.</td>
<td>Professional studies in Creative Arts (Visual Art,</td>
<td>Compulsory: Art and Culture</td>
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<td>Theory of visual Art.</td>
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<td>Music, Drama, and Dance)</td>
<td>Introduction and application of a variety of media and techniques suitable for I/S Phase</td>
<td>Knowledge of the stages of development and the importance of Art in the development of the child.</td>
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<td>Rationale of Art Education.</td>
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<td>Credit points: 6; Semester; 2</td>
<td>Method of Art Education.</td>
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<td>Observation studies:</td>
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<td>It combines both theoretical and practical/studio work across a range of art forms appropriate for K – 6 classrooms.</td>
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<td><strong>Year 1</strong></td>
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<td>Painting skills I</td>
<td>A study of different media and techniques, watercolours, tempera, acrylics and mixed media in practical exercises. Introduction to form and colour manipulation as compositional element. Evaluation of suitable works. Graphic printing I Analysis of and introduction to graphic printing. Planning and implementation of elementary graphical processes. Intaglio and relief work. Graphic design I Application of design elements and principles. Principles of page layout and typography with the emphasis on accessibility of information. Application and problem solving.</td>
<td>Y1 and 2 three of the approved school subjects of which Visual Art can be one Compulsory learning area didactics: Art and Culture To gain insight into the theoretical orientation and general approach, aims and objectives, organization and administration, curricula and curriculum design, equipment and teaching aids, planning lessons and the evaluation of work. (or Music, or Drama)</td>
<td>Creative Arts 1 Professional studies in Creative Arts (Visual Art, Music, Drama, and Dance) Credit points: 6; Semester; 2 Classes: 1 hour lecture 2 hour workshops for 13 weeks. Assessment: Arts learning experiences assignment &amp; VAPD/Portfolio This unit comprises Curriculum and Professional Studies of four Creative Arts components: Visual Arts, Music, Drama and Dance. It combines both theoretical and practical/studio work across a range of art forms appropriate for K – 6 classrooms.</td>
<td>Subject Didactics: Learning Areas 1; 5 credits; 1ppw Compulsory: Art and Culture Introduction and application of a variety of media and techniques suitable for I/S Phase Knowledge of the stages of development and the importance of Art in the development of the child. Method of Art Education. Introduction to Dance, Drama, Music and Visual Art; 5 credits; 1ppw Introduction to: Visual Art: Practical work: picture making, drawing, painting, mixed media, modelling, design. Theory: Art appreciation, South-African Art, Art in Europe in modern times.</td>
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<td>University 1</td>
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<td><strong>Year 2</strong></td>
<td>Methodology of learning areas. Choose 2 in accordance with the electives in Y2 which must also be taken in Y4 Art, Culture and Drama Y2 6 credits, Learning Area: Art, Culture and Drama.</td>
<td>Art and Culture (Music and Art) 10 credits 2LPW 2PPW Applied visual Art, 3D, transformation. Music and Dance in Education, creative activities, playing instruments.</td>
<td>Y1 and 2 three of the approved school subjects of which Visual Art can be one Compulsory learning area didactics: Art and Culture To gain insight into the theoretical orientation and general approach, aims and objectives, organization and administration, curricula and curriculum design, equipment and teaching aids, planning lessons and the evaluation of work. (or Music, or Drama)</td>
<td>Specific Subject Didactics: Learning Areas 2; 2 credits; 6wks module for Visual Art Compulsory: Art and Culture Knowledge of: Subject didactics Integration within the learning area Jobs in the Arts/Entrepreneurship Electives (Choose 4) Art 1 (One of 8 possibilities); 7 credits; 2ppw Thorough experience in: Drawing, design, application in Craft Modelling Visual Literacy, Art appreciation and analysis Gallery excursion</td>
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<td>Year 3</td>
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<td>Methodology of electives (Choose 3 in accordance with the electives in Y3)</td>
<td>Methodology of Art Y3 6 credits 2 ppw</td>
<td>Art and Culture (Dance and Drama) 10 credits 2 LPW 1 PPW</td>
<td>Creative Arts 2 Credit points: 4; Session: Semester 1; Classes: 2 hours/week for 13 weeks; Prerequisites: 36 credit points of professional studies in Primary Education including EDUP1001 Assessment: Unit of work or Resource Kit and continuation of VAPD/Portfolio This unit comprises four Creative Arts components: Visual Arts, Music, Drama and Dance. It continues to develop both theoretical and practical/studio work across a range of art forms appropriate for primary age children.</td>
<td>Specific Subject Didactics: Learning Areas 3 (Choose 5 out of 8 possibilities) Art and Culture; 8 credits; 2ppw Study of the Learning Area Lesson planning, assessment, ordering, budget Study of Child Art Practical application Electives (Choose 3 out of 8 possibilities) Art 2; 15 credits; 4 ppw In-depth experience in: Advanced picture-making. Painting/mixed media Craft Installation Art. Contemporary technology Movements in Art SA Crafter/Installation/Land/Environmental Art Visit to Art Galleries</td>
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<td></td>
<td>As required by the National Curriculum. ELECTIVES Art as possible of three electives of which one has to be Learning support.</td>
<td>Voice training and production, drama in Education, Drama strategies. Dance (social, art and movement) as educational and creative learning experience and cultural activity in Afro-centric and international context. Didactics and method dealt with during Theory and Practice of all learning areas.</td>
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<td><strong>Year 4</strong></td>
<td>12 credits 2/3 ppw Methodology of Art, Culture and Drama as a learning area as required by the National Curriculum.</td>
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<td>2 units of study, one of which may be Visual Art Integrated Arts (A) Special Course Credit points: 4; Session: Semester 1; Classes: 2 hours/week for 12 weeks; Prerequisites: 72 credit points of Professional Studies in Primary Education and EDUP1001 and EDUP3008 Assessment: A reflective portfolio derived from the in-school experience including planning processes for the work undertaken and a written critical reflection. Length and complexity appropriate for a final year unit of study. Criteria will be negotiated. Note: Department permission required for enrolment.</td>
<td>Compulsory: Subject Didactics of 2 Major subjects from electives; 10 credits Mastery of: Advanced didactics of Art Education Comparative studies of teaching methods in Art Curriculum design Exhibitions Integration of the disciplines of Art and Culture Electives (Choose 2) Art 3 (One of 8 Possibilities in three blocks); 20 credits; 4ppw Competence in: Development of own style in two of the following: Drawing (Compulsory), Painting, Design and Printing, Ceramics, Sculpture, Décor and Costume Design. History of Art and Art appreciation Research and method Exhibition of work</td>
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<td>Year 4</td>
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<td>This unit of study provides students with the opportunity to further their knowledge, skills, techniques and understandings in the Creative Arts, building on earlier units in the Bachelor of Education (Primary) program. It also involves teaching creative arts in a school context. Integrated Arts Special Course comprises Integrated Arts A (Semester 1) and Integrated Arts B (Semester 2) Integrated Arts (B) Special Course Semester 1; 72 credit points of Professional Studies in Primary Education Note: Department permission required for enrolment Integrated Arts (B) Special Course</td>
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<tr>
<td>Year 4</td>
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<td>Credit points: 4; Session: Semester 2; Classes: 2 hours/week for 12 weeks</td>
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<td>Prerequisites: EDUP4070</td>
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<td>Assessment: Assessment options will be negotiated with the students but are linked to unit outcomes and reflect the 4 credit point loading.</td>
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<td>Possible examples include: reflective scrapbook/portfolio; rationale for using Creative Arts in the primary school; critical responses to ‘Arts’ experiences</td>
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<td>Note: Department permission required for enrolment. This unit of study will further develop students’ knowledge, skills, techniques and understandings in the Creative Arts, building on the unit of study undertaken in Semester 1.</td>
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<td><strong>P/G</strong></td>
<td>Arts Education (ACE) Subject Didactics Art and Culture integrated</td>
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**Table 3: BEd Senior Phase**

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<tr>
<th>Year 1</th>
<th>University 1</th>
<th>University 3</th>
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<tbody>
<tr>
<td><strong>ELECTIVES</strong></td>
<td>Art as possibly one of 3 electives of which at least one should be Mathematics, General Mathematics, General Science or Design and Technology. Art&lt;br&gt;Y1 20 credits 6 ppw, Y 2 20 credits 6 ppw, Y3 24 credits 8 ppw&lt;br&gt;Art: Theory&lt;br&gt;Summary of ancient Art&lt;br&gt;Theory of children's art developmental stages with emphasis on gr. 10 – 12. Theory of visual Art. Rationale of Art Education. Curriculum 2005.&lt;br&gt;Handling of Art Education with context of schools – purchasing of material, classroom management. Care of Art works and exhibitions.&lt;br&gt;Art: Practical&lt;br&gt;Drawing skills I&lt;br&gt;Observation studies: Introduction of fundamental elements and principles, techniques and use of media. Analysis and identification of structure, form, composition, texture and spatial relations. Assessment of work.&lt;br&gt;Painting skills I&lt;br&gt;A study of different media and techniques, watercolours, tempera, acrylics and mixed media in practical exercises. Introduction to form and colour manipulation as compositional element. Evaluation of suitable works.</td>
<td>Various Art subjects. Also FET training</td>
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<td>Year</td>
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<tr>
<td></td>
<td>Graphic printing I</td>
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<td></td>
<td>Analysis of and introduction to graphic printing. Planning and</td>
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<td></td>
<td>implementation of elementary graphical processes. Intaglio and relief</td>
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<td>work.</td>
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<td></td>
<td>Graphic design I</td>
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<tr>
<td></td>
<td>Application of design elements and principles. Principles of page layout</td>
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<td>and typography with the emphasis on accessibility of information.</td>
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<td></td>
<td>Application and problem solving.</td>
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<tr>
<td>Year 2</td>
<td><strong>METHODOLOGY OF LEARNING AREAS</strong></td>
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<td>Choose 2 in accordance with the electives in Y2 which must also be</td>
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<td>taken in Y4</td>
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<td></td>
<td>Art, Culture en Drama Y2 6 credits, Y4 12 credits 2/3 ppw</td>
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<td></td>
<td>Learning Area: Art, Culture and Drama</td>
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<td>Methodology of Art, culture and Drama as a learning area as required</td>
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<td>by the National Curriculum.</td>
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<td>History of Art I</td>
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<td></td>
<td>History of Art: introduction and overview of 19th and 20th century art in</td>
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<td>Europe. Important artists and art works of this period are emphasized</td>
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<td>and discussed in context. Evaluation and discussion of exhibitions.</td>
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<td>Museum visits.</td>
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<td>History of Art II</td>
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<tr>
<td></td>
<td>Theory of visual literacy</td>
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<td></td>
<td>Investigation of theoretic framework used in the interpretation,</td>
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<td>analysis and evaluation of visual culture. Emphasis on interaction of</td>
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<td>image and text evaluation and analysis of visual art.</td>
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<tr>
<td><strong>Year 2</strong></td>
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<tr>
<td>Art: Practical</td>
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<tr>
<td>Drawing skills II</td>
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<tr>
<td>Analysis of form, structure, composition and perspective. Further</td>
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<td>experimenting and application thereof. Perception of the human</td>
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<td>form, analysis of relations and composition for figure drawing.</td>
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<td>Experimenting with traditional media in the portrayal of figure</td>
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<td>drawing. Drawing from life.</td>
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<td>Painting skills II</td>
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<tr>
<td>Portrait, figure and landscape painting. Emphasis on specific media</td>
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<td>and techniques; use of colour in the creation of atmospheric perspective.</td>
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<td>Graphic design II</td>
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<tr>
<td>Introduction to the design process: originality and concept</td>
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<td>development. Study of two and three dimensional forms. Analysing</td>
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<td>and identifying of forms. Stylizing to abstraction.</td>
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<td>Graphic printing II</td>
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<tr>
<td>Analysis of graphic art works, traditional and contemporary styles and</td>
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<td>techniques, mastering of various carving techniques and the making</td>
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<td>of graphic printing blocks. The multi-block sand lino block as graphic</td>
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<td>printing process are studied and applied. A study and development</td>
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<td>of graphic printing. Integrated application of knowledge and skills by</td>
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<td>means of advanced graphic problem solving. Elaboration of intaglio</td>
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<td>and relief prints.</td>
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<td>Year</td>
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<td></td>
<td>Modelling I</td>
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<td>Form study: clay. Sculptural exploration in clay, carving, construction methods. Study of formal and experimental</td>
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<td>independent application of three-dimensional forms. Construction methods. Independent work. Textile decoration I</td>
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<td>Mastering of decoration processes on textile. Experimenting with various methods of dying or application of paint to</td>
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<td>textiles.</td>
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<td>METHODOLOGY OF ELECTIVES</td>
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<td>Year 3</td>
<td>Choose 3 in accordance with the electives in Y3</td>
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<td>Methodology of Art Y3 6 credits 2 ppw</td>
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<td>As required by the National Curriculum. History of Art III</td>
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<td>Theory of visual literacy</td>
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<td></td>
<td>Investigation of theoretic framework used in the interpretation, analysis and evaluation of visual culture. Emphasis</td>
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<td>on interaction of image and text evaluation and analysis of visual art.</td>
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<td>History of Art III</td>
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<td>South African Art: General introduction to SA artists. Pioneers, including contemporary trends, styles and techniques</td>
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<td>are studied. Emphasis on self-study. Museum visits.</td>
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<td>Art: Practical</td>
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<td>Drawing skills III</td>
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<td>Traditional and experimental use of drawing media. Introduction to the nature and role of illustration, visualisation</td>
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<td>and expression of ideas. Interpretation of objects, figures to visual form, visual abstraction. Research of creative</td>
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<td>Year 3</td>
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|       | Graphic design III  
Design as visual communication: use of typography and page layout as expressive medium. Layout systems and structures. Integration of image and text in the design of letterheads, logos and brochures. Visual analysis and interpretation. Study of contemporary style trends. Acquaintance with packaging, marketing and textile design. Individual design research projects.  
Graphic printing III  
Introduction of serigraphy as graphic media. Experimental work. Application in poster and invitation cards. Corporate presentation. Study of applicable theory according to study guides.  
Painting skills III  
Analysis of form, structure and composition. Portrait and figure painting. Application of formal and experimental painting techniques. Experimenting with media-watercolours, tempera and acrylics as well as mixed media.  
Modelling II  
Study of three-dimensional form – combination of different pottery techniques. Decoration techniques of units – patterns.  
Choice of two of the following:  
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<th>Year 4</th>
<th>University 1</th>
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<tr>
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<td>METHODODOLOGY OF LEARNING AREAS</td>
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<td>Choose 2 in accordance with the electives in Y2 which must also be taken</td>
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<td>in Y4 Art, Culture en Drama Y2 6 credits, Y4 12 credits 2/3 ppw</td>
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<td>Learning Area: Art, Culture and Drama</td>
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<td>Methodology of Art, Culture and Drama as a learning area as required by</td>
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<td>the National Curriculum.</td>
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Summary and discussion

The curricula for teacher training in Visual Art and in some cases Arts and Culture as offered by five universities is summarised under numeric headings and discussed briefly.

Blank spaces indicate other courses, mainly Education, Professional Studies, Academic Literacy, Languages and Mathematics, which are not considered for the purpose of this study.

University 1
The degree is divided into three possibilities, namely: Foundation Phase, Intermediate Phase and Senior Phase. This is the only university in the study that offers the Senior Phase as a separate option.

For the Foundation Phase, Arts education is only presented in year 3 as a compulsory module. The learning area Arts and Culture is studied.

For Intermediate and Senior Phases there is a very comprehensive programme in Visual Arts education with a theoretical and practical component aimed at the age group falling in that phase. The NCS and learning areas are dealt with in methodology. Courses are offered over the course of a year. Practical work, as well as the history and theory of the Arts form part of the elective that is to be studied as an area of specialisation.

University 2
The degree is combined for Foundation and Intermediate Phases.

For year 2 there is Arts and Culture (Music and Art), which includes applied Visual Art, three-dimensional and transformation.

Didactics and method is dealt with during theory and practice of all the learning areas. Visual Art is not offered as an area of specialisation at undergraduate level.

University 3
One degree is offered for all phases. During year 1 and 2 three of the approved school subjects of which Visual Art can be one, is offered. The compulsory learning area didactics: Art and Handwork has as its aim the gaining of insight into the orientation, stages of development, aims and objective, role of Arts teaching, Arts activities and materials. Visual Art is not offered as an area of specialisation.

University 4
This is a foreign university of which an Outcomes Based curriculum is followed in schools. Similar to South Africa the Arts disciplines (Dance, Drama, Music and Visual Art) are combined as one learning area.

The BEd is offered for the teaching of primary school children (ages 5-12) and a separate degree for the teaching of secondary school children.
In year 1 Professional Studies combine the Art forms. These are offered as semester courses. Theoretical and practical/studio work across a range of Art forms appropriate for K-6 classrooms is offered.

Year 3 offers a succession of the above, but the emphasis is now on work for primary school learners. It is offered in semester courses.

During year 4 there is continuation of the above in semester courses. During this year there is room for reflection after the in-school experience.

Throughout the training the Creative Art is presented in an integrated manner.

**University 5**

The BEd degree is presented for Foundation Phase and Intermediate/Senior Phase separately. Visual Art and Subject Didactics are offered from year 1 through to year 4. Students following Intermediate/Senior Phase can take Visual Art as an elective specialisation through to fourth year level. The Subject Didactics of all learning areas have to be completed under a separate subject code. Practical work is presented in a wide range of media and techniques suitable for primary school level. Art History Method and Theory are included.

It is clear that the majority of Universities have structured the courses in Visual Arts education according to the current curricula in schools. What is the role of Higher Education Institutions in an ever-changing scenario?

**The role of Higher Education Institutions (HEIs)**

How much should the ever-changing school curricula influence what is taught in pre-graduate level of university programmes?

It is clear from the curriculum outlines above that the BEd curricula for the universities in South Africa, which were selected for this comparison, have been designed with the curriculum that is presently followed in schools as a guideline for the course “Subject Didactics and Method”. How is the review of C2005 and the subsequent new Curriculum and Assessment Policy document going to influence Universities in their training of teachers for their future careers in schools in this country?

Wolhuter (2007, p. 217) suggests that overt national governmental involvement and bureaucratic administration could impact negatively on the academic profession. Reshaping the current model of education, that is informed by thorough research could redress and ensure that universities remain the citadel from where the wise could give counsel.

Higher education has to identify the learning needs of private and public sectors and reorganise curricula to match desired outputs. The mode of delivery should be dynamic, flexible and responsive to the demands and needs of the country (Gravett et al., 2004, p. 141). It is important that there should be cooperation between HEIs and practice schools. Reflective inquiry is important in assigning meaning to teaching
and the practical activity of establishing whether these meanings are realised in the shaping of teacher-education programmes (Van Huizen et al., 2005, p. 285, 278).

Teachers need to have an understanding of the subject matter that they need to teach to ensure quality and meaningful Visual Arts education (Darling-Hammond et al., 2005, p. 5). Furthermore, they need to understand the development of children and how Visual Art education can support this development. Learning and development are embedded in cultural contexts. Knowledge of the subject matter and curriculum goals of Visual Arts education, knowledge of how to teach Arts lessons, knowing how to assess Arts projects and how to manage an Arts classroom effectively is required. Through the teaching of Arts lessons teachers will learn more about Visual Arts practice.

Candidates for the teaching profession need a body of knowledge as foundation. Courses should be coherent and build on one another. There should be opportunities for practice teaching which are tied to the learning of constructs and be provided with examples of what good teaching looks like and consists of (Baratz-Snowden, 2005, p. 10).

With regards to Visual Arts education there are questions about the generalist vs. the subject specialist and the impact on quality Visual Arts education. Most students entering the BEd programme have not experienced quality Visual Arts education at school level. With two or more majors forming part of the BEd final year there is less time for the nurturing into the art of teaching Art, which requires time to practice skills, time to focus and reflect on the potential for rich and varied learning that is possible through quality Visual Arts education. Should the voice of the teachers themselves, when asked how they believe they could be practically assisted, not be heard when they requested that specialisation in one learning area should be encouraged? Such assistance could deepen their knowledge and teaching skills and enable generalist teachers to teach at least some subjects properly (Johnson, 2005, p. 7).

The Final Report from the review task team suggests that the generic integrated attempts of the current curriculum should be replaced by a more distinct focus on Drama, Dance, Music and Visual Art (Final Report, 2009, p. 2-44). The report suggests that outcomes should be replaced with content, concepts and skills that are most appropriate to learning at different levels.

HEIs should proactively be involved in the design of new curricula, from an expert and subject specialist point of view, so that their graduates entering schools are informed and enlightened and not necessarily be dictated by bureaucratic procedures.

**Conclusion**

The principles for the teaching of quality and meaningful Visual Arts education remain the same throughout school systems. The uncertainty with regards to the new school curriculum has impacted negatively on the ratio of graduates choosing the Arts as majors. This fact has been aggravated by the allocation of bursaries only to students with Mathematics, Science and Technology as the chosen majors. The importance of
Literacy and Numeracy at school level can never be disregarded, but Visual Literacy is an important part of being literate. Educators involved in Visual Arts education cannot sit back and allow a decline in the training of Visual Arts educators. The current shortage of well-trained Visual Arts educators should be addressed and the quality of Visual Arts education over the entire spectrum assured to allow all members of future generations in schools to experience the rich variety of learning opportunities that are possible through quality Visual Arts education.

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School going children have a broad range of needs at any given point in time. If these needs are not met, they may experience barriers to learning and development, which can result in the breakdown of the learning process or even total exclusion. Barriers to learning and development affect learners differently, but nothing threatens their development and quality of life in the same way as the impact of the HIV/AIDS pandemic. Young children, because of their dependence on others, are likely to suffer developmental, educational, emotional and physical setbacks, due to the impact of the pandemic. For many, the impact is so great that their access to schooling is threatened as they (and their siblings) struggle to survive. This article discusses literature on how HIV/AIDS intensifies poverty, while in the process marginalising affected and infected children; and it is also concerned with how communities can respond to the needs of these vulnerable children. Particular attention is paid to drop-in centres as a sustainable response to the challenges young children face in KwaZulu-Natal. The article concludes that the drop-in centre scheme is a desirable model of care as it employs an environmentally friendly approach that relies on inter-sectoral collaboration to provide care and support for children in need.

**Keywords:** drop-in centre, HIV/AIDS, orphans and vulnerable children, community, poverty
Introduction and background

The Department of Education (DoE) acknowledges the existence of numerous barriers to learning and development in education, barriers that can cause learning breakdown and/or exclusion if they remain unaddressed. These could be located within individual learners, within the system of education, and in broader socio-economic or political systems within which learners live (DoE, 1997). Two factors that can cause serious barriers to learning and development as identified in Education White Paper 6 (EWP6) are “particular life experiences and socio-economic deprivation” (DoE, 2001, p. 17).

In the South African context, there are life experiences that place learners at risk, factors such as child abuse, political or criminal violence, and epidemics, e.g. HIV/AIDS. For example, the death of parents and other important family members, as a result of HIV/AIDS-related illnesses, can deepen and worsen the experiences of poverty (Gouw, Desmond & Ewing, 2002). It is evident that the HIV/AIDS pandemic has a significant impact on the lives of children, whether infected or affected. This is due to the fact that children have physical, emotional, social and educational needs that must be met to facilitate their development, and they rely mostly on their parents to meet these needs.

It is this dependence on others that makes children vulnerable members of society; as a result, it is likely that they are the hardest hit by the impact of HIV/AIDS. Since HIV/AIDS affects the socio-economic status of affected households, it renders young children vulnerable as their physiological and educational needs take a back seat (Human Sciences Research Council (HSRC), 2010). Pharoah (2004) argues that children’s vulnerability in the context of HIV/AIDS could be a result of a reduction of resources that are available to them coupled with the destabilisation of the institution on which they depend; the family. In instances where they become orphaned, they often experience “life transitions and hardship” (Zhang, Li, Kaljee, et al., 2009, p. 544) as they take on adult household responsibilities. Such experiences could impact their development negatively as many drop out of school, are victimised and/or exploited (Pharoah, 2004). In the event that they live in poverty, which is a barrier to learning and development linked to the impact of HIV/AIDS (DoE, 1997), the influence is intense and has unrelenting effects (Richter, Manegold, & Pather, 2004).

South Africa, reportedly, has the highest HIV/AIDS-infection rates in sub-Saharan Africa (Rispel & Popay, 2009), and predictions indicate that the number of orphans would reach 3 million by 2011, unless treatment intervention is made available to enable HIV-positive mothers to live longer (Gouws & Desmond, 2002). This forecast was realised three years earlier than expected (HSRC, 2010). In light of these, and similar claims and predictions, it is understandable why this country is currently dealing with the reality of ever increasing numbers of orphans, and vulnerable children, resulting from escalating HIV/AIDS-related infections (HSRC, 2010).

The death of parents, and important family members, as a result of HIV/AIDS-related illnesses, negatively impacts children’s willingness and ability to attend school (Moletsane, 2003). This explains why the majority of poverty-stricken children, and those personally affected by HIV/AIDS drop out of school (Moletsane, 2003). She adds
that in instances where they are taken care of by elderly surrogate parents; they are often kept out of school, because schools are viewed as irrelevant. In other instances financial pressure becomes so unbearable that those taking care of the orphaned children decide to remove them from school entirely.

What is clearly evident is that HIV/AIDS is “a disease of poverty and disadvantage” (Rispel & Popay, 2009, p. 95) and this is apparent in that the majority of affected children live in extreme poverty. Unfortunately, poverty reduces people’s capacity and opportunities to access services like proper shelter, adequate nutrition (Rispel & Popay, 2009), and education. That is why EWP6 is concerned with, and committed to, the provision of support and care to those learners who are orphaned and/or in distress. EWP6 is also concerned with the development of a “humane and caring society” (DoE, 2001, p. 14), a community where people are not discriminated against but instead, where their differences are accepted and celebrated (DoE, 1997). In such a community the education system becomes responsive to the learning needs of all children, and fosters links with other departments to ensure that all services necessary to support children’s learning and development are readily available.

In response to the scourge of HIV/AIDS, several government documents have tabled strategies to combat the pandemic, with particular attention being paid to facilitating support for families, and encouraging communities to care for the sick as well as orphaned children1 (http://www.kznhealth.gov.za/aidsstrat.pdf). KwaZulu-Natal is said to be the most populated province in the country, and is the “epicentre of the pandemic” (Clarke, 2004, p. 1). Consequently, this province has a large proportion of orphans and the HSRC (2010) argues that this province should be investigating creative, holistic and multidisciplinary responses that address affected children’s needs. One of the responses, as reflected in the HIV and AIDS Strategy for the Province of KwaZulu-Natal, 2006-2010, is the establishment of local capacity and facilities across the province to provide much needed support in caring for orphaned and vulnerable children2 (http://www.cindi.org.za).

The next two sections discuss two community-based models of care, namely, the traditional community response and the drop-in centre scheme.

The traditional community responses to vulnerability

In traditional African communities, relatives and/or neighbours took in orphaned children until they were old enough to take care of themselves. However, the unprecedented increase in the number of orphans and spiralling poverty has made it impossible for families and communities to continue with this practice (Clarke, 2004). This is confirmed by Mahlase (2008) who posits that nowadays, traditional extended family caring systems have reached a point where they can no longer accommodate ever-increasing numbers of orphaned children, because of financial constraints. He also cites the fear of stigma associated with HIV/AIDS as a deterrent to community members to want to associate with affected or infected children. Similarly, Rispel and Popay (2009) view stigma associated with HIV/AIDS as an impediment to:
HIV and AIDS [...] prevention, diagnosis, and treatment [...] There is a strong culture of silence and denial by people living with HIV and AIDS because of fear of rejection and isolation by close relatives and the community at large (p. 97).

This pandemic continues to place tremendous pressure on families and communities as it kills young productive adults, negatively impacting on children in numerous ways, particularly poverty, school dropout and crime (Moletsane, 2003; Mwase, 2000). In addition, the diversion of scarce resources away from education to medical expenses compromises the children’s future opportunities as it prematurely forces millions of orphans into the world of work (Mwase, 2000).

In the absence of institutional care in most communities in developing contexts, something needs to be done to minimise the impact of poverty and orphan-hood on affected children's learning and development. Poor and orphaned children's survival to productive adulthood is definitely dependent on the introduction of public alternative models of care and support structures. The way in which affected children are cared for has implications for their wellbeing. That is why Phiri and Tolfree (2005) argue for community-based strategies to support and provide protection for affected children, as these are likely to be influenced by cultural norms concerning childcare. Such strategies, they add, whilst involving the community in the care of children, should also be part of other community-based campaigns to deal with a range of problems caused by HIV/AIDS (Phiri & Tolfree, 2005). In other words, they are advocating for inter-sectoral collaboration as the only strategy to adequately address the impact of this pandemic on the lives of children.

If families can no longer shoulder the burden of taking care of those children who have been affected or infected by HIV/AIDS, what alternative model of care is best suited to provide care and support for these children? Clearly there is an increasing need for alternative, community-based care models that will support them in their learning, by collaborating with schools to reduce their chances of dropping out. An example of this is the drop-in site model, which offers a unique strategy to support orphaned and vulnerable children within their communities.

The drop-in centre as an alternative community response to vulnerability

The drop-in centre is an alternative, community-based response that encourages local people to actively participate in local caring initiatives. This transforms and strengthens the community-based model of care, thus enhancing children’s access to basic services within their communities. Most importantly, it offers communities a sense of ownership of projects, responsibility and self-reliance, and gives them an opportunity to decide how they want to support those members who are vulnerable.

Mahlase (2008) defines the drop-in centre as a community-based initiative practised in South Africa, particularly in KwaZulu-Natal, that incorporates early childhood development and home-based care. These centres, he adds, provide physical nourishment, while taking care of educational and pastoral needs of orphaned
and vulnerable children. Others define the drop-in centre as an all-embracing modern way of providing care and support to orphaned and vulnerable children, supplying them with all the requirements of schooling (i.e. uniforms, stationery and other school equipment), providing three meals a day and teaching various kinds of skills like gardening, beadwork, pottery, and basket weaving to generate income (Halkett, 1999, p. 12).

In addition, drop-in centres play a critical role in attending to material, pastoral and psychological needs of children. For example, in the absence of parents and other caregivers, drop-in centres are better positioned, through multi-sectoral collaboration, to provide for physiological needs (in the form of food, clothing, medical care, and school supplies), and to ensure that children get age appropriate guidance and assistance (viz. capacity building, pastoral and psychological support) to develop positive self-concepts. This becomes possible because a number of professional, semi-professional and lay people are employed by drop-in sites, and there are many volunteers from the community who come forward to assist or to learn skills (Mahlase, 2008). Some of the services provided for children at these centres, as enumerated by Mahlase (2008, p. 30) include, but are not limited to, the following; referrals, the provision of material assistance, development and implementation of programmes in early childhood and youth development, the supervision of home circumstances,
monitoring of home work and school attendance, and the creation of balanced plans to care for children. Litsemba Youth Care Centre runs a teenage pregnancy club, a soccer camp, and a hope club in addition to English lessons and Bible studies (http://www.mamkhulu.org/litsembacentredropincentre) whilst Sithabile focuses on education and skills training like self-defence for women, carpentry, candle making, panel beating, and training in early childhood development (ECD) (http://www.Sithabile.com).

The biggest advantage of drop-in centres, according to Mahlase (2008), is that they develop the capacity of local people to look after vulnerable children in environments that are friendly, and which promote self-reliance. This is supported by Guest (2001, p. 12) who contends that in contexts where there are orphaned children, the best alternative is to keep them within their communities and also keep siblings together, which is what drop-in centres attempt to do. However, in communities where attitudes towards those affected by, and infected with, HIV/AIDS are negative; the quality of support provided is likely to be compromised, as people may be reluctant to be associated with such a service centre, for fear of social reproach.

In contexts where communities are better positioned to take care of the needs of vulnerable children, what strategies can they employ to be effective? Richter et al. (2004, p. 15) have identified five strategies employed by community-based organisations to cater for the needs of orphaned and vulnerable children:

1. Strengthening and supporting the capacity of families to protect and care for their children;

2. Mobilising and strengthening community-based responses;

3. Strengthening the capacity of children and young people to meet their own needs;

4. Ensuring that governments develop appropriate policies, including legal and programmatic frameworks, as well as, essential services for most vulnerable children, and lastly; and

5. Raising awareness within societies to create an environment that enables support for children affected by HIV/AIDS.

These strategies emphasise giving life skills to the children and their families so that they can eventually take responsibility for themselves. Such strategies are effective in the long run, since they do not create dependence, and they are able to reach as many families as possible. It is important to note that Richter et al. (2004) also discredit community-based models on the basis that they tend to focus on material support and that they are conceived as poverty alleviation projects. However, the drop-in centre approach appears to be different because it has been conceptualised as a developmental social welfare principle that promotes community empowerment to take informed decisions on the implementation and evaluation of locally established initiatives (Mahlase, 2008). The developmental social welfare principle encourages the
capacitating of local people to engage in income generating initiatives, the provision of relevant skills and useful knowledge to address immediate and real needs (ibid.).

What is evident is that drop-in centres are designed to provide a holistic service aimed at reducing the vulnerability of HIV/AIDS-affected and -infected children. What is also emerging is that HIV/AIDS is a health and social crisis that cannot be understood or tackled in isolation. It requires a multi-sectoral approach to affect effective intervention. Although this article is not looking at preventative measures, it goes without saying that a similar multi-pronged approach is necessary to curb the persistent spread of this disease.

Developing countries, such as South Africa, have a number of problems that hinder the provisioning of care to HIV/AIDS orphans. One of them is the sustainability of projects that support vulnerable children. However, since the majority of personnel in the drop-in centre model are from the community it services, it should not be threatened by sustainability challenges. At the very least, drop-in centres take a more realistic and sustainable approach to the problem of supporting orphaned children. What could be a problem, though, is if these centres fail to establish links, or partnerships with schools, as this would mean they are not providing appropriate support that would reduce chances of children dropping out. This applies to all other service providers like the Departments of Home Affairs (for birth certificates and ID documents) and Social Development (for child-support grants and disability grants) who are essential to the process of dealing with the issues associated with child deprivation. In establishing these networks, a potential challenge to cripple drop-in centres could be the red tape involved in getting government support in the form of funds or services.

Conclusion
The constant increase in the number of orphans in the face of insufficient grants, lack of trust, and inadequate resources, poses serious challenges to the proper care of orphaned children. At the same time, it points to the need to strengthen community-based projects to support existing extended family kinship. In communities where there are no orphanages, and where Western adoption is not an option, the drop-in centre seems to be the only viable strategy to provide meaningful care for children who would otherwise find themselves on the streets.

What has emerged from this literature survey is that the success of drop-in centres depends on the collaboration of various service providers, such as the Departments of Home Affairs, Health, Education, and Social Development. The Memorandum of Understanding (MoU) between these departments must be clearly communicated to all employees to ensure that they are all aware of their role in making this partnership work, so as to benefit vulnerable children and their communities as much as possible. The next step is to interrogate the experiences of children who are beneficiaries of this scheme with the intention to establish the programmes followed and the successes and challenges experienced, if any.
Photo 2: Children playing at Sithabile drop-in centre, eastern Gauteng. (http://www.sithabile.com/life%20in%20the%20centre/index)

References


Child-caregiver attachment, self-evaluation and cognitive development in a group of pre-school children

Abstract
Primary attachment relationships have an enormous influence on later cognitive development, socio-emotional development and psychological health. Up to date, no research explored the correlations between the quality of the child-caregiver attachment relationship (AQ), self-evaluation (SE), and cognitive development (CD) of five-year-old pre-school children. In accordance, the aim of this study was to explore the correlation between these three variables. Ten Afrikaans speaking mother-child dyads from white, two parent, first marriage families participated. Participants were assessed with the Pictorial Self-Evaluation Scale (PSES), The Observed Attachment Behavior Q-set (AQS), and The Griffiths Mental Development Scales; Extended Revised (GMDS-ER) in a single study in a South African context. Results indicate that a positive, medium to high practical significant correlations do exist between the reliabilities. However, because of the small number of infants tested, it was difficult in this initial sample to draw firm conclusions about the statistical significance of the results. Nonetheless the results obtained in this pilot study are very encouraging and holds great value for further investigation.

Keywords: attachment, early childhood, development, self-evaluation
Introduction

Since the inception of Attachment theory in the 1950s the theory has been open-ended and subject to revision and/or extension (Brisch, 2002; Goldberg, 2000). As Bowlby (1969/1982: 313) stated “attachment theory is still growing: its potential and limitations remain unknown.” Attachment theory now combines different contributions from ethology (Ainsworth & Bowlby, 1991; Bowlby, 1969/1982; 1979/2005), developmental psychology (Bowlby, 1988/2005; Brisch, 2002; Bronfenbrenner, 1986; Kail & Cavanaugh, 2010; Marvin & Britner, 2008; Schore, 2001; Sroufe, Carlson, Levy, & Egeland, 1999), systems theory (Bronfenbrenner, 1986; Diamond, Diamond, & Hogue, 2007; Marvin & Stewart, 2008; O’Connor & Croft, 2001), object-relations theory (Ainsworth, 1969), evolutionary psychology (Bakermans-Kranenburg & van IJzendoorn, 2007; Marvin & Britner, 2008; O’Connor & Croft, 2001), cognitive information theory (Bowlby, 1969/1982; Johnson, Dweck, Chen, Stern, Ok, & Barth, 2010) and psychoanalysis (Bowlby, 1988/2005; Bretherton & Munholland, 2008) to name a few. The contributions of these fields is as follows: ethology emphasis e the critical developmental issue, that humans have pre-adapted characteristics that predispose them to form attachment in order to survive at each development point; developmental psychology, amongst other things, opened attachment research up to developmental processes and how these processes contribute to children’s behaviour in the attachment relationship(s); systems theory drawn attention to regulatory, environmental, biological, and exploratory systems for expanding the scope of attachment theory and research and emphasising that no individual can be understood outside the context in which they function; object-relations theory made its contribution through the theory of interpersonal relatedness, concerned with the crucial role played by the self and object representations in the conduct of close human relationships; evolutionary psychology made its impact through highlighting the biological bases of attachment behaviour; psychoanalysis contributed by increasingly emphasising the quality of significant early relationships since they are seen to represent the prototype for later interpersonal relationships and to provide the context for the emergence of the self; and cognitive informational theory which propose that the organisation of the attachment behavioural system involves cognitive components, e.g. mental representations of the attachment figure, the self and others. Attachment theory has come to contribute considerably to the understanding of the importance of the quality of the child-caregiver relationship, and its influence on/or relation to numerous other factors’ (of which the explanation of over extends the scope of this research) throughout the individual’s life cycle, and more specifically, in the shaping of the child (Schore & Schore, 2008). Children are born with an innate disposition to display attachment behaviour due to the fact that the child is dependent on a nurturer for safety and nurturance (Bowlby, 1969/1982). Typically, preferred attachment appears in the latter part of the first year of life (Boris et al., 2005). To be attached to someone means that one is

strongly disposed to seek proximity to and contact with a specific figure and to do so in certain situations, notably when you are frightened, tired or ill (Bowlby, 1969/1982: 371).
This organisation of behaviour is known as ‘attachment behaviour’ and “refers to any of the various forms of behaviour that a child commonly engages in, to attain and/or maintain a desired proximity” (Bowlby, 1969/1982: 371). From an evolutionary based perspective, infants cannot survive without being protected and provided for and this automatically leads to certain goal-directed behaviour by the child for survival (e.g. crying when distressed to obtain the caregiver’s attention) (Bowlby, 1969/1982). Children, therefore, obtain a state of homeostasis through their behaviour. Reflecting on the last statement, the attachment system (of the child) can be seen as a biological system, regulating itself to obtain a homeostatic equilibrium status and flexibly adjusting in changing circumstances (De Schipper, Stolk, & Schuengel, 2006; Schore & Schore, 2008). In 1951 Bowlby concluded that normal development is promoted by a warm, intimate and lasting relationship between a young child and his or her caregiver. Bowlby claimed that this relationship has important implications for children’s concurrent and later social development and, therefore, later relationships (Bowlby, 1969/1982, 1973/1991; Marvin & Britner, 2008). Patterns of attachment behaviour evolve with development (Ainsworth, 1993; Boris, Aoki, & Zeanah, 1999; Marvin & Stewart, 1993; Schneider-Rosen, 1993).

After infancy attachment manifests in different ways, but major concepts such as: internal working models (the inner organisations of attachment), the secure base concept (the starting point for exploration), and the organisation of behaviour in context, continue their value in the view of continuity and change in later development (Ainsworth, 1993). To understand attachment after infancy one has to take into account the rapidly expanding cognitive and affective processes of the developing child and how these interlock with the environmental changes in the child’s life. Expansion of attachment theory and other influential factors are of great importance if influences on the individual’s life cycle are to be understood.

In line with Bowlby’s theory of attachment, Schore and Schore (2008) argue that attachment theory has shifted to a regulatory theory, based on an interdisciplinary development model. Expansion of the attachment theory in this way makes it more clinically relevant, allowing the comprehension and treatment of disorders of the self and affect regulation more effective (Schore & Schore, 2008).

In the light of contributing to this widely expanded field, the current study’s aim was to examine correlations amongst the quality of the child-caregiver attachment relationship (henceforth denoted as AQ), self-evaluation (henceforth denoted as SE), and cognitive development (henceforth denoted as CD) of the child in a sample of 10 child-caregiver dyads in white, two parent, first marriage families. This study wants to emphasise the importance of high quality primary attachment relationships in infancy, because of its enormous influence on later cognitive development, socio-emotional development and psychological health (DeMuller, Denham, Schmidt, & Mitchell, 2000; Cicchetti, Cummings, Greenberg, & Marvin, 1993; Greenberg, Cicchetti, & Cummings, 1990; Mikulincer & Shaver, 2007; Thompson, 2008). Ultimately also to contribute to service professionals’ knowledge in understanding the importance of the relationship
between a child and his/her caretaker relating to the level of cognitive development and IWM’s of the self. Previous studies have shown that relationships amongst these variables do exist, but no literature could be found combining these variables in a single study. The purpose of this study is to extend prior research in two ways. Firstly, combining these variables in a single study and to explore the correlations amongst them and secondly, by conducting the research in a South African context since research in this domain is almost non-existent.

Before discussing the main variables (namely the quality of child-caregiver attachment relationship, the representation of the self and cognitive development) of this study, it is of utmost importance to discuss an underlying concept of great value to the formation of the attachment relationship.

**Internal working models in attachment relationships**

Bowlby centred his ideas of attachment on the concept of ‘internal working models’ (henceforth denoted as IWM’s) that derived from the thinking of psychoanalysis (Bretherton & Munholland, 2008; Schneider-Rosen, 1993). According to Bowlby (1969/1982), the attachment system utilises cognitive components, specifically mental representations (internal working models [IWM’s]), of the attachment figure, the self, and the environment during the child’s interaction with the primary caregiver, the child’s own actions, and the feedback the child receives from these actions (Cicchetti et al., 1993; Johnson et al., 2010). According to Cassidy (1993), these models are similar to cognitive maps (not permanent or static mental schemes, but flexible models) that permit successful navigation of an organism’s environment (Brisch, 2002; Marvin & Britner, 2008; Mennen & O’Keefe, 2005). These IWM’s contain the “early outlines of the self and how it fits into the social landscape” (Howe, 2005, p. 29). Cassidy (1993) states that the IWM’s of the self contain cognitions about one’s lovableness and worthiness. Through postulating that the attachment system utilises these cognitive components, explanations can be given of how the child’s experiences with the attachment figure come to influence the pattern of attachment the child develops (Bowlby, 1969/1982). Children inevitably extract, from their experiences with their attachment figure, expectations regarding likely behaviour of others and their own behaviour in interpersonal relating (Fairchild, 2006; Howe, 2005; Schneider-Rosen, 1993; Sroufe et al., 1999). These experienced interaction patterns (known as IWM’s) are cognitively stored by the children and influence the way children construe their experiences and, therefore, their behaviour (Ainsworth, 1993; Howe, 2005). Once internalised, these IWM’s are good guides for children’s behaviour, their success in other relationships and for constructing perceptions of themselves (Ainsworth, 1993; Burgess & MacDonald, 2004; Bretherton & Munholland, 2008; Howe, 2005; Verschueren & Marcoen, 2002). Children will, therefore, “approach new situations with certain preconceptions, behavioural biases, and interpretive tendencies” (Sroufe et al., 1999, p. 5).
The mother's availability during these experiences forms a major part of the IWM the child will store (Johnson et al., 2010; Schuengel, De Schipper, & Sterkenburg, 2003). When a child has an IWM of the attachment figure as being available, responsive and accessible when needed, a secure attachment occurs. Children are considered to be insecurely attached when they lack such a representation. Secure attachment, therefore, sets a secure base for the child, which fosters exploration, play and other social behaviour (Ainsworth & Bowlby, 1991; Bretherton & Munholland, 2008). Smooth, homeostatic integration of the child’s attachment behaviour with the attachment figure’s caregiving behaviour is a prerequisite for the successful development and operation of this secure base (Bowlby, 1969/1982). According to Marvin and Britner (2008), it is a critical component of the child’s rapidly expanding physical and social world to use the attachment figure as a secure base. These exchanges during caregiver and child interaction caused children’s IWM’s of the self to be intertwined with the ones the child held of the attachment figure (Bowlby, 1969/1982; 1973/1991; 1980). Caregivers, therefore, cannot be seen as the only determining factor of secure attachment, but children can also be seen as an active participant in constructing their own experiences (Sroufe et al., 1999).

Internal working models of infant attachment have shown to have developmental continuity (Fairchild, 2006) and according to Johnson, Dweck & Chen (2007) these representations can be traced as early as 12 months of age. With maturation and the expansion of experience beyond infancy children develop more complex and differentiated models of self, others and of relationships (Cicchetti et al., 1993), because mental states take centre stage in children's understanding of their and others’ actions only at the age of four years (Kail & Cavanaugh, 2010). As children enter the pre-school years they begin to understand that their attachment figures’ goals and motives can differ from their own (Bretherton & Munholland, 2008; Marvin & Britner, 2008). When this happens, children can assess situations and plan their behaviour within the framework of these models, therefore, changing the attachment relationship to a goal-corrected partnership (final phase of Bowlby’s proposed phases in the development of attachment) (Bowlby, 1969/1982; Johnson et al., 2010). Children are able to feel secure even when the attachment figure is not physically present, only by relying on their secure IWM’s (Bretherton & Munholland, 2008). Ultimately, these IWM’s act as filters through which the child’s perceptions of social events and expectations regarding relationships are interpreted (Cicchetti et al., 1993; Mennen & O’Keefe, 2005). These working models can be seen to “influence the overt manifestation of attachment behaviours as children grow older” (Schneider-Rosen, 1993, p. 212). The sustained influence of IWM’s after infancy is not without critique and controversy (see Johnson et al., 2010).

Quality of child-caregiver attachment relationship

The quality of the attachment relationship can be influenced by a number of factors (see Pettit, Bates, & Dodge, 1997). When considering the quality of the attachment relationship, the interrelation amongst the primary caregiver, the child and the
environmental aspects (context), e.g. high-stress households, violence, abuse, poverty, etc. (DeMuller et al., 2000; Fairchild, 2006; Mikulincer & Shaver, 2007) are of great importance. Each of these systems brings a number of influential factors, e.g. the caregiver with his/her sensitivity and responsivity, parenting style, marital quality, and quality of care; the child with his/her temperament, and sex; and the environmental aspect, e.g. a nurturing environment, life events, and family experiences (Brown, Dutton, & Cook, 2001; DeMuller et al., 2000; Dozier, Stovall, Albus, & Bates, 2001; Easterbrooks & Goldberg, 1993; Fairchild, 2006; Kail & Cavanaugh, 2010; Lyons-Ruth, Alpern, & Repaeholi, 1993; Mennen & O’Keefe, 2005; O’Connor & Croft, 2001; Schuengel & Janssen, 2006; Sroufe, 1979, 1988). These systemic factors come to influence each other in a complex interactional process that determines the quality of the attachment formed by the child. Both caregiver and child’s behaviour can only be understood when “viewed in the context of the child-mother-dyad-as-system” (Marvin & Stewart, 1993, p. 61).

Consequently one of four distinct patterns of attachment (see Fairchild, 2006; Mennen & O’Keefe, 2005) is formed, of which a secure attachment can be viewed as the style most beneficial, installing trust and confidence in children (Kail & Cavanaugh, 2010). Secure and insecure attachment is explained by De Schipper et al. (2006, p. 204) as follows:

Securely attached children flexibly use their caregivers as either a secure base to explore from when conditions are safe or as a safe haven when the child perceives the conditions as dangerous. Insecurely attached children, on the other hand, appear locked in a relationship pattern that either overemphasises independence and exploration (secure base) or dependence and proximity (safe haven).

The quality of a child’s attachment has been found to predict “adjustment in many domains, including social, psychological, behavioural and cognitive domains” (Mennen & O’Keefe, 2005, p. 578). The way in which children view themselves has been identified as one of these domains (Cassidy, 1988; Verschueren, Marcoen, & Schoefs, 1996).

**Attachment quality and representation of the self**

With the attachment relationship between the child and the primary caregiver (the attachment figure), being the first relationship children find themselves to be in, it can be believed to have a significant impact on children’s concept of the self. According to Sroufe (1988, p. 19), attachment theory makes its strongest claims on domains like “inner sense of confidence and relationships with others” and “strongly predicts that feelings of efficacy and inner worth should be related to attachment”. The self develops not in isolation but in relation to (social) interaction with the environment. One aspect of social interaction, particularly relevant to the formation of the self, is the early interaction with the attachment figure (Bowlby, 1969/1982; 1973/1991; 1980). This relationship with a significant other gives rise to feelings of the self. In early infancy this interaction can be described as an unconscious interactive regulation, which has a lifelong impact on the self (Schore & Schore, 2008).
Consistency of the caregiver’s behaviour and sensitive responsiveness gives the child some experience and knowledge about his or her ability to act for the self and how they affect others, which theoretically predicts self-esteem (Cassidy, 1993; 2008; Sander, 1976; 1977). Ainsworth (1993) explains this as follows: Children with a secure working model of their relationship with their primary caregiver are assumed to have more positive expectations regarding the caregivers’ responsiveness and availability than their insecure counterparts, which will have more negative expectations. Therefore, it is the relation between the expectations (of the child) and the actual availability and responsiveness (of the caregiver) that builds the representation of the specific attachment relationship. Having a positive self-esteem in a securely attached relationship comes as no surprise, because the children feel confident and effective as individuals (Howe, 2005).

These inner representations of the child-caregiver interactions are embodied in the cognition (as IWM’s), and are conceived as a “dynamic conception of the characteristics and the behaviour of the attachment figure toward the self (and vice versa)” (Verschueren et al., 1996: 2494). Early IWM’s of the self are encoded on an emotive/affective level (Schore & Schore, 2008) and gives the child an idea of his or her own worth and acceptability as a person in the eyes of the attachment figure (Bowlby, 1973/1991; 1979; Cassidy, 1993). Several studies indicate that a positive and strong connection between the security of the child-primary caregiver attachment representation and the positiveness of self does exist (Cassidy, 1993; Vékony, Van Aggelen-Gerrits, Van Aken, & Goudena, 2004; Verschueren & Marcoen, 1999; Verschueren et al., 1996).

What is not clear at this moment is the extent to which the quality of attachment and the global self-worth of children are related, keeping in mind the possible relation of development in this process in early childhood. Related studies that confirm an existing association/connection between the representation of the self and the representation of the attachment relationship with the primary caregiver have been conducted (Verschueren et al., 1996; Cassidy, 1988). More recent studies (on attachment) focus on the empirical evaluation of the mediational process that may explain the link between attachment security and social functioning and is regarded as high priority (Verschueren & Marcoen, 2002).

**Attachment quality and cognitive development**

Exploration of the attachment formation process (Bowlby, 1969/1982) indicated that interaction between the child and the caregiver forms part of a bigger, more complex cognitive process. Empirical literature suggests that attachment to a primary caregiver may effect different domains of a child’s development (Grossmann, Grossmann, Fremmer-Bombik, Kindler, Scheurer-Englisch & Zimmerman, 2002; Schore & Schore, 2008; Lyons-Ruth et al., 1993; Mennen & O’Keefe, 2005; Verschueren & Marcoen, 1999). According to Schore and Schore (2008) these effects already occur in the preverbal stages of development (Schore & Schore, 2008). Ainsworth (1993) pointed
out that cognitive development (after infancy) allows children to part from the primary caregiver for longer periods. According to Janssen, Schuengel and Stolk (2002), the level of a child’s cognition plays a vital role in the development of the attachment relationship and later cognitive representations.

Securely attached children are known to be more enthusiastic, persistent, exhibit more positive affect and are more effective in facing environmental challenges on their own than their insecure counterparts (Sroufe, 1979). In other words, the quality of attachment effect once openness to new information, which is important for learning (cognitive development) (Rusk & Rothbaum, 2010). Infants with disorganised attachment may have deficits in cognitive skills as these children seem to be unable to use the caregiver as a secure base for exploration (Moss, Rousseau, Parent, St-Laurent & Saintong, 1998).

Attachment research on children with mental retardation associated attachment security with measures of mental development (Schuengel & Janssen, 2006). According to van IJzendoorn, Goldberg, Kroonenberg and Frenkel (1992), children with a developmental delay are significantly more likely to be classified as insecure. Although studies conducted on animals indicated a relationship between deprivation of a maternal figure or harsh mothering and lower cognitive functioning (De Kloet, Sibug, Helmerhorst & Schmidt, 2005), interpretation of studies that associate quality of attachment and intellectual disabilities in human beings (see Rutter, O’Connor & English and Romanian Adoptees (ERA) Study Team, 2004) needs to be done with caution (Schuengel & Janssen, 2006, p. 25) indicated that relatively high cognitive competence and maternal sensitivity is strongly associated with secure attachment and that “mental development was also significantly and positively associated with AQS security”. As mentioned earlier, it is clear that both caregiver and child affect the outcome of the attachment relationship.

**Association between the self and cognitive development**

Studies about the self use a wide variety of terminology like self-esteem, self-worth, self-concept, self-competence, and self-evaluation, to name a few, is common. In the current study the focus will be on determining the child’s self-evaluation, which could easily be related to self-esteem (Brown *et al.*, 2001). Self-evaluation is a term related to self-affect and describes the value people place on themselves (Cassidy, 1993) and other people’s view of their abilities and attributes (Brown *et al.*, 2001). Self-esteem is termed global self-worth by Harter (1990), which descends to the overall value a person places on him or herself. The preceding statement makes it clear that self-evaluation can be viewed as a part of global self-worth.

Harter (1990) asserted that children under the age of eight years possess a sense of self, but do not have the cognitive ability required to verbalise it. Over time more age-appropriate methods, making use of more playful methods of assessment, have been developed to assess younger children’s self-representation (Verschueren, Buyck & Marcoen, 2001).
When considering self-worth it is necessary to consider actual functioning of the child. Children's subjective evaluation of the self/actual competence may differ from their perceived competence. This argument has been explored on both theoretical and empirical bases by several researchers (see Phillips, 1984; 1987; Schuengel, Voorman, Stolk, Dallmeijer, Vermeer & Becher, 2006; Verschueren & Marcoen, 2002). Overly optimistic views of one’s actual abilities, for whatever reason, do exist and can influence results obtained by measurements on self-worth. This issue of actual abilities will be considered in this study during the developmental assessment.

Research on intellectual disability by Janssen et al. (2002) indicated that individuals with intellectual disabilities are at risk of developing low self-esteem. According to Carens and Verschueren (2000), low self-esteem in children indicated shying away from challenges, not being proud of one’s achievements, and losing interest when frustrated. It could be argued that low self-esteem can influence intellectual ability/development in a negative way.

In summary the goal of the present study was to examine the correlations amongst AQ, SE, and CD. Expectations for this group were as follows:

1. Children with more secure attachment will score higher on global self-worth, thus arguing that the early attachment relationship between a child and a primary caregiver may have an influence on the child’s global self-worth (more secure attachment will be positively associated with more positive self-evaluation in this group).

2. In addition it was also expected that more secure attachment would be positively associated with age appropriate cognitive development in this group.

3. Furthermore that more positive self-evaluation will be positively associated with age appropriate cognitive development in this group.

Method

Participants

Families were recruited on a voluntary basis through local pre-schools and day-care centres, in Potchefstroom, Republic of South Africa, by means of an availability sampling technique (Schutt, 2006) to participate in the study. Interested families (of all races, Afrikaans and English speaking) were approached. Participants consisted of 12 child-primary caregiver (the mothers identified themselves as the primary caregiver in all the cases) dyad pairs (pairs consisted of a child and a mother) of which two dyads were excluded on grounds of non-compliance to the selection criteria (a) (Children being too old at the time of testing). The remaining participants came from white, first marriage families. Mothers (all working) had at least 12 years of education and were aged between 33 years to 47 years (Mean age = 36 years, SD = 4.88). The children ranged in ages 5 years 0 months to 5 years and 11 months (Mean age = 5 years, 6 months, SD = 3.79). Included in the study were an only child, five children being the
oldest of two, one youngest of two, two which were the youngest of three children, and one child being the third child of four children. Four children were male and six female and all were Afrikaans speaking. The children attended pre-school/day-care between 12 and 47 hours (SD = 10.60) a week. Family sizes varied between three and six members.

**Procedure**

Permission to conduct this study was granted by the Ethics Committee of the North-West University; with the ethical clearance number NWU-00034-07-S4. After obtaining the ethical clearance, child-caregiver dyads participated in two evaluation sessions at different times during the period of 11 April 2008 until 23 June 2008. Sessions were scheduled at a time considered to be best by the caregiver. Participants were assessed once only on each of the measurements (Mann, 2003).

The first evaluation at the dyad’s home began with the signing of informed consent for research participation. Consent included no foreseeable risk for participation; participant confidentiality through protection of participant identity and the research data; thorough indication of the research goals, purposes, and advantages; and that participation is of an optional nature with no consequences if terminated. All participants were treated in accordance with the Ethical Principles of Psychologist and Code of Conduct (APA, 1992; 2001) and the ethical standards of the SRCD (Society for Research in Child Development [SRCD], 2007). After consent was obtained, demographic data were gathered from the primary caregiver. At the same time the Afrikaans version5 (version of their choice) of the PSES was administered to the child (in absence of the primary caregiver). The page containing the pictures is placed in front of the child. A short description is given about the child in the picture after which the child has to indicate which is more like him or her. After a picture is chosen the other picture is closed and the child is asked to what degree he or she is like the child in the chosen picture. To make answering easier, the response categories were visualised as circles underneath the picture of increasing size, with the small circle representing ‘sometimes’ and the larger circle representing ‘hardly ever’. The visit was concluded by the AQS observation and videotaping. The AQS observation was a once off video taping at the dyads home for a period of approximately two hours. The primary caregivers were encouraged to go about their usual activities and to treat the home visitor as they would any other visitor. A number of toys (unknown to the child), provided by the observer, were included for play in the last half hour of observation to obtain a clear picture of the child’s orientation towards and interactions with the primary caregiver. Additional reasons for including these toys were to keep the child busy and keep the visit enjoyable. The observer completed sorting and scoring of the items on the same day after watching the tapes. The 90 cards (each with their own rationale (Waters, 1987)) are sorted into nine 10-card piles, from most to least descriptive for the observed dyad. Examples of behaviours described on a single card include, “Child readily shares with mother or lets her hold things if she asks to” and “Runs to mother with a shy smile when new people visit the home”. Scores
obtained by the Q-sorter (a computerised sorting and scoring programme) (Dekker & Schuengel, 2003-2004) range from –1.0 to +1.0. The higher the score the more secure the attachment relationship. Security scores were computed by correlating the Q-sort descriptions of an individual with the 90-item criterion Q-sort composite description of a “hypothetically most secure child” (Waters & Dean, 1985). Due to the lack of trained observers in South Africa, inter-observer reliability scores could not be obtained for this study.

The second evaluation occurred in a standardised testing environment as described in the administration manual of the GMDS-ER (Luiz, Barnard et al., 2006). The visit was a two-hour assessment on cognitive development with the child. Short breaks and knowledgeable alternation between the subscales precluded the possibility of boredom and fatigue. All mothers decided to be absent during the assessment period. Manual scoring took place immediately after administration. A written report of the results was made available to all participating parties.

Measurements

Assessment of the self

The Pictorial Self-Evaluation Scale (henceforth denoted as PSES) by Verschueren and Marcoen (1993a) was designed to measure global self-worth in children from 5-7 years of age. Measuring self-concept in children younger than eight years of age has been a difficult task, because of certain stumbling blocks, for example the unresolved questions regarding the nature of self-judgment in early childhood (Cassidy, 1988; 1990) or the ideas about the cognitive limitations of young children to construct a self-esteem or self-worth (Verschueren et al., 2001). Until recently researchers, especially Harter (1990) asserted that children under the age of 8 years possess a sense of self, but do not have the cognitive ability required to verbalise it. Over time more age-appropriate methods, making use of more playful methods of assessment, have been developed to assess younger children’s self-representation (Harter & Pike, 1984; Verschueren et al., 2001). One of the scales central to measuring global self-worth in children, according to Gadeyne, Ghesquière, Onghena and Verschueren (2000), is the Pictorial self-evaluation scale (Zelfbelevingsschaal voor jonge kinderen) that is simple and less time consuming. This pictorial scale taps into children’s global self-worth through several questions based on specific domains of functioning (Gadeyne et al., 2000). By using this more age appropriate method of measurement makes this scale suitable for use in early childhood.

This rating scale consists of six items (e.g. “This girl/boy does not like her/himself that much”). Items are based on the General self-worth subscale of Harter’s Perceived Competence Scale (Harter, 1982) and the Hand Puppet Interview of Cassidy (see Verschueren & Marcoen, 1993b). Each item has two pictures; representative of the child’s global self-worth of a specific domain of the child’s functioning (Gadeyne et al., 2000). Each item is scored on a 4-point scale of which the sum of the six items would
be representative of the global self-worth as reported by the child (Verschueren & Marcoen, 1993b). The English version of the PSES was translated to Afrikaans by a bilingual individual and then back-translated to English where after the original English version were compared with the back-translation and appropriate changes were made. Cronbach’s alpha of 0.82 was obtained by the developers of the scale, indicating internal consistency for the measure; whereas the test-retest reliability was .38 (p < = .001) and went up to .50 (p < = .001) in a study done by Verschueren et al. (1996) with ninety-five kindergartners aged between 51 and 76 months. Cronbach’s alpha and test-retest reliability could not be calculated for this study as a result of the small number of participants relative to the number of items in the measurement (Noar, 2003). The scale was not validated in the South African context due to the lack of participants and other relevant scales.

**Assessment of attachment security**

The Observed Attachment Behaviour Q-set (Version 3.0) (henceforth denoted as AQS) (Waters & Deane, 1985) is a standardised method for the naturalistic observation of attachment behaviour between child-caregiver dyads at home or in public places. The AQS consists of 90-items printed on cards that were developed to describe secure base behaviour (Vaughn & Waters, 1990) of children from age 10 months to 72 months (10 months to 6 years) (Fairchild, 2006).

According to van IJzendoorn, Vereijken, Bakermans-Kranenburg and Riksen-Walraven (2004) and Fairchild (2006), the AQS is a valid instrument to assess AQ among the dimension of security-insecurity. Inter-observer reliability indicated a range of scores from .72 to .95/7 respectively, in several other studies (Fairchild, 2006; Solomon & George, 2008). Due to the lack of trained observers in South Africa, inter-observer reliability scores could not be obtained for this study. The researcher was trained in the Netherlands and at completion a reliability score of 85% were achieved by the researcher. According to Fairchild (2006) professionally trained observers increase reliability and validity of results.

**Assessment of cognitive development**

The Griffiths Mental Development Scales – Extended Revised (henceforth denoted as GMDS-ER) (for testing babies and young children from birth to eight years) (Luiz, Barnard et al., 2006; Luiz, Faragher et al., 2006) obtains the child’s developmental level (Mental Age (MA)) at the time of testing. The scale for the two to eight year olds measures six domains of functioning, each of which is assessed on a separate subscale. These subscales are; A: Locomotor; B: Personal-Social; C: Language; D: Eye and Hand Coordination; E: Performance, and F: Practical Reasoning. Subscales are separate and complete in themselves and allow assessors to assess the child’s development in gross motor skills (A); activities of daily living, interaction and independence (B); receptive and expressive language abilities (C); fine motor skills, manual adroitness and visual
monitoring skills (D); visuospatial skills (E); and the child's level of general and specific cognitive abilities to problem solving. Each subscale has a number of items that are administered, observed and scored. Scoring can take place manually or by using a computerised scoring programme (Luiz, Foxcroft & Stewart, 2001).

After revision the GMDS-ER showed continuing validity over time and across cultures (Luiz et al., 2001; Luiz, Barnard et al., 2006; Luiz, Faragher et al., 2006), but further exploration is needed (Luiz, Foxcroft & Povey, 2006). Inter-observer reliability for MA scores was found to be .97 (intraclass r) by Grantham-McGregor, Stewart and Powell (1991). According to Hogrefe (2008), Cronbach’s alpha was calculated for each of the scales, which included all of the items in each of the scales, and exceeded a minimum value of .70 (also see Luiz, Faragher et al., 2006).

An accredited training course by the ARICD (Association for Research in Infants and Child Development) in the administration of the scales was completed by the researcher (Fairchild, 2006).

Data analysis
To manage and analyse the data obtained in the above-mentioned methods the statistical package, SPSS (Version 15.0) for Windows, was used. To examine correlation between AQ, SE and CD Spearman’s rank-order coefficient (Bless & Kathuria, 1998) were computed on the security scores of the AQS, the average scores of the PSES, and the age equivalent scores obtained from the GMDS-ER. Further correlation analysis was conducted between the three measurements and each of the GMDS-ER subscales scores. Correlations were interpreted and reported in terms of both statistical and practical significance.

Reporting statistical significance of results in seclusion is under escalating criticism (both positive and negative) (Thompson, 1997; 2001; 2002a; 2002b). Statistical significance is not sufficient to evaluate the worth of all research (Thompson, 2002b). Practical significant indexes, called effect sizes, can be reported through various measures (Steyn, 2006; Trusty, Thompson & Petrocelli, 2004). Literature proposes one of these measures to be based on Spearman’s rank correlation (see Ellis & Steyn, 2007). According to Thompson (2002b, p. 65), it is critical to report effect sizes, “particularly [...] because statistical tests are so heavily influenced by sample size.” More recently the APA (2001, p. 25), publication manual (5th ed.) emphasised that “it is almost always necessary to include some index of effect size or strength of relationship in your result section.”

Results
Descriptive statistics for the AQS; PSES; GMDS-ER with the six subscales, are presented in Table 1.
Table 1: Descriptive Statistics (n = 10) for the AQS, PSES, GMDS-TR with 6 subscales

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>Range</th>
<th>Skewness</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>Minimum</td>
<td>Maximum</td>
</tr>
<tr>
<td>AQS</td>
<td>.24</td>
<td>.21</td>
<td>-.19</td>
<td>.52</td>
</tr>
<tr>
<td>PSES</td>
<td>3.61</td>
<td>.34</td>
<td>3.00</td>
<td>4.20</td>
</tr>
<tr>
<td>GMDS-TR</td>
<td>64.95</td>
<td>7.50</td>
<td>54.00</td>
<td>77.00</td>
</tr>
<tr>
<td>GMDS-ER subscales</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Locomotor</td>
<td>65.80</td>
<td>9.64</td>
<td>42.50</td>
<td>79.50</td>
</tr>
<tr>
<td>B. Personal/Social</td>
<td>65.65</td>
<td>9.87</td>
<td>52.50</td>
<td>80.50</td>
</tr>
<tr>
<td>C. Language</td>
<td>66.65</td>
<td>7.24</td>
<td>54.50</td>
<td>79.50</td>
</tr>
<tr>
<td>D. Eye-hand coordination</td>
<td>58.25</td>
<td>5.75</td>
<td>50.00</td>
<td>66.50</td>
</tr>
<tr>
<td>E. Performance</td>
<td>77.40</td>
<td>17.77</td>
<td>56.00</td>
<td>96.00</td>
</tr>
<tr>
<td>F. Practical reasoning</td>
<td>62.70</td>
<td>5.92</td>
<td>53.00</td>
<td>73.00</td>
</tr>
</tbody>
</table>

The central tendency (M = .24) of the AQS security scores is high and the magnitude of skewness is in a negative direction. Security scores show the largest range between scores that could have influenced the mean score of the measurement. According to Bless and Kathuria (1998), extreme high or low scores can affect the mean score. Both the PSES and GMDS-ER scores show a positive direction of skewness, indicating the relatedness between self-evaluation and cognitive development for this group. Ranges of the scores for these two measurements are small with means of 3.61 and 64.95 respectively.

Subscales A, D, and E, of the GMDS-ER, shows a negative direction in the distribution of scores obtained for the 10 participants. Scores of subscales B, C, and F show positive direction of skewness. The preceding indicates that the data for the participants is not equally distributed; therefore Spearman’s correlation coefficient was calculated. The central tendencies of scores tend to be moderate for all of the subscales except for the Locomotor subscale. Locomotor scores were affected by extremes in the measurement results. Eye and Hand Coordination show the smallest variation between scores, whereas the Performance subscale shows the largest variation.
Table 2: Spearman’s Correlation ($r_s$): Inter-scale correlations

<table>
<thead>
<tr>
<th></th>
<th>AQS</th>
<th>PSES</th>
<th>GMDS-TR</th>
</tr>
</thead>
<tbody>
<tr>
<td>AQS</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSES</td>
<td>.40†</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>GMDS-TR</td>
<td>.46†</td>
<td>.61†</td>
<td>1.00</td>
</tr>
<tr>
<td>GMDS-ER subscales</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Locomotor</td>
<td>.31</td>
<td>.35</td>
<td>.55†</td>
</tr>
<tr>
<td>B. Personal/Social</td>
<td>.42†</td>
<td>.37</td>
<td>.80**</td>
</tr>
<tr>
<td>C. Language</td>
<td>.68*</td>
<td>.64†</td>
<td>.77**</td>
</tr>
<tr>
<td>D. Eye-hand coordination</td>
<td>.14</td>
<td>.49†</td>
<td>.84**</td>
</tr>
<tr>
<td>E. Performance</td>
<td>.29</td>
<td>.40†</td>
<td>.90**</td>
</tr>
<tr>
<td>F. Practical reasoning</td>
<td>.54†</td>
<td>.56†</td>
<td>.95**</td>
</tr>
</tbody>
</table>

Note: AQS = attachment security scores; PSES = average self-evaluation scores; GMDS-ER = age equivalent mental score.
† $r_s \approx .5$
* $p < .05$
** $p < .01$

Table 2 shows that although the correlations of the measurements are not statistically significant, practical significant associations are indicated for this group of participants. The small sample size may definitely have been a factor in the nature of findings obtained (Thompson, 2002b; Rosenthal, Rosnow & Rubin, 2000). Rosenthal et al. (2000) advised that one might make a serious mistake when concluding results amounts to nothing, when confronted with a non-significant $p$ and a large effect size in the case of small samples. Results, henceforth, will be discussed respectively according to practical significance (†) at $r_s = .5$ (according to Cohen’s (1990) effect size guidelines 0.1, 0.3, 0.5; also see Field, 2005; Steyn, 2006) and statistical significance at the .05 level (2-tailed) (*) and the .01 level (2-tailed) (**).

**Correlation between Attachment Quality (AQ) and Self-Evaluation (SE) (see Table 2)**

Correlation between the children’s attachment quality (AQS scores) and their self-evaluation (PSES averages) show a practically significant correlation ($r_s = .40, p = .24$) for these 10 participants.

**Correlation between Attachment Quality (AQ) and Cognitive Development (CD) (see Table 2)**

After computing Spearman’s rank-order coefficient on the security scores of the AQS and the Age equivalent scores of the GMDS-ER, for examination of the correlation between AQ and CD, results showed a practically significant ($r_s = .46, p = .17$) relationship between variables. Effect sizes reflect that the correlation is practically significant for the 10 dyad pairs.
Correlation between Self-Evaluation (SE) and Cognitive Development (CD) (see Table 2)

Examination of the correlation, Spearman's rank-order coefficient, between the children's self-evaluation (SE) and their cognitive development (CD) indicated a large effect ($r_s = .61, p = .06$). For all practical purposes the effect sizes indicate that the correlation between the average scores of the PSES and the Age equivalent scores of the GMDS-ER are significant for the 10 children in this study.

Correlation between Attachment Quality (AQ) and the GMDS-ER Subscales (see Table 2)

The quality of child-caregiver relationship (AQ) correlated with several of the GMDS-ER subscales. The Personal/Social subscale shows a practically significant correlation ($r_s = .42, p = .22$) towards attachment quality (AQS) scores. Correlation between AQS scores and the Language subscale show statistical significance ($r_s = .68$) at the .05 level. For all practical purposes the effect sizes indicate that the correlation between the security scores of the AQS and Subscale F (Practical Reasoning) ($r_s = .54, p = .10$) are significant.

Correlation between Self-Evaluation (SE) and the GMDS-ER Subscales (see Table 2)

The third subscale (Language) of the GMDS-ER indicates statistical significant correlation ($r_s = .64, p < .05$) with the PSES averages (SE). For all practical purposes the effect sizes of the Eye and Hand Coordination-, Performance-, and the Practical Reasoning subscale show significance, $r_s = .49$ ($p = .14$); $r_s = .40$ ($p = .24$); and $r_s = .56$ ($p = .09$) respectively, in their correlation with the average scores of the PSES (SE) for the 10 children.

Correlation between Cognitive Development (CD) and the GMDS-ER Subscales (see Table 2)

Subscale A (Locomotor) of the GMDS-ER is the only subscale that showed practical significant correlations ($r_s = .55, p = .10$) with the GMDS-ER age equivalent scores (CD). Correlation between CD (GMDS-ER age equivalent scores) and the remaining GMDS-ER subscales show statistical significant correlations at a .01 level. Effect sizes are as follows; Personal/Social subscale ($r_s = .80$), Language subscale ($r_s = .77$), Eye and Hand Coordination subscale ($r_s = .84$), Performance subscale ($r_s = .90$), Practical Reasoning subscale ($r_s = .95$) for the 10 participants.

Discussion

As intended by the present study, existence of positive correlations between attachment quality, self-evaluation and cognitive development were confirmed. Correlations between the measurements did not show any statistical significance, but an overall medium to large practical significance was obtained for these participants. When considering results, one needs to keep in mind the individual and the context in which that individual functions. Results can never be viewed in isolation. Marvin and Stewart (1993, p. 34) formulate it as “a whole adds the property of relationship among the parts.” There is never one single cause for an effect; it’s usually far more complex.
In this study more secure attachment relationships, between the children and their mothers, have been found to positively correlate with higher global self-worth of the children. Similar results have been found, but no study combined these three important variables (Cassidy, 1988; Easterbrooks & Goldberg, 1993; Verschueren & Marcoen, 1999; Verschueren et al., 1996). Establishing a secure attachment relationship with the mother has an effect on how children evaluate themselves. In previous studies done by Verschueren and Marcoen (1999; 2002) positiveness of self and global self-worth showed the highest correlation with the security to the mother. Even though clarity in connection with the development of the self before age eight is not yet established (Carens & Verschueren, 2000), Bowlby (1969/1982) suggested that a global sense of worth develops in conjunction with the early child-mother relationship, based on established IWM’s of their daily experiences. Being able to use the mother as a secure base for exploration increase one’s own level of competency (Marvin & Stewart, 1993) and could contribute to the representation of the self (Verschueren & Marcoen, 1999). The earliest relationships and environments of individuals therefore, “provide the context for the emergence of self” (Schneider-Rosen, 1993, p. 187). This early relationship is, therefore, important for concurrent and later adaptation (Marvin & Stewart, 1993) and self-esteem development (Brown et al., 2001).

As expected, this study indicated that a more secure attachment correlate with age appropriate cognitive development. The quality of the relationship formed between child and mother has implications for later development (Grossmann et al., 2002; Verschueren & Marcoen, 1999). During developmental transitions of children the attachment relationship may be temporarily disrupted (Ainsworth, 1993) with a decrease in security as a result (Marvin & Stewart, 1993). Homeostasis needs to be established for the relationship to stabilise again. Although attachment behaviour changes with development, IWM’s of the early child-mother relationship are still at play to establish proximity and contact (Marvin & Stewart, 1993) despite situational variation (Cassidy, 1993). Positive IWM’s and the ability to still use the primary caregiver as a secure base promote exploration, autonomy, social activity and the mastering of these new developmental tasks (Easterbrooks & Goldberg, 1993; Kail & Cavanaugh, 2010; Schneider-Rosen, 1993). The inability to do so will predict less optimal functioning during these periods of change (Easterbrooks & Goldberg, 1993). According to Sroufe (1979, p. 835) “exploration of the new has adaptive advantage.” Children with a secure attachment move further away from their primary caregiver; communicate over larger distances; (Fairchild, 2006; Schneider-Rosen, 1993) and start to communicate their goals that put them in a goal-corrected relationship with their attachment figure (Bowlby, 1969/1982). Attachment theory predicts that “the quality of attachment is related to the child’s cognitive and language development” (Verschueren & Marcoen, 1999, p. 197). With the latter in mind it is clear why the Language subscale of the GMDS-ER showed such a strong correlation with more secure child-mother attachment relationship scores. Further positive correlations were found between the quality of attachment scores and the Personal/Social- and the Practical Reasoning subscale. Attachment theory implies that security of the attachment relationship
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has important implications in concurrent and later social functioning (Verschueren & Marcoen, 2002). Establishing an attachment relationship is a critical socio-emotional task (during infancy) that creates a basis for competence, effective functioning and successful transition through the different developmental tasks in the socio-emotional and cognitive domains (Bowlby, 1969/1982; 1973/1991; 1980; Easterbrooks & Goldberg, 1993). Going to pre-school, for example, with positive IWM’s of a secure attachment relationship can increase pre-schooler’s ability to use their teacher as a subordinate attachment figure which will improve development of alternative skills because the child is able to operate independently from the mother for extended periods of time (Marvin & Stewart, 1993).

While controlling for perceived competence, a positive relation between self-evaluation and cognitive development was obtained. According to Cassidy (1993, p. 87), “self-related beliefs and feelings play a key role in development.” This group’s evaluation of their abilities and attributes (Brown et al., 2001) were found to be an indicator of their cognitive ability at the time of evaluation. Thinking about oneself in more positive ways, therefore, has a positive influence on cognitive development. The PSES scores correlated with several of the GMDS-ER subscales. The Language subscale is the most intellectual subscale in the GMDS-ER (Luiz, Barnard et al., 2006). The significant correlation between the Language subscale and the self-evaluation scores confirms Harter’s (1990) claim that children require cognitive ability to verbalise their sense of self. According to Schneider-Rosen (1993), language and the expression thereof are of great importance in relationships and play a role in the feelings about the self and others in these relationships. Correlations between the PSES scores and the GMDS-ER subscales; Eye and Hand Coordination and Performance, could be explained by the fact that pre-schoolers define themselves with respect to their physical characteristics (which are observable and concrete), their preferences and their competencies (Kail & Cavanaugh, 2010). Viewing themselves as valuable and worthwhile (Cassidy, 1993), pre-school children may start to believe more in their own ability to make plans and solve real-life situations (Kail & Cavanaugh, 2010). This practical ability to act for the self may explain the correlation between PSES scores and the Practical Reasoning subscale. Although statistical significant scores were not obtained in the correlation between these reliabilities, this study demonstrates potential in reporting effect sizes.

It is clear that these variables have an influence on each other since infancy and therefore remain of importance when considering preventative work concerning attachment and development (on multiple levels, for example the formation of the self).

Limitations and suggestions for further research

The first limitation of this study would be the small number of participants. Future research with a larger sample size (n > 30) holds great potential. Secondly, the results of this study cannot be generalized to other five-year-olds, for participants did not represent a true random sample of this population in Potchefstroom, South Africa.
The third limitation of the study was that global self-worth was measured via self-reported methods which may have limited the truthfulness of the answers based on the uncertainty about children's cognitive ability to verbalise their sense of self (Harter, 1990). Future researchers can benefit from including another self-worth measurement, completed by the parents or a teacher, for triangulation purposes. Another limitation was the lack of trained AQS individuals in South Africa, which compromised inter-observer reliability. Comparative discussions, of the results, were also limited due to the lack of attachment studies conducted in a South African context. Finally, future research on the subscales of the GMDS-ER, in connection with self-evaluation and attachment quality, will contribute to a greater understanding of these initial findings.

Acknowledgement

A sincere note of gratitude goes out to Paula Sterkenburg and the Vrije Universiteit Amsterdam who created the opportunity for the first author to acquire the skills (at the Department of Clinical Child and Family Studies, VU University Amsterdam) needed to administer The Observed Attachment Behaviour Q-set. Gratitude also go to Paula Sterkenburg, Carlo Schuengel and Mirjam Oosterman for their assistance and input towards the initiation of this pilot study.

Endnotes

1. Expansion on the different factors over extends the scope of this research. This article will focus only on three distinctive factors, namely; the quality of the attachment, self-evaluation and cognitive development.

2. Identification criteria for primary caregiver were as follows: When the child is for instance (1) tired, (2) scared, (3) hungry or (4) hurt to which parent will he/she go first?

3. After infancy there is a decrease in physical proximity and contact. Older children “increasingly organise their intimate interactions with their attachment figures on the basis of physical orientation, eye contact, nonverbal expressions, and affect, as well as conversations about personal matters” (Marvin & Britner, 2008, p. 57).

4. Selection criteria were as follows: (a) The pre-school child must be between 60 and 72 months old at the time of testing; (b) The pre-school child lives with his/her biological parents since birth; (c) The pre-school child’s mother tongue is Afrikaans or English.

5. The English version of the PSES was translated to Afrikaans by a bilingual individual and then back-translated to English where after the original English version were compared with the back-translation and appropriate changes were made. The final versions were edited before it was used.

References


The educational and psychological support of educators to include learners from child-headed homes in urban classrooms

Abstract
The purpose of this study was to comprehensively capture teachers' classroom experiences and establish what educational and psychological support would help them as they were trying to include learners from child-headed homes in their classrooms and schools. The sample of teachers from two different Gauteng districts included members from the school management and school-based support teams. Data were collected through individual and focus group interviews, in addition to collages made by the teachers, survey questionnaires in which they were respondents, observations of their practice and concomitant field notes. Firstly, the findings indicate that teachers are not always aware that learner's are orphans or head their own households. They do not know how to assist learners in coping with the effects of orphanhood, which include: increased learning difficulties, incomplete schoolwork, failure to participate, school absenteeism, hunger, concentration difficulties, signs of sexual abuse, and accelerated adulthood. The efforts of teachers to create supportive learning environments include; impartial treatment, learning support provision, accessing support services and meeting their learners' basic needs for food, clothing, love, belonging, reassurance, motivation and encouragement.

Keywords: child-headed families, educators, educational and psychological support
Introduction and background

The phenomenon of child headed families has gained ever-increasing attention, due to the escalating number of children orphaned as a result of the HIV/AIDS pandemic (Meier, 2003, p. 75; UNAIDS, 2002, July). Learners from child-headed homes (hence referred to as LCHH) are more likely to be in the majority of South African classrooms in future. While these learners are known to have attributes that enable them to achieve (Shilubana & Kok, 2004), along with various coping strategies (Ebersohn & Eloff, 2002; Kinghorn & Kelly, 2005), one cannot deny that they face countless risks and challenges as orphans (Ebersohn & Eloff, 2003; Sloth-Nielsen, 2002), and as a result are prone to numerous barriers to learning (Evans, 2002) impacting on their ability to benefit from education (Bennell, 2005; Nesengani, 2006; Simikins, 2002).

Currently considered notions within educational psychology research prize educators as the most likely “forms of adult support,” part of “community-based orphan support” networks for LCHH (Foster, 2000, p. 61; Shilubana & Kok, 2004, p. 105; Leatham, 2005, p. 95), and hail schools as well-positioned social mechanisms with the most potential to respond to the needs of LCHH (De Jong, 2000; Engelbrecht, 2001; Nastasi, 2000; Sheridan & Gutkin, 2000). While these ideas are noble, especially when viewed within the context of developing health-promoting schools to further the philosophical ideals of inclusive education, we believe that it cannot be assumed that schools and educators will be able to respond to these expectations. The reason for this is that this can create an insurmountable burden of care, and when viewed alongside the existing challenges within the teaching profession, we argue that schools and educators, more especially, will need appropriate forms of support to meet these expectations.

As educators are on the front line battling this social concern, the focus of this study is on highlighting the support that they may require when working with LCHH, so that the Department of Education, district and school-based support teams, as well as potential support service providers, such as school counsellors, educational psychologists and social workers can respond appropriately.

Theoretical perspectives of the study

In order to explore ideas that educators could be additionally affected by the unique challenges, which learners from child-headed homes face, and that educators could, for this reason, be unprepared for the distinctive teaching scenarios that confront them, and may thus need support, the researchers chose to work within a constructivist/interpretivist framework (joint term used in Henning, Van Rensburg & Smit, 2004, p. 19). By placing educators at the centre of Bronfenbrenner’s Bio-Ecological-Systems model (Landsberg, 2005, p. 10) a more holistic and systematic view of the behaviour of educators were obtained. In this way insights into educators and their development from an intra-personal level were gained, whilst simultaneously illustrating the interdependent and interacting systems and contextual settings within which they develop and function. In adopting this broader conceptualisation framework, one
is able to give consideration as to how current educational psychology thinking about inclusive education (Engelbrecht, Green, Naicker & Engelbrecht, 2001; Eloff & Ebersohn, 2003; Engelbrecht, Swart & Eloff, n.d.), whole school development (Donald, Lazarus & Lolwana, 2002; Le Mottee & Keet, 2003) and health promotion in schools (St. Leger & Nutbeam in Rowling & Rissel, 2000; Waggie, Gordon & Brijilal, 2004) can be utilised in endeavouring to understand the needs of educators working with LCHH.

By paying close attention to the role of contextual variables the following factors informed our findings; the nature of the current educational climate in South Africa, work and psychological stress, as well as the additional challenges that accompany educators working with LCHH.

Research methodology

Research design
A generic qualitative research design was selected, because it allowed for an emergent, flexible, holistic and contextualised format to describe, interpret and understand the perspectives and worldviews of the educators involved (Merriam, 1998, p. 6-9). We explored the educational challenges as experienced by them within the context of their communities, schools, classrooms and homes.

Sampling
Participants whose profiles matched the following purposeful sampling characteristics were selected from two different urban primary schools within the region of the Gauteng Department of Education:

- Male and female educators, as well as principals and staff members serving on the school governing body and school-based support teams;
- Educators within the Foundation, Intermediate and Senior Phases;
- Educators from urban township primary schools; and
- Educators who had learners that came from child-headed homes in their classrooms and schools.

Data collection
Five different methods of data collection were utilised in this study, namely semi-structured questionnaires, incomplete sentences, individual and focus-group interviews, and collages.

Originally, data was collected from one primary school within the D9 district of Alexandra, via an individual interview with the school’s principal, and two focus-group interviews with a total of 17 educators. As part of the focus-group interview format, educators were asked to respond to four open-ended questions, and to represent their
experiences visually by means of collages, which were then explained to the group, while being video and audio recorded. In addition, these very educators completed semi-structured questionnaires, as well as incomplete sentences. To ensure that a point of information saturation was obtained, 200 semi-structured questionnaires were distributed to 10 different primary schools within the D11 district of Soweto, of which only one school returned 16 completed questionnaires. This low return appeared to be related to respondent apathy and would have had an impact on reliability and the extent of data which could have been collected.

The following research questions were asked during the interviews, as well as in the questionnaires:

- Are you aware of any learners in your classroom who come from child-headed homes? If yes, please explain.
- What has been your experience with such learners in your classroom?
- What strategies did you use to include these learners in your classroom, with regards to the experiences you pointed out in Question 2?
- What support do you think you need as an educator to better equip you to include and accommodate these learners in your classroom?

Observation was an important part of the data collection process. Educators were observed during the interviews at their school, and field notes pertaining to the surrounding environment, observable emotions, as well as the comments and expressions of participants, were recorded. The researchers noted their personal reactions to participants, and the unfolding research process, while attempting to restrain biases that could potentially have tainted the findings.

**Data analysis**

As highlighted by Merriam (1998, p. 151) data collection and analysis occurs as a simultaneous and recursive process from the onset of the study. Using the “constant comparative method” of data analysis (Merriam, 1998, p. 159) information within each of the above methods of data collection used were constantly compared, analysed and coded to identify themes, categories and sub-categories. Practically, this process began when the individual and focus-group transcripts were recorded, read and reflected on along with the collages, questionnaires and incomplete sentences, field notes, comments, observations and queries. Important passages, phrases and words, were highlighted. Ideas were written down and patterns of behaviour were noted, so as to explore relationships between variables and the various participants.

**Trustworthiness**

Trustworthiness was achieved through the accurate recording and portraying of the said experiences, of those educators involved in the study. Multiple methods of data collection, as well as, the use of multiple sources of data, along with detailed explanations
of the research process, allowed for triangulation, tolerated replication and facilitated transferability. By detailing the researchers’ academic status, and subsequent position, in terms of, applicable theory and assumptions, in addition to, a documented trail of data collection and analysis, credibility and reliability were ensured.

**Ethical measures**

General permission to conduct the study within the confines of its districts was obtained from the Gauteng Department of Education. All participating educators signed consent forms for the individual and focus-group interviews conducted, as well as, for those research questionnaires and incomplete sentences that were distributed and returned. Participants were informed at the onset that their participation was voluntary, and that they could withdraw from the study at any point without consequence. In order to protect privacy and identity, the use of names was avoided in any transcriptions.

**Discussion of findings**

Findings indicate that educators are not always aware of the orphan status of learners in their schools and classrooms. In addition to coping with the effects of orphanhood, LCHH appear to present characteristic barriers to learning and overall development – physical, cognitive, emotional, social and moral aspects. Educators use inclusive strategies and make an effort to create supportive learning environments. However, educators report negative psychological experiences in working with LCHH. Consequently, the need for the educational and psychological support of educators that we identified stemmed from capacity building through contextualised in-service training programmes. The need for financial incentives and motivation along with improved resources, and a show of governmental involvement, was expressed. A desire for accessing multidisciplinary and community support services was realised, while issues pertaining to self-care were emphasised.

**Awareness of LCHH**

Participants embraced Bennell’s (2005, p. 468) boarder definition, and conceptualisation of children affected by HIV/AIDS. They understood the term LCHH to include; children whose parents or legal guardians had died of HIV/AIDS, those children who had sick family members, and, those children who headed their own households because their parents were migrant labourers. Unfortunately, participants admitted that they were not always formally aware of the orphan status of learners in their classrooms and schools, despite the National Departments (DOE) registry and learner profile requirements. Research indicated that LCHH are not always officially accounted for. Some LCHH remained unidentified until accidental disclosures occurred, or educators investigated why parents failed to attend meetings. Existing research concurs suggesting that formal disclosure is hampered by poorly maintained school records (Bennell, 2005, p. 468), the failure of LCHH to report the death of their
parents to principals and educators (Leatham, 2005, p. 96), the fear of AIDS-related stigmatisation, teasing and labelling (Cohen, Epstein & Amon, 2005, p. 22), fearing the increased demand for child labour, including caring for sick relatives and an inability to pay school fees (Ebersohn & Eloff, 2002, p. 79). This research suggests that educators may not always understand the contexts of their learners and that poor behaviour, or underperformance, at school could arguably be linked to these unfortunate circumstances.

**Teaching experiences**

By nature, this study highlighted the “circular causality” of a number of internal and external systemic factors impacting on learning and development, and thus affecting the attainment of inclusive education in turn (Landsberg, Kruger & Nel, 2005, p. 17). When examining educators’ experiences within the urban classroom, it became evident that working with LCHH typically posed a number of barriers to learning and development, and that because of working with LCHH educators reportedly felt psychologically distressed.

**Characteristic barriers to learning and development**

As educators related their experiences of working with LCHH, it was not unusual to hear that LCHH seemed to experience distinctive barriers to learning and development when coping with orphanhood. In an individual interview, one respondent indicated that LCHH appeared to “experience learning problems”. They presented incomplete work, because they “usually do not complete their school tasks” and “do not take part in lessons because they can’t cope,” and tend to “stay absent from school.” In the focus-group interviews, other factors reported were that LCHH “come to school hungry,” “lose concentration easily in class,” “look tired,” and “go to sleep in the classroom.” Appearing neglected, LCHH are said to be “coming to school […] not clean […] with any uniform.” LCHH reportedly experience behavioural difficulties, becoming withdrawn, or even acting out. They exhibited a “… general change in social behaviour […] leading to some being bullies or [being] rude.” While some participants mentioned that LCHH show signs of sexual abuse when they: “… talk appropriately […] pull his trousers down […] looking underneath the girls,” others expressed that they felt that LCHH were being forced into an accelerated form of adulthood, as “they have experienced being an adult at an early age and to become responsible for upbringing of other siblings, which is a tough job to do for a young age.” These characteristics correspond with other studies. In highlighting the demise of the safety net of orphan care by extended family members, Foster (2000) emphasised how LCHH are in general vulnerable to HIV infection, as well as social, economic and psychological morbidity. Bennell (2005, p. 482) and Cohen et al. (2005, p. 11), extend this concept by drawing attention to the fact that learners affected by HIV/AIDS in their study endured the following behavioural difficulties (which includes crying in class, being withdrawn or disruptive/aggressive), affecting relationships with teachers and other learners; limited concentration, being poorly dressed and nourished, having difficulty
completing homework assignments, showing signs of physical or sexual abuse, and experiencing general isolation at school and in the community, at large.

**A negative psychological affect**

Moreover when educators were probed as to how their working experiences of LCHH affected them, it became increasingly obvious that their responses were characterised by a negative psychological state. It was observed that for some educators, the informal and often accidental disclosure of a learner’s orphan status caused psychological distress. One focus-group respondent stated that “... its very painful [...] because, I thought maybe that the child was just doing it for fun, maybe to disturb me or anyhow, but I found it was the opposite.” Giving consideration to the misfortune of LCHH caused a participant to feel sorrow, as well as, experience a sense of being emotionally drained: “It’s not easy [...] when you know the background; you tend to feel sorry ...” and

“... the problem with me, my personality is that I am more empathetic. I want to get into a situation and feel the situation and all that, and it ends up draining me [...] you realise that hey, you know it’s too much for me now.”

Since participants viewed themselves as being limited by their inexperience in working with LCHH they reported feelings of helplessness: “It’s not easy you don’t know what to do!” as well as frustration: “Most teachers are frustrated by the changes they face,” and even shame as they felt they “… cannot help learners who are orphans.”

One could argue that in coping with the effects of HIV/AIDS both the reactions of LCHH and their educators, when viewed from a systemic view of development and behaviour, provide insights into internal and external barriers to learning and development. These barriers are therefore related to demographic, health, family life, welfare, educational, psychological and orphanhood effects of HIV/AIDS (as categorised by Ebersohn & Eloff, 2004, p. 78). By giving consideration to these questions, namely (1) where does learning breakdown occur in the system, and (2) which systemic aspects need to be supported, it is argued that educators could benefit from appropriate psychological and educational support when working with LCHH.

**Educators’ inclusive strategies**

In this study, it was found that educators are conscious of how they will treat LCHH and that they purposefully attempt to support and accommodate LCHH in their classrooms. Interestingly, most educators were inclined to mention that they were unsure of whether their efforts amounted to inclusive strategies; this is illustrated by the following comment: “Ah, I wouldn’t say much of strategies because I don’t know whether I have any or not ...”

The findings indicated that educators were conscious of their treatment of LCHH in their classrooms. While some educators felt compelled to treat LCHH the same as other learners, so that “... they don’t feel like they are not like other children
other educators choose not to acknowledge their orphan status: “I try to treat them as if they have parents or as if the whole class doesn’t have parents.” While Leatham (2005, p. 96) makes the point that when LCHH are not set apart from their peer group, educators create an atmosphere of acceptance, which is a fundamental philosophical principle of inclusion. We argue that in this instance there is the danger of discrimination against LCHH, if educators fail to acknowledge the unique contextual needs of LCHH, and insist on treating them as they do other learners.

The study found that educators were providing learning support to LCHH in their classrooms. They made the effort to create opportunities for the increased participation of LCHH. They wanted to keep LCHH involved in school activities so that “... their minds are occupied by good things ...” They made the effort to connect and communicate with learners on a personal level: “... just to show the child that you are interested in them [...] its just to create a closer relationship ...” as well as explore acting-out behaviours, and track progress: “I see that there is a problem, then I call them aside and then ask if there's something that I can help with.” Educators even tailored lesson preparations for LCHH to emphasise the importance of giving individualised attention and allowing for extra time during and after lessons to complete tasks, so that the: “... work is prepared in such a way that it will be fun to do, and be done at a time that will be suitable for them.”

This study highlighted the fact that educators took on additional responsibilities to intervene and gain access to support services on behalf of LCHH, because of a lack of enabling legislation empowering LCHH with the legal authority to do so themselves. In this study, it was found that educators made referrals to other healthcare professionals, and collaborated with NGOs for the purposes of securing welfare home visits, grants and regular food parcels. Some even intervened by personally applying for the paperwork required to access social support, as most LCHH “... don't have birth certificates ...”

Furthermore, the study showed that educators are meeting the basic needs of LCHH over and above their scholarly needs. Using Maslow’s hierarchy of needs (Maslow, 1970, p. 1-50), as cited in Landsberg et al. (2005, p. 33), one can conceptualise the extent to which LCHH are deprived of the most basic of needs, and consider the extent to which educators met these needs. On the most fundamental level of physical need fulfilment, educators responded by “giving them food,” “helping them with the school uniform,” making “donations of old clothes and shoes,” “sponsoring” school fees, and including LCHH in “a feeding scheme project.” In attempting to show LCHH emotional support, and give them a sense of belonging, educators meet their emotional and social needs. In this regard they spoke about taking on the role of a parent: “... making LCHH aware that I’m their mother here at school together with other teachers ...” while emphasising that educators

“... need to nurture these orphans [...] to give them love [...] go the extra mile [...] give them warmth [...] welcome them and show them unconditional love.”
By providing them with an opportunity to form a meaningful relationship with another person, educators prevent the isolation of LCHH and set the stage for forging relationships that are more intimate with other people. By providing reassurance, motivation and encouragement, educators also meet needs related to self-esteem, and serve to activate the potential for self-actualisation:

“... I like to encourage them by telling them that every child is a winner, whether an orphan or not [...] tell them everybody has the ability to do whatever he or she will choose to do in life ...”

Educators are, in fact, addressing the needs of the whole person and furthering the development of LCHH. Firstly, they are meeting needs for food, clothing, love and a sense of belonging, as well as providing LCHH with reassurance, motivation and encouragement. This shows that educators are employing the most basic of inclusive education strategies by addressing these fundamental barriers to learning and development. Secondly, at the same time, educators are functioning as socialisation agents, by guiding learners in moral expectations as well as appropriate and acceptable behaviours of society and culture.

Furthermore, participating educators, appear to be fulfilling a large number of the necessary commitments that have been highlighted in existing research as being central to supporting children affected by HIV/AIDS. Cohen, Epstein & Amon (2005) for example, advocated for the training in issues of bereavement, as well as keeping schools open at night, in addition to sensitising educators to the needs of children affected by HIV/AIDS. Bennell (2005, p. 486) identifies six priority areas for school-based support, namely the identification of learners who are affected by HIV/AIDS, referral and monitoring, school feeding, the training of teachers and the appointment of professionally trained guidance and counselling staff to provide pastoral care and counselling, providing financial assistance with fees and other school-related expenses, and encouraging the involvement of guardians, carers and community support.

Support needed by educators

When viewed from a system’s change perspective, the organisational and professional development aspects that educators want to have addressed in this study could result in relevant and meaningful educational change in the context of teaching LCHH, within a whole school development approach.

The research indicated, overall, that educators felt departmental support is lacking: “The DOE is not doing well to support educators” and should be localised “We need more support from the district level.” Educators also made it clear that there is a need for capacity building through training, financial incentives, improved resources, and more governmental support. The researchers, note that while educators have their own unique needs, which have to be met in order to work productively and ensure their own psychological well-being, some of their educational and psychological support needs appear to be extrapolated from the same needs that their LCHH have.
Capacity building through training

Participant educators in this study unanimously experienced a need for further professional development and were eager for training: “I am eager to undergo any training that could help me.” Many reasoned that they were not adequately equipped or competent to work with LCHH:

“I do think I need support in the sense that I was trained as a teacher, that’s really the classroom situation […] beyond the classroom you find that you are not adequately prepared, you are not equipped for any other thing […] you find yourself having to play the role of a social worker […] a counsellor and even a nurse.”

Customised and in-service training opportunities were called for: “I think we need to be given more workshops and training on how to deal with these types of learners.” Training content suggestions focused largely on the identification and support of LCHH, as well as teaching basic counselling skills to maximise communication opportunities between LCHH and educators. In fact, literature highlights the training of educators to provide pastoral care to all learners who are in need, as a priority area for developing school-based support systems for learners affected by HIV/AIDS (Bennell, 2005, p. 486; Cohen et al., 2005, p. 54). Participants acknowledged that they could also benefit from self-care training to manage the general demands made on educators, as well as from those specific to working with LCHH: “... we also need to be trained on how to manage stress.”

One could argue that educators in this inquiry experience a need to develop themselves, as part of a school-based support system for LCHH. Furthermore, findings concur with existing literature, which highlights “capacity building,” through staff training and development as central to the development of the whole school, as a learning environment, in addition to, the principle of building health-promoting schools alongside the implementation of inclusive education (Engelbrecht et al., 2001, p. 58-62). The employment of full-time guidance and counselling staff at schools to offer short-term counselling to individuals and groups, as well as offering support, and making referrals to outside resources for all those infected, affected and at risk of HIV/AIDS is advocated by McFarland (1999, p. 8) in this regard.

Financial incentives and motivation

Participants in the inquiry spoke of the need for financial incentives, suggesting that various forms of monetary gain would go a long way, in terms of general job satisfaction, as well as motivating educators to work with LCHH:

“... the Department can do something to motivate us as educators [...] like I've said before [...] waking up everyday and coming here, facing those learners, you know its not healthy [...] but if the Department can just try and motivate us [...] on our salary [...] so that we can be able to have energy and the strength to wake up and face those learners [...] we will be working with power.”

The desire for monetary gain was also linked to the opinion that educators are underpaid in South Africa: “I don’t get enough money from my employer,” and that
salaries fail to meet cost of living expenses comfortably: “We also need support (financial) because you find that you are suffering at home ...” Furthermore, participating educators believe that they should receive remuneration for the increased demands placed on them:

“We do need money [...] you know we don't have no medical [...] we are underpaid and we are the most hard working people, we are the social workers, nurses, teachers [...] all of these positions and we are the lowest paid!”

Moreover, meagre pay was attributed to the low status of the teaching profession: “I am ashamed that I am an educator,” and an accompanying low morale:

“I feel like giving up when the Department piles us educators with work, but the salary is as low as a flat tyre.”

In the light of the aims of this inquiry, the mention of salary increases cannot be ignored when one considers how the role of the educator has been reconceptualised to meet contextual challenges and demands, as outlined in the National Education Policy Act, 1996, Norms and Standards for Educators (Government Gazette, 2000 as quoted in Louw, Edwards & Orr, 2001, p. 5). Furthermore, existing literature has attributed low educator morale to systemic factors; inadequate salary packages, high educator-learner ratios, learner ill-discipline, poorly resourced schools, administration and paperwork overload, the manner of OBE implementation, continuous educational policy changes, the leadership and management styles of the DOE, the quality of in-service training, and the professional image of teaching in wider society, are some of these factors (Hayward, 2002, p. 72). In the light of these challenges, it is no wonder an educator in this inquiry expressed the following sentiment: “We need the government to know that educators are the pillars of strength in SA and deserve to be paid.”

**Improved resources**

In this study educators felt that their ability to include LCHH was limited, due to poor resources, “… you don't have resources to help these kids.” Thus concurring with existing literature by Bennell (2005, p. 484) and Cohen et al. (2005, p. 25) that because “schools are ill equipped” and “chronic and pervasive resource constraints” limit schools from providing LCHH with adequate support. In this inquiry, receiving greater budgets was emphasised: “The only thing I need is more money to help them in everyday situations but with methodology I am equipped.” If more financial resources were available, educators in this inquiry wished to provide LCHH with relaxation and leisure opportunities that their parents would normally have given them:

“... for me it is very important to take the children (LCHH) out, like going to a stadium to watch soccer or taking them to see animals [...] I think it’s valuable to entertain them.”

In addition, they would use resources such as teaching methodology aids, “… they (LCHH) might not forget what they have been taught if practical work is included in teaching and learning.” Addressing resources, therefore, appears to be an important component in supporting educators who work with LCHH.
Increased government involvement

Educators in this inquiry saw that increased governmental involvement was crucial to creating more enabling school environments: “... the government must do much to work hand-in-hand with the schools and come and hear our problems here at the schools on how to help these kids (LCHH).” They felt that the government could create more conducive environments by prioritising schools with LCHH for psychological support service allocation:

“(form) Model C schools, they do have such things (services), but with us – no, and we are the people who are experiencing these things more [...] from the government’s side of it, they should make it a point that each and every school do get people who are going to counsel educators, people who are going to counsel the learners, so that we are able to do our work.”

Bennell (2005, p. 486) argues that the level of support from NGOs and governmental agencies will ultimately determine the impact of HIV/AIDS on the education system. The importance of increased governmental involvement cannot be ignored when considering how to support educators working with LCHH.

Access to multidisciplinary support services

Multidisciplinary support and interdepartmental collaboration was unanimous aspects mentioned by focus groups in this inquiry. Educators felt that “... mixing with other health professionals [...] going to social workers, psychologists and other sources will help a lot ...” As educators, caring for LCHH, they “... need support from the Department of Education and Social Development,” even specifically stating: “We need social workers.” Needing to access counselling support for LCHH, as well as methods to track the progress of LCHH, educators mentioned that they wanted “... a strategy to handle these kids (LCHH) [...] to check up each time [...] like counselling to check what is happening in the child’s life ...” The regularity of support, as such, was also emphasised: “We need psychologists to visit us at least twice a week.”

Given that participants mentioned the involvement of psychologists, consideration should be given to the role of the educational psychologists in South Africa as a support mechanism for educators to include LCHH. Within existing literature, Sheridan and Gutkin (2000) were, essentially, the first writers to see educational psychologists as macrosystemic advocates, spearheading the collaborative responsibility of special education service delivery within schooling communities. De Jong (2000) primarily perceived educational psychologists working, more specifically, as developmental consultants within schools as organisations, by focusing on staff development, support service mediation and strategic thinking in aid of overall health promotion. Nastasi (2000) reiterated this line of thinking by considering EP’s functioning as healthcare providers coordinating service integration, in terms of, prevention and the provision of early treatment by targeting those “at risk”. While Engelbrecht’s (2001) holistic view considers educational psychologists functioning as child advocates, educational support consultants, organisational facilitators and collaborators, aiming to develop
schools as organisations to achieve general goals of health promotion, and inclusive education, expanded this series of expectations further.

As the role of the educational psychologist (EP) appears to be generally conceptualised as a service provider of learning support, specific to contextual needs, based on the development of health promoting and inclusive schools within an integrated approach to whole school development, the request for the regular involvement of such a potentially powerful social agent by the participants in this inquiry should not be overlooked by the Department of Education.

Community support

In referring to The National Policy on HIV/AIDS, Louw et al. (2001, p. 10) reminds the state, parents, and other adults who are in a position of care, of their moral obligation, to ensure that the rights of LCHH are respected and realised. From the responses generated from this inquiry, educators seemingly assume such responsibility, and are calling for additional support from their communities to lighten the burden of care for LCHH:

“These orphans need to have a good relationship where they experience love, care […] for that to happen the community at large needs to be involved […] all the professional sectors …”

There also appears to be an appeal by these participants for these particular urban African schooling communities to return to traditional African values and fellowship: “… we need to be involved and maybe go back to our culture where we say every child is an adult’s child …” While community parenting is needed to absorb the weight of care:

“… I need somebody who is staying with these kids to provide food so that they can grow and when these kids are sick they must take them to the doctor or to the clinic so that they can get medication […] its possible for (LCHH) to participate in the classroom,”

the involvement of community leaders is indispensable to managing the: “support of the orphans as they can build houses, shelters …”

The call for community-based orphan support is not new. Foster’s (2000, p. 61) research reaffirmed community-based orphan support as a parachute alternative to traditional extended family member care. This study found that because of increasing numbers of orphans in relation to the decreasing numbers of caregivers, as well as sibling dispersal and migration, traditional “safety nets” were weakened. Current literature abounds with various suggestions on activating community support mechanisms, which would assist educators working with LCHH by spreading the load of care. When developing health promoting schools, Louw et al. (2001, p. 79) for example, look at establishing Health Advisory Committees in co-operation with schooling community stakeholders to ensure that school governing bodies prioritise HIV/AIDS policy. While an organisation called “The Community Organisers Toolbox” (http://www.etu.org.za/toolbox/aids.html) detail ways of supporting community childcare committees to assist community childcare volunteers, so as to provide for the needs of sibling headed
families, as well as those relatives who have assumed responsibility for them. These volunteers assume accountability to ensure that LCHH; access government grants, get food parcels and benefit from poverty relief programmes, stay in school and work with schools to support those who cannot afford stationery, fees or clothing, be visited weekly to check on school attendance, health, nutrition and general coping, be helped to access health care when needed, get medical support for HIV/AIDS, benefit from church and welfare collections for clothes, bedding and building materials, receive assistance to apply at Home Affairs for Identity Documentation, Birth and Death Certificates, receive counselling to deal with feelings surrounding loss and grief, and have one trustworthy adult to whom they can come with their problems. From the responses provided, it seems that educators feel that along with a return to communal values, the broader community could do much to support the school and governing bodies in building an inclusive education and training system, while at the same time doing much to help LCHH. Research by Nesangani (2006, p. 225) outlines how this is possible through the adoption of a Community Building Approach (CBA) intervention strategy for assisting LCHH with home and school problems arising, as a result of living without parents. Accordingly, educational psychologists are involved in, and made responsible for, identifying LCHH and recording their background information on school databases. Thereafter, interested parties and stakeholders meet to address the needs of these LCHH according to their profiles. Focusing on the holistic support, education and empowerment of LCHH by involving all appropriate stakeholders and interested parties – interventions focus on: housing needs; physiological and educational needs; addressing promiscuity, prostitution, sexual abuse and rape; support for general feelings and lack of security; academic achievement; educator’s attitudes as well as supporting substance abuse, misbehaviour, dropout and discipline at home and at school. In this way, participants’ desires (as reflected in the sentence completions) for schools and educators “to work hand-in-hand with the community” can be realised.

Improving communication channels so that educators know about orphans

This inquiry highlighted an urgent need for educators to be made aware of the orphan, or child-headed, status of learners in their classrooms: “Maybe if we can know way before time when they are admitted at school.” The importance of sharing this information with colleagues was emphasised:

“I would prefer that us as teachers, if we discover, we let others know that there are learners who are orphans or (from) child-headed families, or that there are no parents.”

There was also a sense amongst participants that being ‘forewarned’ gave them a sense of being ‘forearmed’: “We as educators will have to identify them and know them […] so […] we know that we can do something for them and […] can care for them.” From a preventative stance, such knowledge was expressed as being crucial: “[…] we are having to identify these learners, sometimes it is helpful […] finding out that this child has a problem.” And even though such identification is central to most
orphan care and support models (as summarised by Schneider & Russel, 2000 in Louw, Edwards & Nel, 2001, p. 98) this inquiry highlights a gap where educators are not always aware of the needs of their learners beyond the classroom. When using a systems approach to understanding the kinds of barriers to learning and development, faced by LCHH, this lack of knowledge is problematic and in itself a barrier. When LCHH remain unidentified, appropriate care and adequate support cannot be affected, which results in a form of exclusion, instead of inclusion. It would seem that in this context, failure to disclose, inappropriate communication channels and competencies are a critical barrier to the learning and development of LCHH, since problem solving, preventative and health promoting initiatives are not employed (Engelbrecht, et al., 2001, p. 53). Evidently, this situation needs to be addressed if inclusion is to occur: “… you know what, we have to try by all means to look at these children, where they are coming from, what they are facing ...”

The need for self-care

With educators as frontline workers in the human service of education and when one thinks of the kinds of people, environments, working conditions and resultant stress that are operational in the South African context, it is not surprising that they have a tendency to suffer from psychosocial stress and accompanying psychological problems. In remarking generally that working in the current teaching system is stressful, participants in this inquiry questioned the need for self care to be acknowledged as a means of supporting educators to work with LCHH:

“… we have to be helped on how to de-stress because teachers are stressed […] they have their own problems, and if you have your own problems about your own family, something you have to deal with, then when you come here to school and you find this load again (working with LCHH) […] how do you manage?”

Furthermore, when one considers the working contexts of educators who teach LCHH, the issue of ‘self-care’ cannot be ignored because of the emotional demands placed on educators:

“… educators will need to have counsellors because we are exposed to those things and it affects us emotionally […] you find that you can hardly sleep at night because you are thinking of what you heard about these children (LCHH) during the day [...] so what we need is counselling so that we can maybe learn to accept that it is like that, to accept the conditions that are happening out there …”

Educators appear to be describing negative psychological experiences indicative of ‘burnout’, which seems to be occurring as a result of what is commonly known as ‘compassion fatigue’. As explained by James and Gilliland (2005, p. 575), this is a condition where front line workers unwittingly absorb and internalise the very trauma that is manifested by the people that they care for. From a systems perspective, these negative experiences could manifest behaviourally, physically, interpersonally, and attitudinally, by having a potentially insidious effect on educators, their learners, co-
workers, family, friends and school (James & Gilliland, 2005, p. 507) and should be addressed as an aspect of health promotion in schools.

**Recommendations**

Although, not exhaustive, it is hoped that the following recommendations, based on the findings, will offer the field of Educational Psychology Research much to consider when developing programmes to support educators to include LCHH in classrooms and schools.

**Addressing the lack of awareness**

Systems need to be developed to help raise awareness amongst educators of the orphan status of learners at school. When coping with orphanhood some LCHH may choose to remain anonymous fearing discrimination and exploitation, whilst others may characteristically endure a number of barriers to learning and overall aspects of human development. Appropriate support systems need to be activated by educators. School registers and databases could be used, but there is the risk of compromising confidentiality. LCHH would have to agree voluntarily to be listed and receive assurances regarding confidentiality and disclosure. With the aim of making educators aware of the contexts of the learners they will be working with, educators should be duty bound to hand over updated learner profiles to their colleagues at the end of each academic year. In this manner, awareness, progress and support of LCHH can be monitored. Community members, such as clergyman, policeman, neighbours and extended family members are sure to be aware of the impending impact on LCHH, and would do well to inform school-based support teams in times of need. Likewise, community health professionals such as doctors, nurses, social workers, psychologists, policemen, and traditional healers should be compelled to ask LCHH if they would like to be referred to school-based support teams. In turn, school-based support teams should be obliged to inform district offices so that the DoE can, then, compile a national database of LCHH to manage support initiatives. In general therefore it seems as if the DoE and government need to make a long-term effort to make African communities aware of the challenges faced by LCHH.

**Building capacity**

When thinking of the professional development of in-service and pre-service educators, the DoE and higher learning institutions’ training modules should specifically focus on training, capacity building and improving competency with respect to working with LCHH. Course modules could assist educators in the following respects:

1. Identifying and supporting LCHH with the number of barriers to learning and development that they are known to experience as a result of coping with orphanhood;
2. Making suitable referrals and accessing multidisciplinary support services as well as activating existing community support systems on behalf of learners;

3. Acquiring basic counselling skills to use when communicating with LCHH when issues related to trauma, grief and bereavement surface; and

4. Raising educator awareness of the need for self-care to avoid burnout associated with the demands of working with LCHH.

Training modules should take the format of practical workshops moulded to suit the needs of specific school or classroom contexts. Service providers (e.g. district trainers or educational psychologists) must be directed by needs analysis when developing workshops.

**Intervention strategies for obtaining financial incentives and increasing motivation**

Whether the call for financial incentives and efforts to improve educator motivation, in this inquiry, is related to the systemic variables affiliated with the entire South African teaching profession (e.g. professional demands of the teaching context, the high living costs and the low status of teaching), or the contextualised needs of educators working with LCHH, the psychological importance of pay as an extrinsic motivator is never the less highlighted. If acknowledged and addressed, financial incentives and accompanying improvements in motivation could indirectly help educators to work with LCHH. Schools and communities can find ways of fulfilling these needs rather than relying on government to empower them. As managers of school budgets, school-governing bodies have the propensity to grant discretionary and performance-related bonuses. They can also collaborate with community organisations to raise funds. Therefore, schools can create their own incentive and motivation schemes. For example, they could offer ‘paid leave’ or give community-sponsored prizes, as teaching awards, to publically acknowledge deserving educators.

**Improving resources**

The significance of improving teaching resources so that educators are better able to include LCHH is reasonable when considering the contextual challenges that exist in South Africa, as a result of the socio-economic legacy created by apartheid. As resource needs are bound to vary from one schooling context to another, the budgeting and buying capacity of school management teams and governing bodies need to be prioritised. Fund raising efforts and resource sharing initiatives within the school, and its schooling community, could address needs without having to rely on governmental resource provision.

**Appropriate governmental involvement**

In the context of this inquiry, participants questioned the government’s grassroots understanding of how contextual realities hamper the implementation of policy
expectations. Consequently there was a call for increased government involvement to focus on the need for the DoE to manage existing support services appropriately. Participants’ perceptions in this inquiry highlighted a belief that there was a disparity in support service provision, which counter-intuitively favoured more advantaged schooling contexts. As such it is recommended that the DOE undertakes regular needs analyses, with respect to determining more appropriate psychological support service provision, and allocation, according to the level of need. An empirical ideal which would be hard to achieve is the situation where, schools with large numbers of LCHH would automatically qualify for support service provision, and will warrant the employment of equitable numbers of psychologists and social workers to fulfil these needs.

**Accessing multidisciplinary support services**

‘Access to’, as well as ‘collaboration with’, multidisciplinary support services would be helpful for educators working with LCHH. Apart from incidental learning about ‘self-care’, educators could receive practical suggestions on how to cope with the social, emotional and psychological needs of LCHH in their classrooms, if they worked closely with associated health professionals such as nurses, social workers and educational psychologists. While the Departments of Health, Education and Social Welfare could do much to increase the support base of available public service practitioners through community service and outreach programmes, school-governing bodies could activate school community support mechanisms or appoint private practitioners. Furthermore, healthcare providers could also offer some ‘pro bono’ services as part of their individual contributions towards community outreach and service. Moreover, professional associations could acknowledge these efforts by making them count towards the accumulation of annual professional development points, which all healthcare providers are expected to work towards.

**Activating community support**

While the capacity for community support is far reaching, in terms of fund raising, sponsorship and material or financial donations, community involvement on behalf of LCHH is a necessary component of supporting the educator, as in reality they are limited in their capacity to do everything for LCHH in their care. As the challenges encountered by educators are multidimensional and complex, whilst being socially and culturally interconnected, community involvement focusing on the support, education and empowerment of LCHH is arguably crucial. Fellowship and the return to values where communities mobilise caring efforts would go a long way to address, and intervene on issues, such as: inadequate housing, physiological and educational needs, feelings associated with abuse, promiscuity, prostitution, sexual abuse and rape, lack of security, academic achievement, educator’s attitudes, substance abuse, misbehaviour and discipline at home and in the classroom, as well as school dropout. Existing community support mechanisms similar to NGOs, traditional healers and clergymen could also meet the needs of LCHH, by giving them valuable spiritual guidance and support, in addition to, rallying the community members to meet their physical needs.
While support service providers, such as educational psychologists and social workers, could follow the principles inherent in the Community Building Approach (CBA) to coordinate the efforts of interested parties and stakeholders to address the problems and needs of LCHH. As frontline healthcare workers, they are well positioned to support the community to achieving empowerment, critical consciousness, capacity building, issue selection, participation and relevance.

**Ensuring ‘self-care’**

As educators in this inquiry reportedly felt ‘psychologically distressed’ and recognised a need for self-care, as a result of the emotional demands of working with LCHH, by addressing ‘self-care’ the general psychological well-being of educators is enhanced; thus impacting positively on the work environment. In highlighting the prevalence of ‘burnout’ in the human services professions, James and Gilliland (2005, p. 507) remind practitioners to view this problem and intervention holistically from both a systems and organisational perspective, instead of just residing within the individual. As such, the issue of ‘self-care’ should be built into the school curriculum with educators creating a space for self-care in the workplace. This could involve compulsory tea and lunch breaks, booking counselling time with a school counsellor, social worker or educational psychologist and establishing self-care clubs and support groups to meet after school once or twice a month. School management and support-based teams would do well to monitor their staff by doing ‘feelings’ checks’ at the start of the morning meetings, and to provide onsite emotional support. Attendance at ‘self-care’ workshops could do a great deal to raise awareness in educators of the beginning symptoms, stages and dynamics of ‘burnout’, as well as, ways of halting and ameliorating its effects.

**Concluding remarks**

An original contribution of this study is that is has produced knowledge on the educational and psychological support needed by educators to include LCHH in urban classrooms. As orphan status awareness cannot be taken for granted and LCHH tend to experience characteristic barriers to learning and development, educators need to learn how to identify and manage such learners in the classroom. Furthermore, educators need help with their own feelings of sadness, distress and pain. For these reasons there exists a need for the DoE, district support teams, as well as, school management teams, and support service providers (such as school counsellors, educational psychologists and social workers) to pay more attention to human resource management, especially concerning the development of the professional and personal self of educators.
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