Chapter 1

Introduction and Literature Review

Harcombe's Cognitive Approach to Literacy Instruction (CATLI) is a literacy learning process which attempts to address some of the shortcomings in other literacy instructional programmes. It serves as an alternative literacy methodology, incorporating constructivist, ecosystemic underpinnings which address contextual issues in learning.

1.1 Aims

The aims of this study are twofold: (a) To examine the participants' perceptions regarding the ecosystemic and constructivist theoretical underpinnings of Harcombe's Cognitive Approach to Literacy Instruction (CATLI) and (b) To evaluate the effectiveness of the CATLI in improving literacy instruction and learning within a South African university training context. In addition, this study aims at examining how to support learning support students from the university in the practising of what they have learnt theoretically. The study also aims at evaluating the collaborative supervision process trainee students and staff engaged in during the training process.

1.2 Rationale

Literacy skills cannot be acquired or learnt without being influenced by the context in which it takes place. Considering the varying literacy rates, ranging between 50 percent and 99 percent worldwide in developed countries, one can assume that something in the environment hinders individuals from acquiring adequate literacy skills. The low levels of literacy learning both locally and internationally are caused by a number of factors, of which the method of literacy instruction is one (Harcombe, 2003). Skills-based and psycholinguistic programmes

used in literacy instruction have not delivered the desirable effects (Santa & Hoien, 1999; Troia, 1999), neither were balanced approaches deemed theoretically sound, practical and easily enough taught for literacy learning to take place effectively. In the light of these findings, Harcombe (2003) proposes that the literacy instruction approach she devised, the CATLI, compensates for the other approaches' shortcomings, as it is considered practically useful and theoretically sound; grounded on an ecosystemic framework and underpinned by social constructivism.

Furthermore, it incorporates the theory of cognitive education, including the PASS model, by which the learner's individual learning styles can be accommodated through the use of multi-level teaching strategies, i.e. by differentiation of the curriculum. Research supporting the underpinning theories used in Harcombe's CATLI (Ehri, Nunes, Willows, Schuster, Yaghoub-Zadeh & Shanahan, 2001; Santa & Hoien, 1999; Walker, Rattanavich & Oller, 1992) as well as anecdotal evidence obtained from experiences of learning support practitioners, suggests that the CATLI is an exemplary literacy instruction programme, suitable to meet the needs of South African learners.

With particular reference to the South African context of schooling, it is important to consider that many educators as well as their learners are mainly utilising a language of learning that is not their own, that is English. For this reason, it is not surprising that problems occur on the levels of instruction and learning. Given that both South African learners and educators often have varied backgrounds in terms of language and culture, it is considered essential to evaluate the effectiveness of a programme that may resolve many of the issues encountered in literacy instruction in a multi-cultural and multi-lingual setting such as South Africa. It is believed that the results of this study would yield valuable information concerning the way

forward for literacy instruction within the South African context. This study therefore seeks to make a contribution in initiating an evaluation of the effectiveness of using Harcombe's CATLI for the improvement of learners' literacy learning as part of the learning support training programme at a Johannesburg university community centre.

1.3 Research questions

Aim 1: To examine the participants' perceptions regarding the ecosystemic and constructivist theoretical underpinnings of the CATLI.

1.3.1 What are participants' perceptions regarding the ecosystemic and constructivist theoretical underpinnings of the CATLI?

1.3.2 What are the participants' views regarding the effectiveness of the CATLI in facilitating collaboration and support?

1.3.3 Was the CATLI effective in equipping the students with the skills necessary for executing their roles as learning support specialists?

Aim 2: To evaluate the CATLI as an effective mode of literacy instruction for improving literacy learning within a South African university training context.

1.3.4 What were the trainees' overall perceptions of using the CATLI as a method of literacy instruction for improving literacy learning within a South African university training context?

1.3.5 Were the children in the community centre's developmental and literacy needs promoted by using Harcombe's CATLI?

1.3.6 Was the ecosystemic process effective in identifying the children's strengths and needs to support effective differentiation of the CATLI curriculum?

1.3.7 What were the perceptions of the participants (i.e. trainee learning support specialists and parents) regarding the effects of using Harcombe's CATLI on literacy learning?

1.4 Literature review

1.4.1 Literacy in Africa

In recent years, literacy learning has become a major problem and is presently regarded as a global crisis (Triebel, 2001). Given that worldwide estimates of the illiterate have remained unchanged between the 1980's and 1993, these statistics indicate that literacy learning is stagnant (Triebel in Olson & Torrance, 2001).

Of the 21 countries where the estimated adult literacy rates are lower than 50 per-cent, thirteen are located in sub-Saharan Africa. Although there has been remarkable growth in literacy learning in sub-Saharan regions (Triebel in Olson & Torrance, 2001), it is nevertheless alarming that four out of ten adults in this region cannot read or write; that is, a total of 136 million people (UNESCO, 2002).

According to UNESCO (2002), costly mass literacy programmes in Ethiopia and the United Republic of Tanzania have failed. Despite these and many other initiatives, it is argued by some researchers (Marc-Laurent Hazoume of the UNESCO Institute for Education - UIE) that Africa lacks a commitment to literacy. According to Aicha Bah Diallo, UNESCO's Deputy Assistant Director-General for Education, these failures are attributed to African governments' use of unsuitable literacy learning approaches. Diallo maintains "they imposed literacy without creating the demand for it" (UNESCO, 2002, p.1). In agreement with Diallo's statement, Adama Ouane, Director of the UNESCO Institute for Education (UIE), asserts "... when reading and writing is linked to people's everyday needs, success is

guaranteed. Literacy has to do with local culture, local knowledge and local languages..." (UNESCO, 2002, p.1).

While there are many ideas concerning the reasons for low literacy learning, there appears to be no single factor that can be designated as the cause of low literacy rates. In the following section, various factors influencing literacy learning will be explored.

A major setback and challenge to literacy learning is the choice of language of instruction for literacy programmes in Africa. Cameroon, for example, has two national and over 250 local, languages (UNESCO, 2002). This dilemma is also experienced in South Africa with its 11 official languages. Studies have indicated that people learn literacy skills best in their mother tongue and that well-developed literacy skills in one's mother tongue is needed before learning literacy skills in another language (Harcombe, 2003; Nel, 2005). Because of South Africa's language diversity, English, and not other languages, is often used as the main medium of teaching and learning in most schools and as a result, learners do not have the opportunity to develop literacy skills in their first language adequately, let alone English, which is often their second, third or even fourth language (Nel, 2005). The problem is that the majority of learners who are brought up using a home language other than English are expected to acquire their first literacy skills in a language different from their mother tongue. This could be traced as far back as the Apartheid days in South Africa, when most mother tongue languages were devalued and children could often not learn their mother tongue well. Although the language of literacy instruction is not the only cause of the very low literacy rates in South Africa, anecdotal evidence suggests that this over-valuing of one and devaluing of other languages has contributed to considerable difficulties in the acquisition of literacy (Harcombe, 2005; Nel, 2005; Yeh, 2004).

Another factor impacting on literacy learning, is that educators are generally not sufficiently trained and equipped to adapt the curriculum in such a way that they will be able to cater for the needs of learners in their multi-lingual classrooms. Nel (2005) advises that teachers and those in training should be adequately prepared for the challenging task of implementing the principles of outcomes-based education (OBE) when teaching multilingual learners with diverse learning needs in one classroom, but recent consultation between the researcher and several educators, suggests that this preparation has largely not occurred.

In addition to the above factors, Yeh (2004) proposes that deficient resources, inequitable funding structures, disparities in school fees, the lack of supplementary materials in indigenous languages and the limited access to books in general, are also considered as some of the causes of low literacy rates in South Africa. Whilst the aforementioned are key factors in literacy acquisition, specialists also indicate that South Africa does not have a reading culture in that people's attitudes, to reading in particular, are not conducive to literacy learning (Yeh, 2004).

Linked to people's mind-sets toward literacy, their motivation to learn also plays a vital role, as it enhances or stifles the acquisition of literacy skills (Harcombe, 2003). Yeh (2004) explains that reading is not something most people are motivated to do during their leisure time and that it is not considered useful outside of the school context. Moreover, as stated by Yeh (2004), there is also the perception among some South Africans that reading is not generally viewed as an empowering skill. In this case, those holding this view could not be further from the truth, as Harcombe (2005) comments that contemporary workplace structures increasingly rely on technology, which requires advanced literacy skills. Nevertheless, a

large proportion of the South African population does not have books in their homes and many parents, 32 percent of whom are functionally illiterate (Aitchison & Harley, 2006) are not aware of how to access resources to further their children's education, nor, as experience suggests, are public libraries available to the majority of S.A. citizens. Furthermore, the differences between the language used as an educational medium and the spoken home language add to the complexity of building a reading culture (Yeh, 2004).

It is also important to bear in mind that learning diversity, which includes developmental diversity, can impede literacy acquisition if children's individual differences are not considered and accommodated. The majority of South African schools have previously used methods of teaching literacy that disadvantaged the individual differences of their learners. For instance, phonics was taught first and many learners' learning styles were not accommodated. In addition, reading and writing were taught separately, which further disadvantaged learners who had little or no literacy experience out of school (Harcombe, 2005).

Considering that the previous education system failed in equipping children for life after school (du Toit and du Toit, 2004), it was expected that the existing curricula had to change from its traditional content-based, teacher-centered approach to a more flexible mode of education (Harcombe, 2003). According to the Revised National Curriculum Statement (RCNS) Schools Policy, an education system designed in this fashion would promote "achievement-oriented, activity based and learner-centered education (that purposes) lifelong learning" (parenthesis added) (Department of Education, 2002, p.123). This definition delineates the concept of Outcomes Based Education (OBE); a notion on which the 'new' curricula for South African education is built. The foundation of 'new' curricula, resembling

OBE and the RCNS, is underpinned by constructivism, a theory that underpins development and learning explanations including Piaget's theory of cognitive development and the social constructivist theory of Vygotsky.

During the period of her employment at the University of the Witwatersrand, Elaine Harcombe, a committed constructivist in her stance on education, conducted extensive research in the field of literacy acquisition and learning. Guided by her widespread knowledge, experience and personal involvement in learning support practice and supervising university students' training, Harcombe developed an integrative training model for learning support specialists in an attempt to produce a workable alternative to fill the gaps and inconsistencies in existing literacy instruction programmes.

Harcombe's Cognitive Approach to Literacy Instruction (CATLI; Harcombe, 2003) is a method of literacy instruction; uniquely developed to help educators adapt the school curriculum to accommodate the diverse needs of all their learners. The CATLI is based on a constructivist, ecosystemic framework for understanding learning and development. This framework (also developed by Harcombe, 1993) is underpinned by social constructivism and also includes Marxist principles to add understanding of the interactive effects that governmental policy and policy implementation may have on its citizens' development.

In order to fully grasp Harcombe's philosophy in developing her approach to literacy learning and instruction, the following section is devoted to an elaboration of the relevant theories and research that underpin Harcombe's CATLI, namely social constructivism, ecosystemic theory and selected literacy instruction theories.

1.4.2 Social constructivist theory

The Swiss psychologist, Piaget (1954), developed his theory of cognitive development and made valuable contributions to education and the theory of constructivism (Mussen, Conger, Kagan & Huston, 1990). Piaget theorised that development results from the interactions between maturational changes occurring within individuals and the experience they gain in their environments. For Piaget, learning takes place when children are actively constructing their own knowledge, as opposed to merely integrating and reflecting their teachers' ideas. In this light, he viewed children as active problem solvers with the ability to discover and invent new learning opportunities (Gultig, 2001; Mussen, et al, 1990; Mwamwenda, 1989).

As in the case of Piaget, Vygotsky, a Soviet psychologist, is regarded as one of the most important psychological theorists of the twentieth century (Gultig, 2001). He devised the theory of the socio-historical construction of knowledge (Nutbrown, 1999) and contributed significantly to the understanding of the teacher-learner relationship in the learning process (Gultig, 2001). For Vygotsky, every part of learning has a historical record, a foundation on which it was built, commencing prior to formal education and grounded in real life situations (Nutbrown, 1999).

Vygotsky highly esteemed the harmony between children's learning and their developmental levels, of which he suggested there were two; i.e. their actual level of development, and their potential or higher level of development. The actual developmental level refers to tasks that a child can successfully complete independently, whereas the potential level pertains to what a child can achieve with the guidance from an adult or more knowledgeable peer (Gultig, 2001).

This interchanging divergence between the two levels is called the zone of proximal development or ZPD. Vygotsky summarises his ZPD as follows: “what a child can do with assistance today she will be able to do by herself tomorrow” (quotation from Vygotsky, (1978) in Nutbrown, 1999, p.35). In other words, children will be able to make steady progress in learning if they receive guidance and mediation in acquiring metacognitive skills. His notion stresses the imperative role of adults or more knowledgeable peers in aiding children’s advancement in thinking, which allows them to progress and develop ideas through such encounters (Gultig, 2001; Nutbrown, 1999).

Vygotsky’s contributions became the force behind the work of Reuven Feuerstein, the Israeli psychologist who developed the theory of mediated learning experience (MLE). Like Vygotsky, Feuerstein emphasised the importance of learning within the social context, but Feuerstein applied this theory more practically than Vygotsky was able to do. The aforementioned theorists, including Piaget, all contributed to the development of the theory of cognitive education, which emphasizes the use of the mediated teaching style and metacognition, which is discussed in depth later. Feuerstein posits that learning is a mediated activity, wherein adults shape learning events in a more meaningful way to children (Human-Vogel, 2004). This implies that learning events are designed in a way that children develop metacognitive skills to aid their own inquiry and problem solving.

Feuerstein proposed that the development of metacognition is dependent on the quality of mediated learning experience (MLE) the individual experiences from caregivers. In the process of MLE, the adult acts as a mediator between the child and the world and alters new information into meaningful activities and descriptions that accommodates the child’s experience and level of abstraction, whereby the child’s cognitive development is facilitated optimally (Harcombe, 2003).

One way in which educators can provide children with such mediation, is through a process often termed scaffolding. This process is linked to Vygotsky's ZPD, which is based on the notion of cooperatively achieved success with the mediation of a more knowledgeable person in the areas that require it (Gultig & Stielau, 2002). Such optimal learning would occur if the mediator is aware of the child's gaps in concepts and metacognition and then tailors suitable mediation, which would develop the child's cognitive structures. In other words, teachers therefore need to carefully establish these gaps, design a task and by a process of co-participation, the teacher or another child with a higher level of skill supports and encourages the learner in performing the task with the aid of metacognitive strategies (Gultig, 2001; Bidell & Fischer, 1992).

Another constructivist technique to augment children's learning is collaboration. Collaboration in learning refers to children working together in a group, either formally or informally, to achieve a common goal. This involves the joint planning, decision-making and problem solving from all members of the group. Through this process, each learner has the opportunity to contribute his or her experiences, information, knowledge and skills to the other children, in a spirit of support and respect, as opposed to an attitude of contest (Engelbrecht, 2004). In this way, children are reconstructing their schema as they discuss and assimilate others' views into their own existing schema, as well as modelling metacognition, which leads to enhanced concept development and enhanced metacognition.

Constructivism is presently cited as being the new axis around which South African education pivots (Human-Vogel, 2004). However, the education system has not always held a constructivist view toward schooling. Teachers generally transmitted information as "knowledge" to passive learners, who were required to memorise the details, often without

grasping the content (Harcombe, 2003). In this mode of learning, students were in fact deprived of opportunities to develop useful skills in school, as they were not developing their own learning skills.

1.4.3 Ecosystemic theory

The ecosystemic theory is underpinned by the theory of constructivism, which plays an important part in current ecosystemic philosophy. The ecosystemic approach is an integration of constructivist theory, systems theory, ecology and cybernetics, which share a number of assumptions in understanding human functioning and focuses on the communication networks in systems and subsystems in a particular human context (Meyer, Moore & Viljoen, 1997). This ecosystemic understanding of human functioning permeates through to the consideration of an individual's entire development, of which learning, including literacy acquisition, forms a part.

Some approaches to literacy instruction that are based on the philosophy of ecosystemic, or interactive developmental frameworks do consider the effects of school, home and individual factors on the individual's development. However, that is where it tends to end, as the influences of socio-economic and political factors, often referred to as the Marxian critical analyses framework, are often passed over. In other words, an ecosystemic framework should include an examination of the interplay of socio-economic and political structures on the individual's development (Adelman & Taylor, 1993; Edmondson, 2002; Shapiro & Biber, 1972; Harcombe, 1993). To compensate for the shortcoming of the oversight of political and socio-economic factors in many of these approaches, Harcombe (1993) incorporated the historical, politico-socio-economic framework into a comprehensive ecosystemic approach, which examines the interaction between a country's laws, policies and service delivery with the other systemic factors that contribute to individual development. Students have used this

approach for many years, and have found it very illuminating and practical in understanding the factors that contribute to children's development and learning.

South Africa is well known for its diverse, multi-cultural societal make-up. Despite the political changes from over a decade ago, many children (predominantly the black population) are still constrained to attend schools that advocate a culture that is different to their own. Amongst other hindering factors, such as extreme poverty, inadequate schooling and health delivery, this cultural evaluation contributes to the experience of learning difficulties (Human-Vogel, 2004). Human-Vogel (2004) states the possibility that such children may not necessarily be lacking in ability, but under-perform because the 'intelligent' behaviours associated with these schools are completely unfamiliar to them. When thinking ecosystemically, it is suggested that, due to political, socio-economic, interpersonal and individual interactions, the majority of South African children have many barriers in the way of their developing optimal literacy skills, which goes a long way to explaining why the literacy levels in South Africa are so low (Yeh, 2004).

1.4.4 Literacy instruction methods

According to a constructivist, ecosystemic approach, low literacy rates in SA could also be seen as being due to, inter alia, poverty, inappropriate methods of education, diversity in development and learning styles, lack of resources, such as books and a lack of motivation to learn, amongst many other factors. In addition, literacy learning levels can be directly linked to literacy instructional methodology, which will be examined in this section. Thinking constructively, one can deduce that an effective literacy instructional programme should include methodology that can be adapted to accommodate the individual's level of cognition

achieved (i.e. ZPD), the individual's cognitive learning style, as well as all the factors that may have impacted on an individual's learning and development.

Accordingly, Harcombe's CATLI is firmly based on the abovementioned constructivist, ecosystemic framework. By using this framework, all factors impacting on teaching, learning and usage of literacy skills can be examined carefully and therefore mediated optimally. This in turn will aid educators in understanding their learners better which will provide teachers with guidance for the differentiation of instruction.

A brief review and critique of some popular instructional literacy theories is pertinent here, as it follows that Harcombe's CATLI, apart from being underpinned by social constructivism, is also designed to improve on some of the inadequacies research has found in literacy programmes.

Skills-based/Phonic methods

Traditionally, literacy has been taught and still largely is taught, in the majority of SA classrooms, by using a skills-based, phonetic approach, which focuses on developing perceptual skills and activities such as letter-sound correspondences (phonetics) and syllabification. Often such skills were not linked to reading or writing for many months, as "basalese" texts were used in separate lessons, using a 'look and say' methodology, which mainly relied on giving learners flash cards of separate words to learn whole before they were given the book to read. These basal readers rely on the usage of high-frequency words in short sentences, all of which tends to have very little meaning (Pearson & Stephens, 1994).

Much research has suggested that these methods are inadequate for teaching children to read, for many reasons. For example, Troia's (1999) review of phonetic and skills-based (bottom-

up) instructional methods pointed out that findings claiming sound links between literacy learning and phonetic skills are not always valid.

Psycholinguistic methods

In contrast to the skills-based, phonetic approach, the psycholinguistic approach to literacy instruction attempts to explain literacy learning from a language point of view. In other words, language forms the basis of literacy acquisition, and so since language development is viewed in terms of the biological and genetic foundations of language, implying that children are biologically inclined to learn and use language (Lerner, 1993), which must be considered and applied to thinking about literacy learning and teaching. Thus the psycholinguistic theory postulates that children internalize a total language system for generating and comprehending new sentences and that they do not merely learn a set of sentences when acquiring a language (Lerner, 1993; Pearson & Stephens, 1994), which means that the psycholinguistic perspective emphasizes the value of literacy experiences focusing on making meaning with language (Pearson and Stephens, 1994). This perspective requires educators to rethink the relationship between teaching and learning and maintain that children will increasingly develop language in a stimulating environment where they are encouraged to use integrated (with literacy) language experiences (Lerner, 1993; Pearson & Stephens, 1994).

Based on psycholinguistic theory, the meaning-driven, whole language (top-down) approach to literacy instruction was adopted as a methodology that would counteract the comprehension problems encountered by using bottom-up, phonics-based instructional methods (Dednam, 2005). The whole language approach is a method that highlights the wholeness of the integrated language forms, comprising oral language, reading and writing (Lerner, 1993). This means that since reading and writing is viewed as an extension of

language skills, then literacy instruction should link all these forms of language together at all times (Harcombe, 2003).

Santa and Hoien (1999) reviews research on the whole language approach to literacy instruction, which confirmed effective reading achievement for most learners involved in the study. However, some findings indicated that learners did not always develop metacognitive strategies to improve their literacy skills; nor was their motivation toward reading improved (Harcombe, 2005; Quirk & Schwanenflugel, 2004; Santa & Hoien, 1999). Harcombe (2005) asserts that lowered metacognitive strategies and decreased motivation are attributed to a lack of emphasis on constructivist methods and ecosystemic influences in whole language programmes. She makes further reference to other whole language studies' findings that were confusing, as the methodologies reviewed were considered to be lacking in structure, making it hard to establish "which effects were achieved by which methods..." (Harcombe, 2005, p. 11). In addition, as in the case of the phonetic, skills-based approach, research indicates that not all learners learn to read adequately when instructed using the whole language approach (Dednam, 2005).

It is also interesting to note that although the whole language approach has been in existence and has been espoused by some practitioners for over at least two decades, largely practitioners and researchers have not generally adopted or reviewed this approach (Harcombe, 2005).

Balanced approaches

Due to the limited success of the bottom-up and top-down approaches, Stanovich's (1984) balanced approach to literacy instruction became popular. This integrative approach attempted to accommodate both phonics-based and whole language theories simultaneously

while teaching learners to read (Dednam, 2005). A particularly well-documented longitudinal study of a balanced approach, the Concentrated Language Encounter (CLE) was conducted in Thailand over a period of six years (Walker, Rattanavich & Oller, 1992), which showed good results, especially with second language children. The CLE appears to be grounded in an ecosystemic and constructivist framework, is highly structured and easily followed and understood by teachers (Harcombe, 2003).

Nevertheless, in her scrutiny of book reviews on literacy instruction methods using balanced approaches (cited by Freppon & Dahl, 1998), Harcombe (2005) inferred that the methods used, including the CLE, lacked explicit social-constructivist frameworks and ecosystemic theoretical underpinnings, as well as newer applications of theories on cognitive development, such as Feuerstein's Mediated Learning Experience. This prompted her to fill the gaps in existing programmes and to devise a method of literacy instruction that would promote the acquisition of cognitive and literacy skills for learners of all ages and that could be effectively used by teachers and university students as part of their training as learning support specialists.

Accordingly, she developed the CATLI, a process of literacy instruction grounded in ecosystemic and constructivist frameworks, incorporating recently researched theory and practice on literacy learning and instruction, cognition, motivation and emotion (Harcombe, 2005).

1.4.5 Theories underpinning the Cognitive Approach to Literacy Instruction (CATLI)

As mentioned above, Harcombe integrated the principles and practices of constructivist, ecosystemic theory and cognitive education, along with some aspects of methodologies from literacy instructional systems such as whole language and phonics-based approaches. A more in-depth examination the theory of cognitive education, along with brief reviews of some of the motivational and socio-emotional theories incorporated into the CATLI follows.

Cognitive education

The philosophy of cognitive education was derived from constructivist theorists (see the social constructivist section above). Amongst them were Vygotsky, Piaget, Feuerstein, Brown and Borkowski. Explicating the elements of this theory, Haywood (1997) states that, on the individual level, the primary goal of such education is to stretch the mind and to enhance people's ability to educate themselves and to freely move "across intellectual, occupational, and social boundaries" (Haywood, 1997, p. 237). Constructivists theorise that to fulfil this goal, adults and more able peers can establish the learners' ZPD and then provide suitable experience (Piaget) and forms of mediation (Vygotsky and Feuerstein etc) that would help learners to improve their concept development and at the same time develop metacognitive strategies so they can eventually direct their own learning (Brooks, 1989; Harcombe, 2005). This philosophy also stresses the development of logical thought processes to solve personal, social and moral predicaments (Haywood, 1997).

The mediational teaching style, endorsed by Feuerstein, has been researched repeatedly, and has been found to be a systematic and effective instructional method

(Haywood, 1997). When educators or more able adults, etc. facilitate the development of metacognition, they also help learners to bridge their metacognitive strategies from one subject to another as well as enabling them to use similar strategies in other fields (Harcombe, 2005).

It is interesting to note that when learners improve their levels of cognitive strategies to the level that they feel competent to do many learning tasks on their own, that their motivation to learn improves considerably. For example, research (Bandura, 1982; Schunk & Cox, 1986) has demonstrated a connection between instruction strategy and increased efficacy for successfully completing various learning tasks, finding that instruction which engenders in learners a sense of self-discipline and autonomy over their learning, raise self-efficacy, which in turn promotes motivation to learn (Bandura, 1977; Bandura, 1982) (See below for an additional discussion on motivation).

Given that psycholinguistic approaches and phonetic approaches fail to include the abovementioned aspects of cognitive education, Harcombe integrated these aspects of cognitive education into the CATLI (Harcombe, 2003). For example, all activities in the process are based on the child's cognitive level (i.e. ZPD) and the learning of metacognitive strategies is built in the various phases of the CATLI programme. However, another aspect of recent cognitive research also needed to be incorporated into the CATLI, namely the PASS model of Das, Naglieri and Kirby (1994).

Information processing: The PASS model

The cognitive processing theoretical model for describing the role of planning, attention, simultaneous and successive processing in cognition, which Das, Naglieri

and Kirby (1994) termed the PASS model, is based on the neuropsychological work of Luria (1973). This model has been thoroughly researched and has been found to be useful in designing strategies to accommodate learners' individual learning styles (Das, et al. 1994). However, it is also a useful concept as it helps trainees / educators understand the kinds of metacognitive strategies that learners particularly need in order to accommodate their own individual cognitive processing style (Harcombe, 2005).

Das, et al (1994) explicate the PASS model as a framework for understanding differences in learners' styles of information processing and how these processes impact upon their achievement skills. The PASS model of cognitive processing has three functional units. The first unit *attention*, keeps the brain in a state of arousal in order for processing to occur. In this state, attention needs to be directed at a specific required task, for example, listening to someone when they talk (Harcombe, 2003). Attention is considered a prerequisite for memory and learning and can be manipulated in learning and problem solving (Das, et al., 1994).

The second unit (conceptualised as two processes) *simultaneous* and *successive* processing, is responsible for the receiving, processing and preserving of information. Simultaneous processing centres on meaning in stimuli. It focuses on the instant integration of relevant information so that a global or whole picture emerges from this integration.

In contrast, successive processing entails the coding of detailed stimuli in the correct sequence, for example, remembering the order of digits in a telephone number.

Most tasks require both these types of processing (Das, et al., 1994; Harcombe, 2003).

The third unit is *planning*. At this stage of information processing, individuals use incoming stimuli and their existing knowledge base to solve problems. Plans are formulated, executed, evaluated and finally modified, if necessary (Harcombe, 2003). A key component of planning is metacognition, which includes individuals' awareness of and knowledge about their own cognitive processes (Das, et al., 1994). Accordingly, Harcombe integrated the PASS model into the CATLI process, applying it where relevant, particularly with the emphasis on helping the learners develop metacognitive strategies to compensate or enhance the relevant aspects of their cognitive processing styles.

Thinking ecosystemically about children and their development and learning also entails examining the effects of the interactions between themselves and others not only on the cognitive level, but also on emotional and motivational levels. Accordingly, various motivational and socio-emotional theories and practice were incorporated into the CATLI, which are discussed in the next section.

Motivational and socio-emotional theories

Much research has focussed on the effects that stress, poor motivation, negative emotion and negative behaviour may have on children's learning (Harcombe, 2003). What has not been researched in much depth is the effects that may accrue to learners and their learning if their teachers / facilitators provide an optimal emotional / social support system along with endeavouring to provide an optimal learning environment for the promotion of high motivation. Based on what is

known, however, Harcombe incorporated into the CATLI process practical applied mechanisms that enabled trainees to provide as much optimal emotional / social / motivational support as possible. Observations have provided evidence that this is one of the most successful aspects of this programme. In the next paragraphs a very brief overview of the theories and practice used in this aspect of the CATLI is provided. This very brief overview is all that can be done as space in this research report does not allow for in-depth discussions.

Theories and practices relating to social and emotional support, particularly Carl Rogers' notion of *unconditional positive regard* (Rogers, 1983), as well as the notion of *goodness of fit* (Thomas and Chess, 1977; Keogh, 1986) between temperaments were also incorporated into the CATLI. An ecosystemic framework of motivation (Harcombe, 2001) and other well-known theories and resultant practices that influence motivation and learning such as control theory (Glasser, 1986), modelling (Bandura in Mussen, et. al., 1990) were also included, along with operant conditioning (Skinner, 1938). In addition, including the notion of using the child's interests as much as possible in order to promote motivation to learn (Harcombe, 2003) was also integrated into the CATLI.

Constructivist principles applied to training university students in the CATLI process

Finally, the CATLI process has been used for the training of inclusion specialists at the Honours level for many years at the university. The execution of this training is based on constructivist principles, meaning that lectures were based on group and whole class discussions and problem-solving, case study applications. In addition,

the students engaged in delivering learning support, based on the CATLI process, to individuals and groups of learners in the university's community centre. Students also engaged in offering teacher support in schools in the greater Johannesburg context. Students received collaborative supervision for both applications, though the learning support implementation was based on observation and group supervisory support, while the teacher support was only based on group supervision, due to monetary constraints. The applied practice in this degree is not normal procedure in the country, as many universities consider that the cost of such support is too high. However, Harcombe (2003) argues that since a constructivist view posits that learning cannot be internalised until theory is applied to practice situations and until mediation is provided by more able practitioners, then accordingly, training programmes using the CATLI need to be done in a similar way. One of the aims of this study is researching this constructivist approach to training. The CATLI process is explained to some extent in the next section.

1.5 Description of Harcombe's CATLI intervention and procedure

Harcombe's CATLI (2003) was devised as a process of literacy instruction that is grounded in ecosystemic and constructivist frameworks, and which incorporates several proven aspects of psycholinguistic, cognitive education and cognitive processing theories along with some motivational, social, emotional and behavioural support theories. In the following section, the constructivist, ecosystemic assessment and intervention process used in the university community centre is reviewed. This process is fundamental to the practice of the CATLI, and any other systemic intervention/support that may be negotiated, such as parent and teacher support.

1.5.1 The Ecosystemic assessment process

Trainee learning support specialists usually receive their case allocations of children after the child's parents or schoolteachers established contact with the community centre. Many children are referred to the centre as they are not doing well in school or because they have behavioural or emotional difficulties. They would then undergo a psycho-educational assessment, which are ecosystemic in approach and form part of a joint problem-solving venture between the child, his parents and the assessor, while collaboration with schoolteachers and sometimes other professionals such as neurologists, occupational and speech therapists is established. The eco-systemic psycho-educational assessment process starts with an initial interview with the child and his family (Initial Assessment Consultation - IAC), after which a battery of cognitive, educational as well as emotional assessments are administered, along with some dynamic assessment. After supervision, a report is written. The findings in the report are mostly aimed at establishing which systemic interactions are delaying/promoting the child's development. Most of this information is derived from the systemic information gathered as well as estimates of the child's potential (which are based on score-related norms of achievement). A feedback interview follows, ideally re-gathering the whole family, whereupon all parties involved jointly reach decisions for intervention. The assessment period is usually spread over three to four weeks.

If learning support is decided on as an intervention, the family will be made aware that it takes place over an extended period of fourteen to twenty sessions (usually around 6 months, one session a week), during which time the child receives weekly instruction from trainee specialists using Harcombe's CATLI process. At the end of

the learning support, post-intervention assessment occurs, based on the same ecosystemic model as the initial assessment process. Before, during and after this learner support period, trainee learning support specialists engage in collaborative supervisory support with their supervisors.

During both assessment processes, and during the CATLI intervention, collaboration amongst participants (trainees, supervisors, parents and teachers) is viewed as an essential element of effective ecosystemic practice. As part of an ecosystemic, constructivist mediation process, while the learners are receiving learning support, teachers and parents are also offered support. Further in-depth support strategies, such as counselling and play therapy, which is also offered at the community centre, may be offered to parents and children respectively as needed.

The aim of these support structures is to facilitate teachers and other stakeholders to manage the systemic interactions themselves, rather than being excluded from the ring of experts as usually happens when a more traditional psycho-medical framework is used to underpin the intervention process. For the abovementioned support structure to operate adequately, a collaborative consultancy approach is required. This approach has been researched quite extensively over the last few years in various contexts (Denton, Hasbrouck & Sekaquaptewa, 2003), including that of inclusive education (Meck & Barrow, 2005). In summary, these studies suggest that the collaborative consultancy approach is a highly effective model for providing support to all stakeholders, not only in education but also in other contexts.

1.5.2. Harcombe's CATLI used in the learning support process

The first stage of Harcombe's CATLI involves case management in terms of telephonic contact with the parents to arrange a meeting, the initial family interview, which occurs before designing the learning support intervention.

After the pre-intervention assessment is conducted, trainee learning support specialists are supervised in their planning of Harcombe's learning support strategy as they fill in graphic organizers, mapping out information and characteristics about the child's strengths, interests and needs gained from the child as well from parents, teachers, and the psycho-educational assessment. Learning support trainees are trained, by a process of lecturing and ongoing supervision, to integrate all the acquired information into an ecosystemic understanding of the child, which is then used to generate learning support strategy plans (i.e. the differentiation of the curriculum to suit each learner's strengths and needs based on the notion of ZPD and goodness of fit) based on the CATLI process.

The supervisory process is aimed at providing learning support trainees with the necessary mediation and support in developing their own ecosystemic thought integrations and constructivist principles in literacy instruction, by means of constant reviewing and re-planning of the CATLI process plans.

Part of the planning process before learning support begins involves working out which emotional, cognitive, behavioural and motivational strategies the learner needs to experience in order to improve development. These plans would include what the trainee learning support specialist needed to implement as well as planning the

support that other parties / systems needed such as parent and teacher support and the procuring of social grants.

In the next section, the steps in Harcombe's CATLI will be outlined, including a brief discussion of the application of the various theories.

Step 1: Theme and lesson planning

Theme planning

Learning should occur within a theme that captures the strengths and interests of the learner and each lesson is planned according to the learner's chosen meta-theme. In order to plan this theme, the trainee specialists find out the learner's interests and strengths as well as and his or her cognitive needs on a conceptual / knowledge / literacy level. This information, along with required aspects from the curriculum, is used as a basis for planning the meta-theme. These meta-themes provide a strong meaning-linked central core that joins each learning support session to the other session, thus enabling learners to develop rich concepts that are linked strongly to language and literacy. Finally, aspects of the meta-theme and its contents are negotiated with the learners.

Theoretical application: The constructivist, ecosystemic assessment approach provides much of the information needed to help tailor the meta-theme. Constructivism also underpins the level chosen for each theme, based on the extent of the learner's cognitive development (ZPD) which at the same time dictates the method and materials chosen. For example, learners who have few concepts because of little experience and often even less mediation

will require much experience with concrete objects as well as much mediation to grow into their potential.

In addition, learners who need literacy support often have poor motivation to read and write and so tend to be inattentive during these tasks (McCombs, 1984). Low attention, according to the PASS model (Das, et al., 1994), means low levels of arousal and selective attention, which implies that very little learning occurs when the individual is presented with stimuli. By capturing the learner's attention with authentic tasks based on their interests (constructivism) and in which they played a part in choosing, usually means improved motivation, therefore improved attention, and thereby improved learning is likely to be achieved (Harcombe, 2003).

Step 2: Theme initiation

Themes are introduced with videos, stories, visits, and so forth, according to the learner's level of cognitive development (i.e. to develop the relevant concepts needed to provide a rich base for the meta-theme). By doing anything that is as real as possible, learners' current knowledge (concepts) are activated and linked to new concepts in the material (Gultig, 2001). For instance, it would be beneficial for learners to take them to a farm if they have never been to one when planning a meta-theme with sub-themes involving farming or farm animals.

Theoretical application: In accord with the theory of constructivism, through creating the relevant level of learning encounters according to learners' cognitive development level (zone of proximal development), as well as tailored mediation, learners are able to construct and expand their own knowledge very efficiently and richly. In addition, using language that is

linked closely to their experiences enables the optimal development of language (constructivism and psycholinguistic theory).

Step 3: Literacy experience / Shared Reading

In this step some of the literacy experience that learners may have missed is provided. This means that the teacher/specialist reads books to the learners that are slightly above the learners' ability to read for themselves, both in terms of knowledge and language and literacy skill.

However, the knowledge and language must not be so advanced that the learners do not have enough conceptual and language development to make sense of it. In addition, literacy conventions and metacognitive strategies that help learners focus on meaning are mediated during the process of reading aloud. The whole process not only helps the learners to develop knowledge of literacy conventions, but also helps them to improve their general concept (knowledge) and language development, as well as providing an excellent vehicle for improving motivation to read and to think.

During this step, the teacher finds some suitable books and negotiates with the learners, which one will be read to them. Then he or she goes through the book and explains it in terms of the cover, and the frontispiece regarding the identity of the author, the illustrator/artist and so forth and using the correct terminology. In addition, the correct terms for plot, imagery and the like, even for the very young are also used and, finally any background knowledge known about the writer is also mediated. Then the teacher pages through the book showing the pictures and discussing briefly without revealing too much of the plot, what is happening,

which raises motivation to hear the story, as well as providing a platform for introducing any new concepts needed to help the learners make sense of the story.

Then the teacher reads the story to the learners as expressively and as interestingly as possible. This modelling of reading enjoyment and having fun while reading, is invaluable in promoting a love of reading. During the course of reading aloud, the teacher interacts with the learner orally, asking open-ended questions about the content and feelings about the content, as well as meditating metacognitive strategies such as prediction and problem solving. Finally, the book is evaluated together.

Theoretical application: Much research shows that children who have at least 1000 hours of literacy experience before they enter school are highly likely to become literate (Clay, 1991). Since many SA learners do not have this experience it is considered fundamental to supply it in the CATLI process as well as encouraging teachers and parents/caregivers to read to their children. In addition, the emphasis on concept and language development and the focus on meaning are based on psycholinguistic theory, Feuerstein's MLE as well as other aspects of literacy instruction theory.

Step 4: Construction tasks

Construction tasks consist of activity based tasks for younger learners (concrete level) and text-based activities, (more suitable to learners on the representational and abstract levels). These tasks are used to stimulate the learner's thinking (i.e. metacognitive strategies) as well as for building language and concepts (knowledge) and helping the learner link these aspects to literacy and thereby improve motivation to read and write. In addition, these tasks are designed to suit the learner's zone of optimal development, i.e. their level of cognitive

development (i.e. concrete, representational and abstract). Construction tasks are strongly linked to the meta-theme and therefore the children's interests, as well as being strongly linked to language and literacy. Since these tasks are always connected to real-life, they also provide an authentic purpose for writing and reading afterwards. The activity is done by the learner with the support of the specialist / teacher, with the emphasis on speaking about everything that is done, and on using relevant metacognitive strategies. The products are admired, discussed and displayed when finished.

After the construction task a discussion of a plan for writing a story what was done in the activity is done and scribed by the facilitator on a graphic organiser. The learner then dictates an orally negotiated text, sentence by sentence, based on this plan, which the teacher writes down in a pre-made book. The learner reads each sentence once it is written. While the writing is being negotiated and written, the meaning is linked intensely to the language and the literacy process. Some attention to details can occur, such as drawing attention to a full stop, a rhyme, and so forth, while writing. Finally, the story is read together, in unison, if necessary.

Theoretical application: This is one of the most important steps of the CATLI, even though; of course the other steps are also important. This step is where the learners' **zone of proximal development** is particularly addressed and the activities that are planned are done at the correct level of the learners' cognitive development. So the section is based firmly on constructivist principles, both in the planning and execution levels. As the learners 'do' something, constructivist principles are again used, along with some aspects of psycholinguistic theory. And finally, Feuerstein's MLE is used to underpin the mediation of metacognitive strategies.

Step 5: Publishing

At this stage, the story is typed up into a book for the learners or they write the story into their small books, or it is captured in magazine format, which is illustrated by hand or decorated with magazine pictures etc. The story is then read repeatedly from the book at least two or three times if not more by the child at home and in the sessions. Publishing the book gives authentic meaning to reading and writing. It also provides the opportunity for the learners to practise reading (repeated reading) and improve word recognition. Furthermore, it helps them to build their vocabulary and concepts, as well as allowing them to just enjoy something they have made. This gives them a sense of accomplishment, mastery and motivation.

Theoretical Application: This stage is largely based on psycholinguistic theory as well constructivist theory as the need to facilitate the understanding of literacy conventions (i.e. publishing and book knowledge), apart from providing children with material to read and read again to improve word recognition (much research shows that repeated reading improves word recognition).

Step 6: Multi-level teaching

Though some differentiation will occur in the other steps of the CATLI, this step is particularly aimed at providing differentiated tasks where it is necessary. This step is also more like the 'direct instruction' so often done solely in previous instructional programmes, though they are mostly done in the context of the theme and construction tasks etc, which gives the scaffolding required to make these tasks more understandable. In addition, in the CATLI the tasks have been expanded, made more fun and 'doable' as well as including learning various metacognitive strategies, especially to help those learners whose successive

processing and/or extreme lack of language and literacy experience have been detrimental to their literacy learning. The various multi-level teaching / learning strategies include *repeated reading, sentence and word matching games, shared writing, tracking, handwriting practice and sound families (a cognitive approach to phonics).*

The strategy of *repeated reading* has been explained above. It involves learners' reading the texts they have dictated and written over and over again at this level. In *sentence matching*, duplicated sentences taken from their own books are cut up, mixed and then are matched to the original intact sentences. This task helps the learner to practice sentence construction and linking meaning to vocabulary and punctuation, as well as helping with word recognition.

Word matching is a fun way of practicing instant word recognition. Learners play word matching games, for example, Lotto and Bingo, using the words from their own books. *Tracking* exercises are also done, which are used as a vehicle for focusing on visual alphabetic detail as well as for practising metacognitive strategies such as self-monitoring.

During *shared writing*, the learner is encouraged to engage in journal writing. The journal can be exchanged with the learning support specialist possibly on a weekly basis. For *handwriting practice*, learners, who are able, can copy the sentences they have generated in their publications. Those who cannot do this can trace over 'dotted' words in sentences. For those learners who have not yet developed a sound concept of rhyme in the English language, *rhyming* by means of poems, songs, nursery rhymes, and so forth, are useful and provide fun activities for every day. Teaching learners to hear rhymes in words is necessary before they are able to sound out words for spelling. This stage of the CATLI also includes (if necessary)

the teaching of *sound families*, a cognitive approach to teaching phonics, which helps learners to develop sound cognitive strategies for encoding and decoding words.

Theoretical application: This stage allows the educator to design strategies to provide practice for individuals according to their individual needs. In this way, the individual processing styles of each learner, as denoted in the PASS model, are accommodated. Similarly, by interspersing interesting, fun activities with more repetitious, bottom-up tasks throughout the learning experience, learners are more likely to keep their attention focused. And various metacognitive strategies are mediated, which are based on constructivist theory.

Chapter 2

Methodology

2.1 Research design

The purpose of the research study was to evaluate the effectiveness of Harcombe's CATLI, an ecosystemic, constructivist approach to literacy instruction, used at a Johannesburg university community centre. Given the study's interest in perceptions and experiences, a phenomenological approach was adopted as a design. According to Leedy and Ormrod (2005), the phenomenological research study is qualitative and retrospective in nature, wherein the researcher is seeking out a better understanding of the perspectives of those who have experienced a certain phenomenon. These multiple perspectives on the same situation, helps the researcher to make generalizations concerning the participants' experiences from an insider's perspective (Leedy & Ormrod, 2005). Nevertheless, this study did not make any generalizations to the wider population. The study also used data from the CATLI examination equivalents submitted by the trainee learning support specialists. In addition, pre- and post-test data from formal reading assessments, using the Stanford Diagnostic Reading Test (SDRT) scores were used, as were some qualitative assessment findings.

2.2 Sampling

The chosen sample for this study included the nine 2007 trainee learning support specialists who were involved in the learning support training programme for Honours students at the community centre of a university in Johannesburg, South Africa and the nine parents of the 11 learners involved, while the other participants of this programme, namely the learners and supervisors, were not personally

involved. The trainee and parent participants were involved in an ecosystemic, constructivist assessment and intervention process, which included educational assessments and learning support (which was mainly Harcombe's CATLI) as well as collaboration amongst all the participants. The majority of the learners spoke English as a second language, as well as each one being affected by various contextual, systemic factors such as low socio-economic status, high stress levels, inadequate social support and limited access to literacy materials and literacy experience, all of which contributed to learning and developmental barriers.

Though the trainees supported many of the learners' teachers, the teachers were not considered for being included in the study as there was insufficient time allocated to complete the research. Neither of the two supervisors involved in the process were included in the study in an attempt to exclude any bias on their part.

All the student participants were female and between 23 and 60 years of age with diverse qualifications, mostly experienced teachers of whom some held undergraduate, some honours and one Ph.D. degrees. Being part of the programme, all the student participants were part-time B.Ed. Honours students at the university at the time of implementation, i.e. 2007. Additional participants include the parents of the children who received the intervention during 2007.

Assessments and interventions took place at the community centre, situated on the university's main campus. The community centre is accessed by members of the public and aims to provide financially subsidised psychological and educational services to adults, families and children alike.

Owing to the nature of the study, the sample was purposively selected, allowing for data collection from a group expected to have diverse perspectives on the effectiveness of Harcombe's CATLI. As the aims indicate, the objective for the study is firstly to evaluate the participants' perceptions regarding the theoretical underpinnings of Harcombe's CATLI and, secondly, to gain insight regarding the effectiveness in which Harcombe's CATLI is supporting learners' development and literacy skills.

2.3 Method of data collection

Data was collected by means of two measures, namely, questionnaires and extant documentation.

Questionnaires

Self-report questionnaires were completed by the trainee learning support specialists as well as one parent of each of the learners attending the learning support programme. Self-report questionnaires were considered the most appropriate method of data collection in this study since it was the most cost effective method that would ensure anonymity and truthfulness of responses. It also provided the opportunity to use information in the form of direct quotes from the questionnaires. Given that the researcher was part of the 2007 learning support programme, questionnaires could be used without any direct personal contact with the respondents, as the questionnaires were distributed and collected after being filled out. By using such self-report questionnaires, anonymity was assured; since participants could respond anonymously, without indicating their name. Additionally, they could respond to questions more spontaneously than they would in a personal interview. In this way,

biases were minimised (Bless & Achola, 1988; Leedy & Ormrod, 2005). Bless and Achola (1988) add another advantage to questionnaires, seeing that questions, requiring reflection, are dealt with more appropriately when the respondent has more time to answer as there is no waiting interviewer to elicit a hasty response. These questionnaires were guided by questions relevant to each parent and trainee participant, and phrased in an open-ended manner, so as to allow freedom of expression without leading the participant into a particular direction of response (Leedy & Ormrod, 2005). On the other hand, some insight may have been lost, due to not being able to interview respondents personally and question further, for example, if respondents answers were not focused on the question. (See Appendix C, pages 99-104, for a copy of the parent and learning support specialist questionnaires.)

Documentation

Documentation, or extant data in the form of trainee participants' examination equivalents of their learning support cases that include pre- and post- test results (which are largely based on criterion referenced scores obtained from the Stanford Diagnostic Reading Test; SDRT as well as some qualitative evidence) of learners' assessments were examined and integrated with the findings of the questionnaires with the various participants. McBurney (2001) explicates documentation as employing existing data from an earlier period of time, of which the researcher had no part in collecting. According to Leedy and Ormrod (2005), documentation, such as official records, reports and assessments are valuable sources of information which can be used to confirm or refute the researcher's interpretations of other sources of data; in this case, questionnaires.

Completed data obtained by means of questionnaires extended the trustworthiness of the data. The types of documentation used were useful in relation to the questionnaire results. Such documentation included various sources of information recorded in the written examination equivalents that were compiled by the trainee learning support specialists. The examination equivalents comprised documentation, which highlighted the different aspects of Harcombe's CATLI learning support process, including reports on parent contact and school visits, reports on learners' progress and termination of learning support reports, as well as assessment results and observations. Test data included pre-and post-intervention assessment data, both quantitative (from standardised reading tests), and qualitative data (from informal assessments of reading, writing and spelling). In addition, student trainees' evaluations of the total learning support process as well as evaluations of their own progress were obtained from these compilations. This provided a vast collection of quantitative and qualitative data that revealed the effects of the learning support process on trainees and learners, as well as their experiences thereof.

2.4 Procedure

The researcher commenced the study once permission from the university's ethics board was obtained. The researcher first obtained consent from all the participants. Participants were informed that by answering the questionnaire, they granted consent for their participation in the study. In order to ensure anonymity of the questionnaire responses, no participant names were indicated on the questionnaire. On receipt of the data, the completed questionnaires, as well as the trainee participants' examination equivalents were allocated codes (See Appendix D: Results Tables), thus not revealing any identifying information about the participants. In this manner,

the researcher did not possess enough knowledge to be able to connect questionnaire responses to her previous colleagues, thus limiting bias and facilitating openness in their responses.

Before commencing the distribution of questionnaires, the researcher made telephonic contact, inviting participants and explained the study, its aims and benefits. After interest was indicated, the researcher arranged convenient ways to distribute and collect answered questionnaires from the participants.

Whilst awaiting the questionnaire responses, the researcher examined the documentation from the relevant participants. As described earlier, the documentation included student participants' examination equivalents of their 2007 learning support cases and pre- and post-test results (based on scores obtained from the Stanford Diagnostic Reading Test; SDRT and from qualitative test results) from learners' educational assessments.

All the data obtained during the research process was handled with the strictest confidentiality and safeguarded under lock and key in the researcher's office. The researcher was the only person who had access to the data. After processing all the data and final evaluation of the research report, all data obtained from the study, except that which is included as appendices in the final report, were destroyed. All documentation was handed back to the university, where it is safeguarded in their resource filing room. Participants were informed that, after completion of the report, they may request a summary of the research findings.

2.5 Method of data analysis

Both measures (documentation and questionnaires) were then analyzed; using a thematic content analysis in conjunction with the data obtained from pre- and post-intervention testing. The researcher's methods for data analysis were mainly based on Leedy and Ormrod's (2005) chapter on qualitative research methodologies. Being qualitative in nature, this study generated a deep amount of information from the data collection process that was interpreted. In order to protect the identities of the participants and to reduce the risk involved of them exposing their views, no participant names were indicated on the questionnaire responses and the questionnaires, together with the documentation were coded to help to ensure validity in the results of the study. In addition, questionnaire responses were retyped so as to avoid the recognition of any participants' handwriting.

The researcher then grouped the responses into themes and categories and looked for similar and opposing perspectives on the topic of discussion. Apart from the quantitative data gained from the SDRT scores, the qualitative data obtained from the questionnaires and the documentation was interpreted using a thematic content analysis. In order to organize the data, Post-it notes, used as indices, assisted in identifying and trailing common themes in the participants' descriptions of their experiences and perceptions. After all the data was read thoroughly, the researcher collated the information under each theme into a graphic organizer in table format (See Appendix D), to get a general sense of the emerging patterns. This aided the triangulation and consequent interpretation of each theme. Through using a thematic content analysis, the researcher was able to identify additional emergent themes that transpired in the process.

Seeing that data was obtained from different measures, that is, questionnaires and documentation such as examination equivalents and formal reading test scores, a considerable amount of data was gathered. Data triangulation was useful to seek out convergence or agreement in the different sources of data in an effort to support the validity of particular findings (Leedy, & Ormond, 2005). The researcher thus attempted to search for themes of information that all point to the same conclusions about the findings.

2.6 Ethical considerations

The Code of Ethics for Research on Human Subjects of the University of the Witwatersrand was followed and adhered to throughout the research process. This implies that the researcher respected and agreed that participants' interests remained a priority throughout the entire project.

Prior to the commencement of data collection, participants all received telephonic, then written information (See Appendix A, pages 96 - 98) regarding the research, providing a clear description of the rationale, objectives and procedures of the study, whereupon they were invited to join in the proceedings. Protection of participants' identities was ensured by a coding system and written statements concerning anonymity and confidentiality were issued, guaranteeing that no identifying information would be used in the report or questionnaires that can be traced back to them. Given that the data was coded, it remained unidentified to the researcher and her supervisor. Every participant, including parents and student trainees, was informed that participation is entirely voluntary and that they could choose to

withdraw from the study at any point during the process without being disadvantaged in any manner.

The data collected during the process was safeguarded and locked away in the researcher's office. After the researcher has interpreted the data, she handed over all the raw data to her supervisor, who is the only additional person who has had access to the data. Only once the data obtained from this study has been processed and marked, will it be destroyed. Due to ethical considerations, no children was directly involved in the research process, as there was sufficient data to establish the effects that the intervention process has had on the child.

Chapter 3

Results

This chapter presents and elaborates the results of the current study. The data was obtained from questionnaires completed by parents and trainee learning support specialists as well as from examinations written by the trainee learning support specialists. Then the data analysis process was collated into tables (See Appendix D, Tables1 -12). The analysis provided triangulated findings that addressed the aims of this research report. In this chapter the analysis presented is divided into two distinctive sections, namely, *Ecosystemic Principles*, which relates to the first research aim, that is, participants' perceptions regarding the ecosystemic and constructivist principles of Harcombe's CATLI, and secondly, *Effects of Harcombe's CATLI on learners' development*, relating to the second research aim, that is, evaluating Harcombe's CATLI's effect on improving children's literacy learning in a South African university training context.

The findings are discussed in relation to the research questions in the text below and are substantiated by direct quotes (evidence obtained from questionnaires) and from extant data, which are identified by the following codes:

LSSQ 1 – 9	=	Questionnaires answered by trainee learning support specialist participants
PQ 1 – 9	=	Questionnaires answered by trainee parent participants
TD 1 – 11	=	Test Data regarding the CATLI Intervention, obtained from examination equivalents submitted by the trainee learning support trainees in 2007
ELS 1 – 11	=	Evaluations of the learning support (Harcombe's CATLI) process compiled by the learning support trainees for exam purposes in 2007

Introduction

The amount of data available from this study is very considerable, which makes the findings impossible to report in totality. Accordingly, only a few participants' comments from each theme are recorded in this chapter to substantiate the findings. However, the readers can access the rest of the participants' comments, should they want to, from the Thematic Analysis Tables (See Appendix D, Tables 1 - 12, pages 108 - 178) as every code reference to the relevant theme is reported in parentheses. Please also note that quoted information is occasionally provided in parentheses in order to clarify the meaning so that the complete quote does not have to be provided. This is done in an effort to make the results meaningful and clear to the reader, without making them too lengthy.

Findings regarding Aim 1, which are embodied in 7 themes, are presented as follows:

3.1 Theme 1: Application of ecosystemic principles to understanding the learner's development / process (See Appendix D, Table 1, p.108)

Overview of findings

The study aims to investigate, amongst other aspects, the participants' perceptions of the ecosystemic principles that underpin the CATLI. Analysing the extent to which the participants applied the ecosystemic principles to understanding the child's development gives some indication of how they may have internalised these principles. Analysis of the data suggests that all the learning support participants used the terminology of ecosystemic theory. However, when analysing the perceptions in more depth, it appears that only a minority of the learning support participants appeared to have a good understanding of ecosystemic principles (LSSQ 7; ELS 1, 3, 4) while a small majority had a fair understanding

of ecosystemic principles (LSSQ 2, 4, 5, 8; ELS 2, 5, 6, 7, 8, 10, 11). On the other hand, a small minority appeared to have an inadequate understanding of ecosystemic principles (LSSQ 3, 9; ELS 9), which suggests they still use a medical model to inform their thinking. These findings are quite encouraging as they suggest that the combination of lectures, practice and supervision has contributed to the majority of the trainees understanding ecosystemic principles. A detailed analysis of the findings follows.

Understanding ecosystemic principles

A minority appear to display a good understanding of ecosystemic principles (LSSQ 7; ELS 1, 3, 4). This better understanding of ecosystemic principles is captured in the following statements:

LSSQ 7: "...this [ecosystemic] process is highly beneficial in identifying all the barriers to the child's learning as well as in addressing these key barriers. These barriers may range from the child's temperament, situation at school as at home, as well as previous advantages afforded to the child."

ELS 1: "(Name) has an older brother and a younger sister who both perform well academically. The family has undergone financial strain when (Name's) father lost his first job. This stressful period in the family life has impacted negatively on his academic performance as he is a very sensitive child and is very aware of tension within his family. Other life events that could have contributed to his emotional state are the number of times the family moved house in his life"

.

ELS 3: "There were a number of systems promoting his learning and development, like his strong emotional and academic support at home (particularly from his mother). The good support and understanding... from his class teacher also contributes positively towards his development and learning, as well as friends he has made at school. ... some challenging systems like his high performance anxiety related to reading and writing and his low concentration which occurs through an increase in anxiety(delayed his learning)."

The content analysis also suggests that a small majority of the trainee participants (LSSQ 2, 4, 5, 8; ELS 2, 5, 6, 7, 8, 10, 11) had a fair understanding of ecosystemic principles, as a few of their comments indicate:

LSSQ 2: "... it is important to know everything about them, especially their home life and relationships within that context as it helps one to understand certain behaviours of that child."

LSSQ 5: "Understanding his background and home influence widened my understanding of my pupil"

LSSQ 8: "...the consideration of a range of factors that could impact in learning was important in understanding strengths and weaknesses

ELS 5: "Part of the well-being of each learner is to have the ecosystemic approach to their learning where parents and class teachers are also involved in understanding the learners more."

ELS 7: "An ecosystemic framework was used, focusing on the impact of interpersonal support evident in the relationships between him, his parents, his school and peers; as well as the environmental influences of the political environment ";

ELS 8: "...it became clear that she needed support in a variety of dimensions - social, emotional, cognitive, motivational and behavioural."

Finally, another minority appeared to have an inadequate understanding of ecosystemic principles and probably tend towards using a medical model in their thinking (LSSQ 3, 9; ELS 9). For example:

LSSQ 3: "I think it (ecosystemic approach) is a valuable and informative assessment process. It allows the clinician to assess the child from a holistic perspective, thus gaining a well-rounded, full understanding regarding the child's functioning, and possible areas of weakness both educationally and psychologically."

LSSQ 9: "(IAC) Very helpful and informative as far as getting to know about the learner."

ELS 9: "My learner's background was not really preventing her from any improvement as she is fortunate to attend a private school."

It was interesting to note that though these trainees largely use ecosystemic terminology, the focus is all on the learner, thus indicating alignment to the medical model perspective. It could therefore be claimed that a small percentage of trainees are likely to retain a psycho-medical perspective, which will affect the way they implement the CATLI, especially regarding the extent to which they attempt to intervene on a parent / teacher / economic level.

None of the parents commented on the holistic nature of the process and therefore do not appear to have embraced an understanding of the ecosystemic framework. Parents will only gain insight into this framework if trainees help them to, which suggest that students did not mediate this enough. However, the examination data showed that some trainees did give parent support, but maybe this support did not elucidate how the effects of working together to help the child's development improve.

3.2 Theme 2:Understanding / Using the Constructivist Principle of Designing the Learning Support Programme to Suit Individual Needs and Strengths (ZPD)

(See Appendix D, Table 2, p.112)

Overview of findings

The findings indicate that the majority (7) of trainees appeared to have a reasonable understanding of the theory and practice of designing the CATLI process to suit individual Zone of Proximal Development (ZPD's) /needs and interests (LSSQ 2,3,4,5,6 and ELS 2,3,4,6,7,8). In addition, only two trainees appear to have a very good understanding of how to design a CATLI programme to suit individual needs (LSSQ 7 and ELS 5). On the other hand, a small minority (5) do not appear to have gained even a reasonable idea of designing the CATLI to suit individual differences (LSSQ 8, 9 and ELS 1, 10, 11). Similar to the findings of Theme 1, the combination of lectures, practice and supervision helped the majority of the trainees to develop an average understanding of designing the CATLI programme to fit learners' zones of proximal development. These finding augers well for the CATLI's effective implementation. An analysis of the findings follows.

Designing the CATLI to suit individual ZPD's

Only two trainees appeared to have a good understanding of this aspect (LSSQ 7 and ELS 5), as they made very specific comments on adapting the CATLI to suit individual needs. For example, learning support trainee (LSSQ 7) commented that the *"CATLI is dynamic and flexible. It ... is adaptable according to the learner's needs"* and another trainee (ELS 5) wrote that *'by assessing his cognitive developmental level and processing style I could accommodate them into the L.S. programme".*

In addition, the majority (7) appeared to have a reasonable, though often fairly generalised idea of how to design the CATLI to suit individual needs (LSSQ 2,3,4,5,6 and ELS 2,3,4,6,7,8). For example, three trainees (LSSQ 2, ELS 3, ELS 7) commented that the CATLI *"...gave me insight into the needs of the child thus allowing me to design lessons to suit his/her needs"* and *"aspects of the CATLI, were catered to accommodate his specific learning needs and style... each session was developed according to his pace and needs, thus ensuring optimum learning and development"* and *"as (Name) had little experiences and therefore general knowledge, it was necessary to fill his gaps with real experiences, as well as to bridge his knowledge and new concepts."* Three trainees (LSSQ 4, 5, 6) also commented on the need to design the CATLI in order to include the learner's interests, which is one of the ways of ensuring ZPD fit as well as contributing to good motivation. For example, a trainee (LSSQ 5) commented that the *"...programme could be tailored to enhance these using the child's specific interests resulting in increased motivation"*. Another strand of comments suggests that some trainees (ELS 2, 4, 8) were aware of the need to adapt activities to suit cognitive developmental levels and an example of this is the comment that *"...adapting this to accommodate her need for more concrete activities was important to ensure that learning would take place"* (ELS 8).

Findings also suggest, however, that a minority of four trainees (LSSQ 8, 9; ELS 10, 11) seemed to have a fairly limited understanding of adapting the CATLI planning to fit learners individual ZPD's as they either did not comment at all (LSSQ 9) or they made very generalised comments that do not show much understanding like *"the CATLI allows a range of needs to be addressed, with different activities in the CATLI addressing different needs"* (LSSQ 8) and *'the majority of sessions were of a concrete nature in order to overcome the language barrier"* (ELS 11). One trainee (ELS 10) appeared to have not learnt too much about adapting the CATLI to suit

individual needs as she commented, *"it was a challenge working with (Name) as I was unsure of the level that I should be working on."*

None of the parents commented on this at all, which could suggest that little mediation between the learning support specialists and the parents occurred, regarding this notion, anyway.

3.3 Theme 3:Collaboration between stakeholders for supporting the child's (and other parties) development (between learning support specialist, parent and teacher)

(See Appendix D, Table 3, p.115)

Overview of findings

Collaboration is posited as an integral component of the CATLI process, since it is grounded in the ecosystemic approach. The participants' understanding of the process of collaboration and evidence of the use of collaboration indicates the extent to which they may have internalised the principles of the ecosystemic approach in the CATLI process.

It seems apparent from the data that all the trainee learning support specialists wanted to collaborate, or at least perceived that it was helpful to collaborate with parents and teachers at least. And in fact it seems that a fair majority (9) of the LSS did collaborate with parents, though the quality of the collaboration varied from just making sure the learner got the therapy regularly to helping parents intervene at home (LSSQ 2, 3, 4, 5, 6, 7, 8 and PQ 1, 6, 5, 7, 8, 9).

A small number of trainees also collaborated with teachers, four directly with the teachers themselves (LSSQ 4, 5, 6, 7) and 2 indirectly through parents (LSSQ 2, LSSQ 3). One trainee

also collaborated with the learner's trainee play therapist (LSSQ 7). Three trainees did not collaborate with parents meaningfully (LSSQ8, 9 and PQ 2) and five trainees did not collaborate with teachers (LSSQ 2, 3, 4, 8, 9). The trainees also gave reasons why they did not collaborate as much as they wanted to (LSSQ 2, 8, 9). This interest in collaboration, even if not always carried out effectively, does suggest that most trainee participants have at least internalised ecosystemic principles, and see the value of supporting parents and teachers in helping their children develop well.

Trainee collaboration with parents

A fair majority (7) of the trainees did collaborate with parents, though the quality of the collaboration varied from just making sure the child got the learning support regularly, to helping parents intervene at home (LSSQ 2, 3, 4, 5, 6, 7, 8 and PQ 1, 6, 5, 7, 8, 9). Some trainees collaborated with the parents in order to empower them to help their children. For example one trainee (LSSQ 3) showed good insight into how collaboration improves development as she commented, *"My learner had a very supportive mother who was very involved in her son's LS programme. This positively contributed to the collaborative process of the school and the family, which allowed the teaching of the LS programme to be extended to the home and the school. This helped my learner further his development and allowed him to progress beyond his weekly sessions"*. Another trainee (LSSQ 7) commented, "*Both parents and teachers implemented various suggestions and were keen to discuss what was happening at home and in the classroom which meant that if difficulties arose they could be addressed in LS."* while trainee LSSQ 8 said that *"...the learner's family and school helped facilitate in the process."*

Five parents (PQ 1, 5, 7, 8, 9) confirmed the trainees' comments as they had offered the parents support. There seems to be two strands to these comments, firstly that the collaboration was made in order to empower the parents to help their children while the other strand was just to inform the parents and / to help the parents to make sure the children came

to the LS sessions. In addition, parents who perceived that they were enabled to help their children, made comments like *"She talked to me very much on the phone and told me what I must do to help him also.'* (PQ 1) and *"The communication was open and good for us as parents as it helped us to understand our child's problems and ways of learning better"* (PQ 9).

The rest of the parents' comments seem largely to do with being kept up with the progress of their children. For example, one parent (PQ 5) commented, *"Communication was good throughout and I was kept informed as to (Learner's Name) progress."* While another (PQ 8) shared that *"My experence was the teacher talk to myself on a regular basis it was helpful and tells me how the girl is doing all the time."* There seems to be some discrepancy between the perceptions of the trainees and the parents, as the trainees appear to perceive they offered the parents more support than the parents did.

Collaborating with teachers

A minority of the trainees (4) also collaborated with teachers, some directly with the teachers themselves (LSSQ 4, 5, 6, 7) and two indirectly through the parents (LSSQ 2, 3). Those trainees who made personal contact with teachers made comments such as the following: *"It was difficult to have regular face to face contact with teachers as I teach and could not meet teachers in school hours. Therefore we mostly communicated telephonically."* (LSSQ 4) and *"Since my learner was at the school where I worked I was able to collaborate with the teachers and parents quite freely; they were also very open working together"* (LSSQ 6) and: *"...the learner's family and school helped facilitate in the process. I was able to collaborate with all..."* (LSSQ 7).

However, six participants did not collaborate with teachers (LSSQ 2, 3, 4, 8, 9) and some of the reasons trainees cited for this was lack of time, "*I teach and could not meet teachers in school hours."* (LSSQ 5) and teacher uncooperation *"In some schools the teachers were difficult to get hold of as they were teaching and would often not phone back in their free time."* (LSSQ 2)

Perceptions of collaboration

It was interesting to note the majority (7) of the trainee learning support specialists seemed to perceive that collaboration contributed to many benefits for all stakeholders (LSSQ 2, 3, 4, 5,7, 9; ELS 2, 4, 5, 9, 10), though only 3 commented that it was essential to the process (LSSQ 1, 7; ELS 7). This finding suggests, along with the findings that (see previous sections) the support offered to parents and teachers was minimal, once again that only a small minority had actually internalised the notion of the necessity of collaboration for the CATLI / learning support to be highly effective. This suggests that largely the trainees comprehend intellectually the reasons for collaboration but may not yet be convinced of the practical reasons for doing it.

A description of the participants' perceived reasons for the benefits of collaboration follows, however since there is a considerable amount of data an overview of the themes are presented, with only minimal participants' comments cited.

The following themes emerged after the analysis:

Trainee perceptions on collaboration regarding the overall CATLI / learning support process: Only three participants (LSSQ 1, 7; ELS 7) considered that collaboration was essential *"as intervention was occurring at many levels. This facilitated the learning process immensely"* (LSSQ 7) and another trainee (LSSQ 1) commented, *"I don't believe [the CATLI] intervention would help without this collaborative effort"*.

Trainee perceptions regarding collaboration:

A majority (7) of the trainee learning support specialists considered that collaboration helped the learners improve emotionally, cognitively, academically and behaviourally (LSSQ 2, 3, 4,

5,7, 9; ELS 2, 4, 5, 9, 10). For example, one trainee commented, *"The aspect that promoted learning was the support from the parents and the cooperation from the teacher"* (ELS 9). In addition, a few trainees (LSSQ 2, 5, 6, 9) considered that collaboration was helpful as *"...it provides a better understanding of the learner from different perspectives."* (LSSQ 5)

Parents' perceptions regarding collaboration

Two parents (PQ 5 and 9) perceived that collaboration helped them understand the children's progress. This was evident as she proclaimed that: *"My experence was the teacher (trainee) talk to myself on a regular basis it was helpful and tells me how the girl is doing all the time."* (PQ 9). Another parent perceived that collaboration helped them "*...to understand our child's problems and ways of learning better"* (PQ 8)

3.4 Theme 4:Collaboration between Stakeholders for Supporting the Child's (and Other Parties) Development (Between Learning Support Specialist and Supervisor).

(See Appendix D, Table 4, p.121)

Trainee perceptions on collaboration with supervisors

Since the CATLI process is underpinned by constructivist theory, the Vygotskian notion of having a more able other to help mediate the process is considered necessary in order to train students in the CATLI approach. Accordingly, these students were provided with supervision, (one supervisor for 4-5 students who supervised students before, during and after the learning support). An analysis of their perceptions is presented below.

Trainees' positive perceptions of supervisor support

Analysis of the results suggests that half of the trainee Learning Support Specialists perceived that the collaborative supervision they received was necessary for their own and for their learners' development (LSSQ 5, 7, 8; ELS 2, 3, 4, 5, 8, 9). For example, one trainee commented, *"My supervisor was able to guide me when I wasn't quite sure of the process... (She) guided me when I made mistakes and made suggestions which would enhance his literacy acquisition and proficiency. I feel this all improved my learner's development."* (LSSQ 5) while another commented, *"In terms of my interaction with my supervisor, it was very productive and contributed very positively to my understanding and developing."* (ELS 9)

Trainees considered that various aspects of the supervision was particularly helpful, such as the supervisor playing a "*supportive role"* (ELS 8) and *"being helpful"* (LSSQ 8; ELS 3). The relationship with the supervisor was also perceived as being "*open, caring"* (ELS 2). In addition, some trainees (LSSQ 2; ELS 3) perceived that their supervisor helped them gain *"insight and knowledge."* (LSSQ 4). In addition, students commented on how such supervision helped their learner's development (LSSQ 1, 2, 3, 5, 7, 8) *"...I feel this all improved my learner's development"* (LSSQ5). Finally, one student sums up the collaborative relationship between supervisor and student well as she commented *"My supervisor was extremely helpful - was able to assist me in targeting working at the right level for each learner and in choosing appropriate texts; adjusting what I was doing when things were not going well. I also found it very helpful to analyse assessment results and other information with her in building up a picture of each child. All of this meant that my learners' needs were better addressed than had I been unsupervised – or supervised by a less experienced and insightful supervisor"* (LLSQ 8).

It is clear from all these comments that one supervisor was perceived as providing collaborative and supportive mediation to her students. However, this was not the case with the other group.

Trainees negative perceptions of supervisor support

The other half of the trainee group perceived that they had insufficient supervision and the supervision they did receive was unhelpful, unsupportive and critical (LSSQ 1, 3, 4, 6). For example, one trainee commented that her "*supervisor was not supportive nor was she approachable.*" (LSSQ 3), while another commented that *"There was minimal collaboration as my supervisor was unavailable often"* (LSSQ 6). In addition, some students (LSSQ 1, 2, 6) found her to be unhelpful and "*overly critical without offering any guidance"* (LSSQ 1). A few of the students found that they were affected emotionally (LSSQ 1, 3, 6) as they *"felt unappreciated and ... didn't really approach her for help"* (LSSQ 1, 3 respectively).

The non-collaborative approach on the part of the supervisor is unacceptable, for many reasons, but there were some mitigating factors. For example, this supervisor was only paid a minimal wage as a sessional tutor, for a limited time span and so did not have as much time available as the other tenured staff member. It is also difficult to gauge the quality of supportive mediation supervisors can or will offer in such situations.

3.5 Theme 5:Understanding the Constructivist Principles Used in Designing the Training Programme for Harcombe's CATLI (See Appendix D, Table 5, p.126)

Students' perceptions of their training

Overall, a high majority (9) of the trainees (LLSQ 1, 4, 6; ELS 2, 3, 4, 7, 8, 9, 11) considered the combination of lectures, practice and supervision very helpful to them in training to be support specialists. A few students (LLSQ 3, 7, 8) commented specifically that there was *"a great synergy among the theoretical, practical and supervisory elements."* (LSSQ 7), while another commented, *"I cannot imagine that I would have been ready to take on learners if it weren't for this combination"* (LSSQ 1).

A majority (9) of the trainees (LSSQ 1, 4, 6 and ELS 2, 3, 4, 7, 8, 9, 11) were unanimous in perceiving that the practical, applied section of the course was the most helpful in providing a vehicle for applying theory and knowledge to practice, thereby becoming more confident and able in their ability to support learners. For example, one trainee commented, *"The practice year was very important as the theory provided with knowledge but not necessarily with the practical skill to apply the theory."* (LSSQ 4) while another commented, *"The aspect of literacy based activities (a step of the CATLI), when done in theory, seemed unstructured and confusing but using these activities practically, helped all the theory fall into place."* (ELS 1). And finally, another student commented *"I have become more self-aware and competent with my approach in a Learning support session"* (ELS 4).

Finally, one student made a comment that indicated that she fully comprehended why the combination of theory, practice and supervision was offered, as she wrote, *"... it made me more aware of the needs of pupils in the diverse classrooms in S.A. today, and creative ways of dealing with this situation. I have learnt so much from the lectures, practice and supervision and feel that it is necessary to have these insights and training to better equip teachers dealing with all abilities etc in the regular classroom."*(LSSQ 5).

3.6 Theme 6: Understanding / Using the Constructivist Principle of Child-Centred Activities in Harcombe's CATLI (See Appendix D, Table 6, p.129)

An overview of the trainees' (LSSQ 1, 2, 3, 5, 6, 7, 8 and ELS 3, 5, 7) perceptions suggest that seven trainees have come to some level of understanding of the constructivist principles that underpin the CATLI, particularly regarding designing the CATLI to suit individual needs, that is, to suit learners' ZPD's. For example, one trainee commented, *"As the assessment highlighted strengths and weaknesses the programme could be tailored to enhance these using the child's specific interests resulting in increased motivation."* (LSSQ 4), while another student wrote, *"It (the assessment) also gave me insight into the needs of the child thus allowing me to design lessons to suit his/her needs."* (LSSQ 2) and "*The process is non-threatening and is pitched at the child's level which puts them at ease thereby creating a comfortable relaxed atmosphere in which to learn."* (LSSQ 6).

Only three trainees (ELS 3, 5, 7) show they have some understanding of how to design aspects of the CATLI to suit children's individual cognitive needs. For example, one student commented that *"...since (Name's) development was at a concrete level, lessons and materials were planned to accommodate the level at which he could learn."* (ELS 3), while another wrote, *"As (Name) had little experiences and therefore general knowledge, it was necessary to fill his gaps with real experiences, as well as to bridge his knowledge and new concepts."* (ELS7)

Some trainees (LLSQ 1, 2, 3, 6, 8) showed signs of understanding the need to use certain child centred strategies (tailored to suit individual needs) that are suggested in the CATLI. Some of these strategies include using the learner's interests. One trainee commented: *"Learning support is cleverly designed to look at the child's interests..."* (LSSQ 2), while another wrote that *"Through various interactions it was noted that (Name) seems to be motivated to learn if a personal interest is taken onto his interests.*" (LSSQ 6)

Another child-centred strategy is giving the child a certain amount of autonomy (control) in the sessions. For example, one trainee commented *"The child has a certain amount of control and the lessons are enjoyable, so half the battle is won before you even start."* (LSSQ 1), while another student commented, *"He (the learner) loved the programme and enjoyed the autonomy of the process in the reward system, being able to choose the order of the activities, etc..."*(LSSQ 3).

Overall, these findings do not show that all the students had an in depth understanding of the theory and practice of designing the programme steps to suit the learners' individual ZPD's.

3.7 Theme 7:Understanding / Using the Constructivist Principle of Metacognitive Strategies in Harcombe's CATLI (See Appendix D, Table 7, p.134)

Overall a detailed analysis of the findings suggests that all the trainee learning support specialists attempted to teach metacognitive strategies through mediation (LLSQ 3, 5, 7; ELS 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11; TD 1, 3, 4, 5, 6, 7, 8, 9, 10, 11) while one trainee said that she *"...really struggled with understanding how to teach (Name) meta-cognitive strategies. Although there were clear indications that he did develop some metacognitive strategies, there was always a feeling that it was not enough or that he should have been more competent on this level."* (ELS 1)

There is considerable evidence to show that the majority of students mediated many metacognitive strategies, though some were more frequently taught than others, such as self-monitoring (LLSQ 3, 5, 7; ELS 7, 10 and TD 3, 6, 7, 10), attention to detail (LLSQ 5, ELS 2, 5, 6, 9, 10 and TD 3, 5, 7, 11), sequencing (LLSQ 5, 7 and ELS 1, 2, 3, 7, 11 and TD 5, 6, 7, 8), self-correcting (LLSQ 7; ELS 1, 2, 4, 5, 7, 11 and TD 7, 10), planning (LSSQ 7; ELS 1, 2, 3, 4, 5, 7, 11 and TD 1, 3, 5, 7, 8, 9, 10) and using the context (LSSQ 7; ELS 2, 3, 4, 5, 6, 8

and TD 3, 6, 7, 10, 11). The metacognitive strategies that seemed to be mediated less frequently were linking new concepts to old ones (LSSQ 5, ELS 2, 6, 8), problem-solving (ELS 3, 5 and TD 3, 4), decision-making (ELS 2), inferencing (ELS 3, 6, 8), and evaluating the text (ELS 3; TD 3).

There is very rich data regarding metacognition which unfortunately cannot be reported here in any depth. However, some of the trainees' comments regarding the mediation and learning of these metacognitive strategies are reported in the next few paragraphs. For example, one trainee commented that her learner *"was encouraged to use metacognitive strategies of paying attention to detail, self-monitoring and self-correcting, sequencing, linking old concepts to new etc to add to his proficiency, and (he) started doing them naturally."* (LSSQ 5), while another commented that the *"Improvement and usage of the following cognitive processing strategies were evident– self monitoring, self correcting, planning, prediction, sequencing and successive processing".* (ELS 7), while others linked the strategies to reading and writing: *"Improvement and usage of the following cognitive processing strategies were evident in Learner 7's reading and writing – prediction, sequencing...".* (TD 7) and *"Shared reading helped Learner 3 with developing skills and strategies for reading, such as prediction, problem-solving and evaluation of text."* (TD 3).

One trainee commented on her learner's inability *"to generalise information outside of the learning support classroom - the rules and strategies for writing, publishing, reading, etc. in learning support are clear, but outside the class they don't apply.* (ELS 3), and a few commented that their learners were only just beginning to use metacognitive strategies *"However, cognitively, my learner needed further mediation and was only beginning to use meta-cognitive strategies."* (LSSQ 7).

Unfortunately, this brief analysis does not convey the interest the trainees appeared to have regarding metacognition, nor does it convey clearly the good effects they perceive this had on

their learners' literacy learning. These results are very encouraging, especially since the intervention period was so short (twelve 75-minute sessions). This success could be attributed to the fact that the CATLI steps were designed specifically to include the mediation of many metacognitive strategies.

Findings regarding Aim 2, embodied in 5 themes, are presented as follows:

3.8 Theme 8:Perceptions of Participants (Learning Support Specialists and Parents) on the Effects of Harcombe's CATLI Process on the Learner (See Appendix D, Table 8, p.144)

Overview of findings

Analysis of the findings indicate that the majority (9) of trainee learning support specialists (LLSQ 1, 2, 3, 4, 5, 6, 7, 8, 9) and a large majority (9) of the parents (PQ 1, 2, 3, 4, 5, 6, 7, 8, 9) alike considered Harcombe's CATLI / learning support to have very positive results for their learners and children. For example, both sets of respondents wrote comments that the CATLI / learning support *"...works very well."* (LSSQ 1), *" is an excellent method..."* (LSSQ 5) and *"...it was excellent..."* (PQ 7) and finally *"The primary aim of the learning support was to provide a motivating, fun, safe and non-threatening environment where (Name) would be given the right amount of experiences and positive reinforcement to promote his learning and development. This was achieved in the learning support sessions."* (ELS 7).

Analysis of trainee specialists' perceptions

The trainees largely showed insightful appreciation of the CATLI process and the results they obtained using it. These perceptions ranged from six trainees commenting on improved literacy skills (LLSQ 2, 4, 5, 6, 7, 8), to four trainees reporting on improved motivation, emotion, and other developmental aspects (LLSQ 2, 4, 5, 6) as well as two commenting on how learners enjoyed the fun and interesting focus of the CATLI (LSSQ 3, 9). In addition six trainees commented on the flexible design of the CATLI that enables it to suit all learners' needs (LLSQ 2, 3, 4, 5, 7, 8).

A selection of the trainees' comments is given in this paragraph. The trainee's perceptions on literacy skills acquisition due to the CATLI process are encapsulated in these comments: *"My learners' showed huge improvement in their literacy as when they first came to me their reading was very slow and 'stuttered' and spelling was poor. By the time their learning support was over they were able to read more clearly and their spelling had improved immensely"* (LSSQ 2) and *"CATLI had an immense and positive effect on my learner's literacy and general development."* LLSQ 5). In addition, a majority commented on improvements in general development such as *"My learner became more self-confident and self-assured during the process. She was more eager and motivated to participate and her sentence construction improved.'* (LSSQ 6). A few trainees commented on the learners' enjoyment of the CATLI such as *"He loved the programme and enjoyed the autonomy of the process in the reward system, being able to choose the order of the activities, etc..."* (LSSQ 3). Finally, a majority of trainees commented on the dynamic flexibility of the CATLI as it enables learners' individual needs and strengths to be accommodated. One example is: *"The CATLI allows for this as you learn about the child holistically and are able to work with every need as well as strength."* (LLSQ2)

Analysis of parents' perceptions

Parents' perceptions largely reflected those of the trainee specialists, and generally commented on how the programme worked so well for their children for various reasons. For example, a majority (6) perceived that their children improved their reading and writing skills (PQ 2, 3, 4, 5, 7, 9), while seven parents perceived that their children were enjoying school more and doing better at school (PQ 1, 2, 3, 4, 5, 6, 7). In addition, a few commented on how their children had enjoyed coming to the sessions and how they have learnt that learning can be fun (PQ 2, 7, 8) and finally three parents commented that their children spoke English better and improved their thinking (PQ 4, 5,7).

A few of the parents' perceptions are given in the next paragraphs. For example, regarding their children's improved literacy skills, one parent commented, "*The effect is that the child can read much better in the school. Her words are spelled correct more now.*" (PQ 9) and "*It assisted him immensely with his reading and mathematics*" (PQ 7). Improvement in enjoying and doing better at school were also commented on, such as *"The whole process I think it is good and helped my son a lot to be better in school. I can now rest to know my son he will pass his grades."* (PQ 1) and *"It was so helpful for (Name) and he just started doing well at school. It is really a good program to help children perform better at school"* (PQ 2) as well as *"I thought it was excellent as we have done great results from an overall perspective. The learner support has definitely helped my son immensely and he had very good results".* (PQ 7).

Parents also commented on how their children's English and thinking improved. For example, *"My child knows reading and writing and knows how to speak English."* (PQ4) and *"It taught him that learning can be fun and how to adapt his way of thinking*."(PQ 7). Other comments on the

enjoyment children had when attending the sessions were made such as *"He loved coming for learning support and thoroughly enjoyed the classes."* (PQ 8).

3.9 Theme 9:Perceptions and Evidence on the Extent of Learners' Development of Motivation to Learn During Learning Support (See Appendix D, Table 9, p.150)

Overview of findings

The majority (9) of the learning support specialists (LLSQ 2, 3, 4, 6, 7, 8; ELS 1, 7, 10 and TD 4, 5, 10) perceived that their learners' motivation improved and they largely attributed this improvement to some aspects of the CATLI process. The CATLI aspects referred to included the fact that many of the activities are interesting and fun as well as because they used the learners' interests (LLSQ 2, 3, 4, 5, 6, 8; ELS 1, 7, 8, 10 and TD 4, 5, 10); the sound literacy methodology used in the CATLI (LLSQ 7; ELS 2, 4, and TD 1, 7); the emotional support offered (LLSQ 4, ELS 5 and TD 4, 5, 10); and the behaviour modification process (ELS 3, 4, 8, 10 and TD 4, 5, 10).

Analysis of trainees' perceptions

Students often commented on how the CATLI process facilitated improved motivation to read and write. For example, they offered comments like *"As the learning support was done according to the CATLI process, motivation and participation was always guaranteed..."* (TD 10), *"...marked improvements in his motivational ... development. (were found)"* (LSSQ 7), *"...his conditioned response of poor motivation from poor performance was changed to confidence."* (ELS 7), *"His motivation and enthusiasm towards tasks has improved significantly."* (TD 2) and *"...he is more motivated to read"* (ELS 3).

One of the main thrusts of Harcombe's CATLI process was to use a multi modal framework to underpin strategies for improvements in motivation and it is interesting to note that the learning support specialists' comments on motivation tend to cover the many aspects targeted. The emphasis on using their interests in planning and execution of Harcombe's CATLI were most often cited as a reason for this improvement. For example, students commented that *"...in getting to know the child's interests it is easier to help them as you use things that they enjoy and keep them motivated.* (LSSQ 2), and *"As the learning support was done according to the CATLI process, motivation and participation was always guaranteed in some way. This is achieved as all the learning support sessions are based around and linked to the learner's interests and kept at a level that will both challenge and add interest to the activity at hand."* (TD 10) and *"Because of (Name's) low motivation, very interesting lessons based on his love for wrestling had to be created"*. (ELS 7).

Trainees also commented on how the sound literacy methods incorporated in the CATLI helped improve the learners motivation, for example *"Reading his own work increased his motivation to read as the work was his own, it increased his vocabulary and connected vocabulary to meaning thereby making the task of reading authentic. Reading his writing also helped increase his fluency while reading, thus further improving his motivation."* (ELS 2) and *"Learner 1 seems to understand what he reads and this has made the world of difference to his self-confidence and motivation."* (TD1).

Emotional support, very much part of the CATLI process, was also cited as a cause of increased motivation. For example, one trainee commented, *"Lessons were filled with interesting activities, which kept him motivated and (he) received encouragement and unconditional positive regard. His need for recognition and his need to achieve" (were addressed)"* (ELS 5), and *"Furthermore, positive affirmation, unconditional positive regard and behaviour modification elicits learning and motivation for him. Moreover, affirmation that it is okay to need help would further develop learning for him."* (TD 4)

Trainees also perceived that the behaviour modification process improved literacy learning. For example, they commented that behaviour modification provided good motivation: *"Behaviour modification worked so well with (Name) and he was eager to work out his points at the end of each session. It motivated him to try harder each week.*",(ELS 3) and *"The behaviour modification process served a very useful purpose in focusing (Name) on particular areas of competence where she needed to pay attention, and learn to self monitor and correct. It was also of great benefit in motivating (Name), and also played a role in creating positive attitudes and emotions with regard to reading and writing."* (ELS 8) while another student's comments suggest she had also transmitted the notion to the parent *"Behaviour modification worked really well for (Name) as it improved his motivation to do tasks that he did not enjoy. The behaviour modification has also worked in motivating him to do better in his schoolwork as his mom has promised to give him an I-pod if he continuous to show such great improvements in his next report as he has done in the previous one"*

(ELS 10)

3.10 Theme 10: Perceptions and Evidence Regarding the Extent of Learners' Development of Emotion and Behaviour (See Appendix D, Table 10, p.157)

Overview of findings

The majority of trainees (10) and parents (6) (LLSQ 1, 2, 3, 4, 6, 8, 9 and ELS 1, 4, 6, 7, 8, 10, 11; TD 1, 2, 3, 6, 7, 8 and PQ 2, 5, 6, 7, 8, 9) perceived that the learners' emotional development improved considerably during the course of learning support. In addition, once again, the majority (9) of the trainees (LLSQ 1, 2, 3, 4, 6, 7; ELS 1, 4, 6, 7, 8, 10, 11 and TD 10) and two parents (PQ 7,8) considered that this improvement was due to the emotional support strategies built into the CATLI.

Ten trainee participants (LLSQ 4, 6, 8, 9; ELS 1, 3, 6, 8, 11 and TD 2, 6, 7, 8 and five parents (PQ 1, 5, 6, 7, 8), considered that the learners improved their self-confidence while a minority (5) (LLSQ 1, 2, 8; ELS 1, 4; TD 2 and PQ 2, 5) considered their self-esteem improved. In addition, six participants commented on reduced anxiety (LLSQ 3, 6; ELS 6, 7 and TD 2, 3, 6, 7, 8) and two on improved mood (PQ 9; ELS 1 and TD 1).

Finally, students attributed the improved emotional development of their learners to strategies embedded in the CATLI process. For example, they cited using their learners interests (LLSQ 1, 3, 4, 7 and TD 10), emotional support (ELS 1, 4, 6, 7, 10, 11), behaviour management (LLSQ 2; PQ 7 and ELS 1, 11), the CATLI being designed to be at the child level (LLSQ 6, PQ 8 and ELS 8) and finally, the trainee talking to the parents regarding their problems so the children will worry less (ELS 9 and 10)

Analysis of participants' responses

As with the previous section, parents and trainees perceived that the learners' emotional development improved considerably, largely due to the CATLI strategies. Oftentimes the comments about improved emotions are linked to improved motivation, so not many comments will be cited in this section.

Trainee comments on improved emotion include *"Even more remarkable was the marked improvements in his motivational and behavioural development. His anxiety lessened considerably and found the tasks enjoyable and rewarding."* (LSSQ 7) and *"Learner 1 seemed to blossom under the extra positive attention he received at Learning Support and he became much less disruptive and distracted."* (ELS 1) and *"Initially, (Name's) performance anxiety limited her ability to answer questions where there were no right or wrong answers. As the sessions progressed, (Name) came to realize that her views were acceptable and she*

would not be chastised for 'incorrect' answers as a result of the constant encouragement and reassurance I gave her." (ELS 6), and (ELS 1) *"Even his posture seemed to improve slightly, as he appeared more alert and he seemed to enjoy the fact that someone was interested in him and thought he was a competent worthwhile child. He became more animated and relaxed in Learning Support sessions, he started to smile more and laugh more.").*

Parents' comments included *"It has helped him to build his self concept and with his reading and writing."* (PQ 2) *"It gave (Name) confidence and boosted his self-esteem."* (PQ 5).

Trainees' and parents' comments regarding how the CATLI strategies improved emotional development were very similar to the improved motivation comments. However a few are included here, for example, *"(Name) would reflect back on his published work with pride, satisfied with the work he had produced. This further possibly contributed to his confidence level* (ELS 3), and *"The child was allowed some control over the learning process, enhancing self esteem"* (LSSQ 8). And finally: *"(Name's) mother's emotional needs often were an issue for him. This factor had a large role in the discussions of home life we would have during most of the learning support sessions. It was not an easy facet to deal with. The best I could do was to keep in contact with her (mother) and reassure that (Name) was doing superbly in the learning support sessions. I would also mediate and encourage positive regard and affirmation for the work he has been doing as well as for the great improvements he has made."* (ELS 10).

3.11 Theme 11: Literacy and Skills Developed (See Appendix D, Table 11, p.165)

Overview of results

Analysis of these findings indicate that the majority (LSSQ 2, 4, 6, 8 and PQ 1, 2, 3, 4, 5, 9 and test data below) of the learners surveyed illustrated improvement in their reading skills.

This was evident in the data collected by means of quantitative and qualitative information from the learners' assessments, as well as the parents' and trainees' perceptions. In addition, the majority of learners showed considerable improvement in reading comprehension on a criterion referenced test (see below) as well as showing improvements in word recognition and the knowledge and usage of literacy conventions.

These findings are particularly remarkable because the intervention was fairly short (only 12 sessions) and most learners spoke English as a second language. The learning support specialists largely attributed this success to the various strategies woven into Harcombe's CATLI process.

Analysis of results

Analysis of the results is explained in the next few paragraphs.

Reading comprehension

Overall, results showed that seven out of eleven learners improved their reading comprehension, as measured by the Stanford Diagnostic Reading Test (SDRT) text from 1 year to 3 years. This indicates improvement of literal (attention to detail) and inferential comprehension skills, plus since only 6 months intervention was given, this improvement is above and beyond normal development.

Four learners improved their reading comprehension by about one year on the SDRT, (TD 1): *"An indication of improvement in reading comprehension was evident in the SDRT Reading Comprehension Subtest, where scores improved by one grade"* (TD 2): *"Although Learner 2's reading comprehension is still one grade below Grade 6, he has nevertheless improved with one grade on the SDRT Reading Comprehension Subtest. This improvement is supported by the grade increase in his verbal concept development (SDRT Auditory*

Vocabulary Subtest). (TD 3): *"While Learner 3's SDRT Reading Comprehension level is still one grade below the expected level, and no improvement was noted in his Auditory Vocabulary Subtest, the score on the SDRT Reading Comprehension improved by one grade.*, and (TD 7): *"Although Learner 7's Reading Comprehension score on the SDRT suggests a grade level below Grade 2, he has shown improvement of one grade in the Auditory Vocabulary subtest).*

Three learners improved their comprehension skills by 2-3 years on the SDRT, which is well beyond normal development and indicates, amongst many things, excellent case management and mediational effort on the learning support specialists' part (TD 6): *"Learner 6's Reading Comprehension on the SDRT improved by two grades, which places her comprehension at a grade 3 level. Qualitative evidence suggests that she has gained the strategy of prediction and in using the context to gain meaning from the text",* (TD 8): *"Learner 8 has show considerable improvement of 2 grades in the Reading Comprehension subtest of SDRT."*, *and* (TD 10): *"The learner was retested on a higher SDRT level in the post-test. Results from the both the Auditory Vocabulary and Reading Comprehension subtests of the SDRT indicate a substantial improvement of 3 grades in the learner's comprehension while reading").*

On the other hand, a minority of learners (4) showed 6 months improvement on the SDRT (TD 4, 5, 9,11) and since 6 months intervention was given, and only 6 months improvement showed, obviously some aspects interfered with improvement.

Qualitative analysis showed that learning support specialists and parents attributed these improvements in comprehension due to improved concept development (LSSQ 8; TD 11; ELS 5), improved English language in general (PQ 3, 4, 5; ELS 5) and vocabulary in particular (LSSQ 8; TD 11), improved knowledge and usage of metacognitive strategies, especially prediction / using the context and problem-solving (LSSQ 8; TD 1, 3, 5, 6, 10; TD 11; ELS 3; 4 and improved word recognition (TD 1).

The learning support specialists did not really examine in much depth how these improvements came about, but some commented that the following aspects of Harcombe's CATLI helped with comprehension, that is, shared reading (ELS 1, 2, 6) and the strategy of integrating reading and writing skills (LSSQ 8).

Word recognition

On the whole, informal assessments indicated that some learners' (5) word recognition skills improved (TD 1, 5, 6, 7, 8), while some learners made only reasonable improvement in word recognition (TD 2, 3, 4), while one learner did not really make any progress (TD 9). Analysis indicated that one learner read with less stuttering (LSSQ 2), others more fluently (TD 2, ELS 10), while others used more expression (TD 2, 6, 10; ELS 6, 11). A few trainees attributed these improvements to the Harcombe's CATLI process of repeated reading of their own publications (ELS 1, 2, 6).

Literacy conventions

Qualitative improvements in using phonics to sound out words while reading were demonstrated by some learners (TD 3, 5, 6, 7, 8, 10). Only 2 learners were shown to have improved on the SDRT, one of whom made an improvement of 2 grades (TD 3, 7). Only a few trainees attributed these improvements to Harcombe's CATLI processes, that is, tracking (ELS 1) and Sound Families (ELS 11), while some attributed it to improved processing such as improved visual memory and discrimination (TD 1, 2, 3, 6, 8, 9) and auditory discrimination (TD 4).

3.12 Theme 12:The Extent of Literacy (Writing) Skills Developed (See Appendix D, Table 12, p.172)

Overall, results indicate a marked improvement in writing skills (LSSQ 4, 6, 8; PQ 2, 4; ELS 4, 9). Analysis of these findings suggests that writing has improved specifically in the areas of planning, conveying meaning and in terms of literacy conventions usage. The majority of learners showed improvement in their planning (TD 1, 2, 3, 5, 6, 8, 9, 10; ELS 11).

In terms of conveying meaning through writing, improvement in developing meaning was achieved by improved sentence construction (LSSQ 6; TD 2, 8, 9; ELS 11), improved logical sequencing of content (TD 1, 6, 8;ELS 4, 5,10,11), improved grammar (TD 1 , 8), improved vocabulary (TD 2, 6, 8, 9; ELS 10), and improved creativity (TD 2 ; ELS 10).

Regarding the use of literacy conventions, learners' improvement was evident in the areas of improved spelling (LSSQ 2, 4; PQ 9; TD 1, 2, 3, 5,6,7, 8,10), improved punctuation (TD 2, 3, 5, 7, 8, 9, 10; ELS 11) and improved handwriting (TD 2).

Some learning support specialists attributed these improvements in writing to aspects of Harcombe's CATLI. The following aspects were highlighted:

- Increased concepts (LSSQ 8; TD 7; ELS 3)
- Increased language (PQ 4, 5)
- Planning made writing easier (ELS 5, 6)
- Metacognitive strategies (LSSQ 8; TD 7, 10; ELS 6)
- Scribing text (LSSQ 7)
- Copy, without worrying about spelling (LSSQ 7)

- Due to increased motivation owing to Harcombe's CATLI process, the learner engaged more readily in writing (LSSQ 7)
- Linking construction task to writing (ELS 1, 3)
- Linking Sound Families to spelling (TD 6; ELS 2)
- Tracking (TD 10)
- Publishing process (TD 3; ELS 11)
- Reading and writing skills being integrated (LSSQ 8)

Chapter 4

Discussion

In this chapter, the results of this study are contrasted with the findings of studies reviewed in Chapter 1. As hypothesised, the participants (parents and trainee learning support specialists) in this study perceived that Harcombe's Cognitive Approach to Literacy Instruction (CATLI) was helpful in improving learners' literacy skills (reading and writing), as well as in improving their general development. Both qualitative and quantitative data support these perceptions of improved literacy skills. These findings suggest that the CATLI process may be a viable alternative to using the more popular, traditional methods of literacy instruction. In addition, the findings suggest that the constructivist approach used to train university students in the CATLI process is very effective.

4.1 An alternative model to literacy instruction

The literature reviewed in Chapter 1 showed that a fair amount of evidence was accumulated which suggests that neither skills-based, phonic methods, (Pearson & Stephens, 1994; Troia, 1999), nor psycholinguistic, whole language and balanced approaches (Dednam, 2005; Freppon & Dahl, 1998; Harcombe, 2005; Quirk & Schwanenflugel, 2004; Santa & Hoien, 1999) are effective literacy instruction methods for various reasons. Congruent to findings from this study, evidence was cited that indicates that various contextual issues also impede the acquisition of literacy skills, particularly the amount of literacy experience provided, the accessibility of literacy resources (Aitchison & Harley, 2006; Yeh, 2004) and the language through which literacy is taught (Harcombe, 2005; Nel, 2005; Yeh, 2004).

Accordingly, the CATLI process is offered as an alternative literacy methodology, firstly since the constructivist, ecosystemic underpinnings endeavour to address as many contextual issues as is possible, and secondly because the CATLI process endeavours to address some of the gaps in other literacy instructional programmes. So, since no formal studies have previously been conducted on Harcombe's CATLI, the current study aimed to provide evidence that the process does in fact enhance the literacy acquisition and overall development of the learners who received this intervention.

Both qualitative and quantitative evidence for this study indicates that all the learners involved showed improved literacy skills, though some showed more improvement than others. For example, evidence shows that reading comprehension (as measured by a criterion referenced reading test) improved in all learners, though these improvements ranged from a few years to six months. All learners also appeared to improve their word recognition levels as well as their usage of literacy conventions, though once again, the findings ranged from considerable to fair improvement.

Evidence also indicates that all learners showed varying improvement in writing skills, such as planning-to-write strategies, conveying meaning strategies and the usage of literacy conventions such as spelling, punctuation and so on. Trainee university students and parents also perceived that learners improved developmentally in many ways.

In addition, a large majority of the trainee leaning support specialists and the parents attributed these very positive effects on the children's literacy skills and development to the CATLI process. There were also many comments on how the children enjoyed their sessions,

that literacy learning was made fun and the like, and there were quite a few comments on how learners were more confident at school, improved their grades at school, and so forth.

It is interesting to note that the majority of the trainee learning support specialists attributed their learners' improved literacy skills to the various steps of the CATLI, as well as to their learners' improved functioning in the various areas targeted by the CATLI process, for example, amongst other aspects, improved knowledge (concept development), improved English language (especially vocabulary), improved usage of metacognitive strategies, improved self-confidence and improved motivation. All these findings are quite remarkable for a few reasons. Firstly, the CATLI was implemented for a considerably short period of time, (each learner only received an average of twelve 75-minute sessions), and secondly, the sessions were conducted by in English.

It is argued that, in the light of these excellent findings, which occurred in spite of the learners' unfavourable systemic interactions and the trainees' inexperience, this study indicates that the CATLI can be effective in impacting considerably on learners' literacy learning in the South African context. It will be argued, in the next section, that the effectiveness of the CATLI is due largely to the process being underpinned so soundly by social constructivism and associated theories, for example, ecosystemic theory, cognitive education theory, effective literacy theory and so on.

Harcombe's CATLI and constructivism

It is argued that one of the most important reasons for the CATLI's effectiveness is the fact that it is so firmly underpinned by constructivism and associated theories (Harcombe, 2003). This means that the users of the process understand that a dynamic interaction of systemic

factors, such as political, socio-economic, stress, social support and so forth, contribute to the quality of children's development and learning. And when practitioners understand this, then they also realise that literacy interventions need to include the addressing of any barriers that may have arisen due to environmental / systemic interactions. This type of understanding was not evident in other research cited in this study.

It is interesting to note that all the trainee students in this study showed a fair to good understanding of the ecosystemic interactions that affected the learning and development of their learners. However, they all showed an even better understanding of how to intervene systemically to produce better interactions in order to improve development. Intervening systemically, from a CATLI point of view, includes collaboration with as many people who interact with the child as possible, as well as designing the CATLI process to suit individual needs and strengths. This is also a unique feature, as most other methods of literacy instruction pays little if any attention to the specific contextual needs of the learner.

Other constructivist principles that have been included in the CATLI are the notion of designing the CATLI to suit individual needs and strengths (i.e. ZPD), as well as the notion of using constructivist, child-centred methodologies. The findings of this study in relation to collaboration, individual design and child-centred methods will be discussed in relation to reviewed literature in the next few sections.

4.1.1 The CATLI, constructivism and collaboration

Any intervention, from a systemic point of view, involves collaborating with other stakeholders, which will help the child to improve his or her optimal development and learning (Harcombe in Engelbrecht & Green, 2001). Results from extensive

research studies have reiterated the necessity of collaboration (Denton, Hasbrouck & Sekaquaptewa, 2003; Meck & Barrow, 2005). When applying this notion to Harcombe's CATLI intervention process, (discussed extensively in Chapter 1) the collaboration between stakeholders (trainees, supervisors, parents and teachers) is viewed as an indispensable element of effective ecosystemic practice. In this study it meant that the learners, as well as their parents and teachers, were supported in a collaborative manner.

The findings of the current study suggest that the majority of the trainee participants understood and appreciated the importance and usefulness of this partnership with parents and teachers in order to improve in the learning and development of their learners. In addition, a large majority of the trainee participants also perceived that the benefits of such collaboration accrued to the learners in terms of improved literacy learning, as well as improved emotional, behavioural, motivational and cognitive aspects of development. Although the actual quality and incidence of the collaboration varied, the trainees were documented as having established collaborative relationships with all of the learners' parents but with only a few teachers. It is interesting to note that even though the trainees did not collaborate as much as they should have, due, largely, to perceived time and university constraints, they all seemed to have internalised that collaboration was essential for optimal development. In addition the very positive comments that the parent participants made in terms of their children's improved learning and development, as well as a few teachers' positive comments, suggest that the collaboration was largely effective. These findings also suggest that even a positive attitude towards, and a good

understanding of collaboration, may also contribute positively to improved learning and development.

In the context of fairly positive collaboration achieved by the trainees, findings regarding the constructivist principle of designing the CATLI to suit individual needs and strengths are discussed in the next few paragraphs.

4.1.2 The CATLI, constructivism and designing the CATLI to suit individual needs and strengths

The effectiveness of promoting learning by considering and designing learning events to accommodate all learners' specific needs, was theorised and confirmed by the work of Vygotsky (1978) and other subsequent practitioners, operating from a similar stance. In other words, all learning should be based on a determined 'zone of proximal development' (ZPD), which enables practitioners to provide the correct level and amount of experience and mediation necessary to enable the child's cognitive development to improve. Trainee learning support specialists are taught dynamic ways of obtaining and classifying this information (on various graphic organisers) so that they were enabled to judge the ZPD's of their learners fairly accurately, even if they have not linked the theory to the practice very well. In addition, they received some group supervision at the planning stage, which also helped them to refine their ZPD estimations.

The study findings confirm that the majority of trainee learning support specialists perceived that they had understood the theory and practice of designing the CATLI to suit individual ZPD's on many levels, for example, on motivational, cognitive,

emotional, language and literacy levels. It is argued that since the findings show that all learners who received Harcombe's CATLI intervention displayed fair to remarkable improvements in their literacy and general development, then using constructivist theory to support one's argument, one can infer that the trainees must have been able to approximate the ZPD of their learners fairly well.

It is interesting to note that though analysis of some perceptions suggest that not all trainees comprehended the underlying constructivist principles, ZPD in this instance, the very structure of Harcombe's CATLI, along with the planning process referred to previously, aided trainees to succeed in recognising and accommodating learners' individual developmental levels.

The CATLI process also is also designed, once the ZPD's are established, to mediate the necessary metacognitive strategies each learner needs, which is based on Feuerstein's *mediated learning experience* (MLE) theory and practice (Haywood, 1997). In addition, the mediation of these metacognitive strategies is integrated very tightly into every step of the CATLI, especially in terms of accommodating cognitive processing differences (Das, Naglieri & Kirby, 1994; Dednam, 2005; Harcombe, 2005) and previous inadequate literacy instructional practices (Lerner, 1993; Freppon & Dahl, 1998; Harcombe, 2005; Pearson & Stephens, 1994; Quirk & Schwanenflugel, 2004; Santa & Hoien, 1999). The findings indicate that all trainees agreed with the efficacy of cognitive strategies and mediation, and in addition, tried to enable their learners to develop and internalise many metacognitive strategies (such as *self-monitoring, attention to detail, self-correcting, using the context to predict, linking old concepts to new ones, problem-solving, planning, sequencing,*

decision making, inferencing). Their perceptions also indicated that they considered that they had largely achieved this goal, though analysis of their comments suggests that some learners had achieved a better internalisation and practice of metacognition than others. It is interesting to note that though these students had only had a fairly limited introduction to Feuerstein's MLE in their course work, due to time constraints, they were able to mediate fairly effectively (some better than others). In fact, the findings suggest that this was one of the more successful aspects of the CATLI. It is considered that this success was possibly due to two factors, one being that Feuerstein's rather complex terminology (Human-Vogel, 2004) was not used to describe mediation and the cognitive strategies used, and secondly, because the strategies were linked to each step of the CATLI process, which means also that they were linked strongly to the literacy process.

4.1.3 The CATLI, metacognition and child-centred methodology

Another aspect of constructivism, namely providing enough experience, based on the correct level of concept (schema) development (Piaget), is also built into the CATLI process. This aspect is particularly important in the South African context, as the majority of South African learners have not had enough experience or enough mediation, due to various contextual factors, such as *apartheid* political policies and their implementation, which has affected their cognitive development and their consequent development of general knowledge considerably (Harcombe, 2005; Nel, 2005). In addition, for many similar reasons, their language development, whether it be their home language or English has also been delayed (Nel, 2005; Yeh, 2004).

Accordingly, Harcombe (2003) integrated into the CATLI a step that enabled students to provide some experience for the learner in each session. This experience would of course, be designed to suit the learner's ZPD and would range from making a sandwich, or visiting a game reserve (concrete level) to making a habitat for giraffes, to writing an article for a magazine based on an interview with a veterinarian (abstract level). Then a description of what was done would be written up into a book, which will be reread often. This process of constructing something is designed to improve children's knowledge (i.e. concept development) as well as providing a vehicle for mediating metacognitive strategies. In addition, language is tied into the construction process, as well as being tied to the literacy process, so grammar and vocabulary are tied in tightly to concept development / knowledge. Finally, the content of the experiences provided are linked to the child's interests, which increase motivation to learn, read, and write.

Only a few students commented on their learners' improved language and knowledge levels, but those who did comment, commented very favourably. In other words, they perceived that their learners made considerable improvement in knowledge and language levels. Analysis of the extant data as well as trainees' comments indicates that there was a strong child-centred focus to the implementation of the CATLI in addition to the construction tasks. These strategies included allowing the child to choose the sequence of the sessions, allowing the child to collaborate to some extent in the choice of content, language, prizes, which books to read, and so forth, all of which are built into the CATLI.

Both the CATLI mediation and child-centred activities, that is, the construction task, are not usually included in either whole-language methodologies or balanced approach methodologies, so this inclusion facilitates the development of cognition and cognitive strategies, as well as improving language, all of which are necessary for effective literacy learning. Accordingly, it is argued that one of the main reasons for the very good literacy learning results obtained in this study is due to including mediation, metacognition, experience and tightly linking them to language and literacy.

So far it has been argued that the CATLI process is an exemplary literacy instructional programme because it is underpinned by sound ecosystemic and cognitive development theory and practice. It is also argued that since motivational, emotional and behavioural research indicates that to learn well, children need support in these areas, it is necessary to address these issues in a literacy programme. So these elements were incorporated into the CATLI process (Harcombe, 2003), and results regarding these aspects will be examined in the next section.

4.1.4 The CATLI and motivation development

An ecosystemic, multi-modal model of motivation was used to help generate the strategies that were used as part of the CATLI process. The strategies included in the CATLI were using the learners' interests, making learning fun, designing activities at the learner's level, that is, do-able, giving the learner some autonomy, providing unconditional positive regard and behaviour modification.

Findings from this study indicate that a high majority of the trainees and a minority of the parents perceived that the children had considerably improved their motivation to read and write. All the trainees attributed this improvement to aspects of the CATLI, with, *including the children's interests*, being the most frequently cited. A few other aspects of the CATLI were cited, though only a few students cited each aspect. For example, the element of fun built in (games, construction tasks), the sound literacy methods of the CATLI, the learners becoming more competent in literacy, the shared reading aspect (reading to the learners), emotional support and child autonomy.

Some of these findings confirm findings from other research studies (Bandura, 1982; Schunk & Cox, 1986) which have demonstrated a connection between the instruction strategy and increased efficacy for successfully completing various learning tasks, finding that instruction which engenders in learners a sense of self-discipline and autonomy over their learning, raise self-efficacy, which in turn promotes motivation to learn. The current study suggests that learners' increase in perceived competence in reading fluency and comprehension of texts, for example, as well as their increased self-regulation and exercising of free choice within the learning support programme, increased their motivation.

Given that tasks were also designed according to learners' interests, results indicate considerable enhancement of learners' motivation to persevere and learn. Addressing one of the many factors that need consideration in improving motivation to learn, this study corresponds to Adama Ouane's (UNESCO, 2002) statement

asserting the importance of literacy skills being linked to everyday needs and interests before success is guaranteed.

4.1.5 The CATLI and emotional development

Since considerable research indicates that children needed to be emotionally supported in order to learn well (Bidel, & Fischer, 1992; Engelbrecht, 2004) various emotional support strategies were also included in the CATLI. These strategies included focussing on the development of a trusting supportive relationship between the mediators and the learners, including unconditional positive regard (Rogers, 1983), using various strategies to reduce performance anxiety, positive behaviour modification and so forth.

Findings show that the high majority of the trainees perceived that their learners had considerably improved their self-confidence. It is interesting to note that the words that are more commonly used to describe emotional development were not used, such as self-esteem, anxiety and depression, that is, in some ways, a surprise as students were taught this in the course-work section of the course. This could be due to the fact that though plans are made for the development of emotional support when beginning the CATLI, they are not overtly included in each step, as so many of the cognitive and literacy instruction strategies are.

A few trainees did comment on improved self-esteem, mood and reduced performance anxiety. A majority of the trainee participants indicated that they thought that these improvements, along with the improved self-confidence, were due to various aspects of the CATLI. These aspects included using the children's

interests; providing positive regard, praise and acceptance; positive behaviour management; providing work at the children's ZPD level; the CATLI process being non-threatening for various reasons; and children being provided with some autonomy.

These findings suggest that emotional development occurred during the process of the CATLI implementation, but that some review of the emotional strategies in the CATLI needs to be done.

4.2 Training with the CATLI: A constructivist process

Over the years the developer of Harcombe's CATLI process has refined the training process, at the university. The process was based on constructivist principles, namely that students need experience to internalise this rather different, very integrated form of literacy instruction. Accordingly, students participated in coursework lectures in their first year of study. These sessions were very participatory (using much cooperative learning) and problem-solving based (using case studies etc.), and were aimed at helping students to apply theory to understanding and promoting child development as well as examining and applying inclusive education principles and support along with examining literacy and numeracy interventions, which included the CATLI.

Then in their second year of part-time study the students implemented the CATLI in the university's community centre, which included collaboration (via group supervision and observation) with a trained supervisor. In this second year of study the students also provided support to educators in participating schools with the idea of promoting inclusive education.

Oftentimes the CATLI process or at least some of the principles and practices of the CATLI were used in their collaboration with the educators.

Overall, results from this study indicate that all trainees considered this combination of theory, practice and supervision useful, stating that, whilst all three components were necessary, the practical application was especially critical in building up the necessary skills and confidence to understand and meet learners' diverse needs. The high majority of the trainees' comments and fair to good practice in this study furthermore suggest that the two-year period of training and practice should guarantee trainees' sufficient comprehension and employment of constructivist and ecosystemic principles. By understanding the basic principle of constructivism, which is, 'learning by doing', it makes complete sense that the practical year is much needed for trainees to construct their own concepts concerning ecosystemic principles and the CATLI implementation.

One other aspect that was reviewed in the study was trainees' perceptions of the collaborative relationship between themselves and their supervisors. This collaboration occurred before, during and after the learning support period. Results from this study suggest that all of the trainees perceived the necessity of collaborative supervision from knowledgeable supervisors for their own and their learners' development. Presumably, it can be inferred that positive contributions from competent supervisors are essential to support trainees in developing adequate skills before any of them would be able to produce positive effects in learning support.

More in-depth findings indicate that, between the two learning support supervisors, only the one was supportive and collaborative while the other was perceived as critical and unapproachable. Most trainees who perceived their supervisory experience as unpleasant,

along with a few others indicated the necessity for additional supervisors in managing this collaborative process more satisfactory. It is possible, though evidence cannot be supplied for this that the reason why the few learners who did not make as good progress as they should have, was due, amongst other factors, to the inadequate supervision some of the trainees received.

These findings indicate that the CATLI training process has provided a satisfactory medium for training learning support specialists as far as helping them to have access to improve the literacy learning of children in a clinical setting. However, it is argued that the constructivist quality of all aspects of the training programme need to be in place, as for example, the non-collaborative quality of the one supervisor compromised the training process. This implies firstly, that lecturers and supervisors need to be constructivist in orientation, both theoretically and practically. However, some universities may not be able to afford the price of the practice aspect of the CATLI training process, as the community centre infrastructure is expensive, as is the provision of sufficient supervisors and lecturers.

4.3 Conclusions and recommendations

In conclusion, it is clear from the findings that this study yielded positive results, demonstrating predominantly favourable results and perceptions toward a constructivist ecosystemic approach to literacy learning and development. The findings therefore suggest that the CATLI can be an effective strategy in improving literacy learning for learners in the South African context. There are nonetheless certain practical implications for following this approach that are considered below.

Though the results affirmed the objective of this study, no formal research has previously been conducted to corroborate these findings. Given that this is the first study attempting to

evaluate Harcombe's CATLI, and bearing in mind that the study focused on only a small sample within a specific context, it is not possible to generalise the findings of this study to the greater population of learners. Therefore, additional research, focusing on a wider population is necessary to validate the findings of this study.

As trainee learning support specialists largely appeared to have understood and internalised ecosystemic, and to some extent, constructivist principles, results indicate that trainees also attributed the success of their understanding and implementation of the CATLI intervention to the combination of the theoretical and practical training programme, placing special emphasis on the practice and supervisory aspect. The implication of this finding for the training of learning support specialists is that applied practical instruction is especially necessary if trainees are to effectively develop an understanding of these principles.

In addition, the study has demonstrated the effectiveness of a collaborative approach in interventions offered within a constructivist ecosystemic framework. Despite this, trainees experienced restrictions in their time available during the process, which led to limitations to collaboration between more than one stakeholder. This finding implies that the constructivist ecosystemic intervention process is very time-consuming and for this reason, may possibly not be an attractive approach for school teachers and practitioners in the field of inclusive education.

To sum up, it is thus apparent that further research is needed to endorse the support for using the constructivist ecosystemic approach, embedded in Harcombe's CATLI, rather than traditional literacy instruction methods for understanding, assessing and supporting scholastic, emotional and motivational development.

References

Adelman, H.S. & Taylor, L. (1993). *Learning problems and learning disabilities: Moving forward.* California, USA: Brooks Cole.

Aitchison, J. & Harley, A. (2006). South African illiteracy statistics and the case of the marginally growing number of literacy and ABET learners. *Journal of Education* (39) 90 - 112.

Baker, L. & Wigfield, A. (1999). Dimensions of children's motivation for reading and their relations to reading activity and reading achievement. *Reading Research Quarterly*, (34) 452 - 477.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behaviour change. *Psychological Review*, (84) 191 – 215.

Bandura, A. (1982). The self and mechanisms of agency. In Suls, J. (Ed.). *Psychological perspectives on the self.* (Vol. 1, pp. 3 - 39). Hillsdale: Erlbaum.

Bidell, T.R. & Fischer, K.W. (1992). Chapter 1: Cognitive development in educational contexts. In Demetriou, A., Shayer, M., & Efklides, A. (Eds.). *Neo-Piagetian theories of cognitive development: Implications and applications for education.* London: Routledge.

Bless, C. & Achola, P. (1988). *Fundamentals of social research methods: An African perspective.* Lusaka: Government Printing Department.

Brooks, P. (1989). Metacognition: Some thoughts on thinking. *The thinking teacher*, 5 (1) 4 - 5.

Clay, M.M. (1991). *Becoming literate: The construction of inner control.* Portsmouth: Heinemann.

Das J. P., Naglieri, J. A. & Kirby, J. R. (1994). *Assessment of cognitive processes: The PASS theory of intelligence.* Boston, MA: Allyn and Bacon.

Dednam, A. (2005). Chapter 7: First language problems. In Landsberg, E. (Ed.). *Addressing barriers to learning: A South African perspective.* Pretoria: van Schaik.

Department of Education (2002). *Revised National Curriculum Statement - Grades R-9 (Schools) Policy.* Languages: English first additional language. Pretoria: Department of Education.

Du Toit, E.R., & du Toit, G.F. (2004). Chapter 1: Understanding outcomes-based education (OBE). In Maree, J.G., & Fraser, W.J. (Eds.). *Outcomes-based assessment*. Sandown: Heinemann.

Edmondson, J. (2002). Asking different questions: Critical analyses and reading research. *Reading Research Quarterly,* 37 (1) 113 – 119.

Erhi, L.C., Nunes, S. R., Willows, D. M., Schuster, B. V., Yaghoub-Zadeh, Z. & Shanahan, T. (2001). Phonemic awareness instruction helps children to learn to read: Evidence from the National Reading Panel's meta-analysis. *Reading Research Quarterly,* 36 (3) 250 – 287.

Engelbreght, P. (1999). Chapter 1: A theoretical framework for inclusive education. In Engelbrecht, P., Green, L., Naicker, S., & Engelbreght, L. (Eds.). *Inclusive education in action in South Africa.* Pretoria: van Schaik.

Engelbrecht, P. (2004). Chapter 13: Trans-disciplinary collaboration. In Eloff, I., & Ebersöhn, L. (Eds.). *Keys to educational psychology.* Cape Town: UCT Press.

Freppon, P.A. & Dahl, K.L. (1998). Theory and research into practice: Balanced instruction: Insights and considerations. *Reading Research Quarterly,* 33 (2) 240 –251.

Glasser, W. (1986). *Control Theory in the classroom.* New York: Harper & Row.

Gultig, J. (Ed.). (2001). *Learners and learning: Learning guide.* Cape Town: Oxford University Press.

Gultig, J. & Stielau, J. (2002). (Eds.). *Getting practical: About outcomes-based teaching - learning guide*. Cape Town: Oxford University Press.

Harcombe, E. J. (1993). *The interaction effects of intrapersonal, interpersonal and socio-economic variables on stress adjustment of disadvantaged children.* Unpublished Master's of Education Research Report, University of the Witwatersrand.

Harcombe, E. (2003). Section 4: Implementing inclusive practice: Transformation of the curriculum. Course Material. Topic 3 – part 1. *Inclusion: Development and learning support.* Johannesburg: University of the Witwatersrand.

Harcombe, E. (2005). A Cognitive Approach to Literacy Instruction (CATLI): A method that facilitates the accommodation of diversity in inclusive classrooms. *A paper presented at the 2005 Inclusive and Supportive Education Congress, Glasgow, Scotland.*

Haywood, H.C. (1997). A total cognitive approach in education: Enough bits and pieces! *Journal of Cognitive Education*, 6 (3) pp 5 -12.

Human-Vogel, S. (2004). Chapter 2: Cognition and learning. In Eloff, I., & Ebersöhn, L. (Eds.). *Keys to educational psychology*. Cape Town: UCT Press.

Keogh, B. K. (1986). Temperament and schooling: Meaning of goodness of fit? *New Directions for Child Development*, 31, 89-108.

Leedy, P.D. & Ormrod, J.E. (2005). *Practical research: Planning and design.* (8th ed). New Jersey: Pearson Merrill Prentice Hall.

Lerner, J. (1993). *Learning disabilities: Theories, diagnosis and teaching strategies*. (6th ed.). Boston: Houghton Mifflin Company.

Luria, A. R. (1973). *The working brain: An introduction to neuropsychology.* New York: Basic Books.

Mc Burney, D.H. (2001). *Research Methods.* (5th ed.). California: Wadsworth.

McCombs, B.L. (1984). Processes and skills underlying continuing motivation to learn: Towards a definition of motivational skills training interventions. *Educational Psychologist* 19 (4) pp.199 – 218.

Meyer, W.F., Moore, C. & Viljoen, H.G. (1997). *Personology: From individual to eco-system.* Johannesburg: Heineman.

Mussen, P.H., Conger, J.J., Kagan, J. & Huston, A.C. (1990). *Child development and personality.* (7th ed.). New York: Harper Collins Publishers.

Mwamwenda, T.S. (1989). *Educational psychology: An African perspective.* Durban: Butterworths.

Nel, N. (2005). Chapter 8: Second language difficulties in a South African context. In Landsberg, E. (Ed.). *Addressing barriers to learning: A South African perspective.* Pretoria: van Schaik.

Nutbrown, C. (1999). *Threads of thinking*. (2nd ed.) London: Paul Chapman Publishing.

Pajares (2002). *Self-efficacy beliefs in academic contexts: An outline*. Retrieved June, 15, 2007, from http://des.emory.edu/mfp/efftalk.html

Pearson, P.D., & Stephens, D. (1994). Learning about literacy: A 30-year journey. In *Theoretical models and processes of reading.* Ruddel, R.B., Ruddel, M.R., & Singer, H (eds.). Newmark, Delaware: International Reading Association.

Quirk, M. P. & Schwanenflugel, P. (2004). Do supplemental remedial programs address the motivational issues of struggling readers? An analysis of five popular programs. *Reading Research and Instruction,* 43 (3) 1 - 19.

Rogers, C. (1983). *Freedom to learn for the eighties.* Columbus, Ohio: Merrill.

Santa, C. M. & Hoien, T. (1999). An assessment of Early Steps: A reading program for early intervention. *Reading Research Quarterly,* 34 (1) 54 – 79.

Schunk, D.A. (1991). Self-efficacy and academic motivation. *Educational Psychologist*, (26) 207 - 231.

Schunk, D.A. & Cox, P.D. (1986). Strategy training and attributional feedback with learning disabled students. *Journal of Educational Psychology*, (78) 201 – 209.

Sentoo, G.S. (2003). *The influence of animal-assisted play therapy on the self-esteem of adolescents with special needs*. Master's thesis, University of Pretoria, South Africa.

Shapiro, E. & Biber, B. (1972). The education of young children: A developmental-interaction approach. *Teachers' College Record,* 74(1) pp 55 – 79.

Skinner, B. F. (1938). *The behaviour of organisms: An experimental analysis.* New York: Appleton-Century-Crofts.

Stanovich, K.E. (1984). The interactive-compensatory model of reading: A confluence of developmental and educational psychology. In *Remedial and Special Education* 5 (3), May / June, pp 11-18.

Taylor, B., Frye, B. & Marigamu, G. (1990). Time spent reading and reading growth. American *Educational Research Journal*, (27) 351 - 362.

Thomas, A. & Chess, S. (1977). *Temperament and development*. New York: Brunner / Mazel.

Triebel, A. in Olsen, D. R. & Torrance, N. (Eds.) (2001). *The making of literate societies.* Oxford: Blackwell.

Troia, G. A. (1999). Phonological awareness intervention research: A critical review of the experimental methodology. *Reading Research Quarterly,* 34 (1) pp 28 – 52.

UNESCO (2002). *The long road to literacy in Africa*. Retrieved 29 February, 2008 from http://portal.unesco.org/education/en/ev.php-

Walker, R., Rattanavich, S. & Oller, J. W., Jr. (1992). *Teaching all the children to read: Concentrated language encounter techniques.* Buckingham, U K: Open University Press.

Yeh, Y. (2004). *Programmes to increase literacy in South Africa*. Global perspectives on human language: the South African context. Retrieved 29 February, 2008 from http://www.stanford.edu-jbaugh/saw/Yoo-Yoo_Literacy.html

APPENDICES

Appendix A: Participation Information Sheets

APPENDIX A1:TRAINEE PARTICIPATION INFORMATION SHEET

Dear Learning Support Specialist

My name is Gail McMahon-Panther. I am currently completing a Masters degree in Educational Psychology at the University of the Witwatersrand. My area of focus is that of the evaluation of the ecosystemic, constructivist approach towards learning support, Harcombe's CATLI, which you offered to a child at the Emthonjeni Centre at the university. This holistic approach emphasizes the role that the child's environment may have on his development. As the child in focus was allocated to you, I would like to invite you to participate in this study.

Participation in this research will entail you completing a questionnaire with regard to the child's development as well as to your perceptions of the process. Your responses to the questions will be anonymous as you will not include your name on the questionnaire. This is to ensure that what you say in the questionnaire can in no way be linked to you by me, thus enabling you to say what you would like to say in complete confidence. Your perceptions will be completely integrated into the findings, thereby making sure that your input cannot be linked to you. The completion of the questionnaire will be arranged so that it is convenient for you.

Participation is voluntary and no person will be advantaged or disadvantaged in any way for choosing to participate or not participate in the study. All the information received will be kept confidential, and no information that could identify you or any of the participants will be included in the research report. The questionnaires will not be seen by any persons besides the researcher and her supervisor. All the questionnaires will be kept safe under lock and key in the researcher's office and will be destroyed once the research is completed. A summary of the research findings can be obtained from me after the report has been marked. You can withdraw from the study at any stage if you wish to.

If you choose to participate in the study please contact me telephonically at 082 4012 548 or via email at gailpanther@vodamail.co.za

Thank you for your help in this matter.
Kind regards

_____ _____

Gail McMahon-Panther Ms Elaine Harcombe (Supervisor)

APPENDIX A2:PARENT PARTICIPATION INFORMATION SHEET

Dear Parent

My name is Gail McMahon-Panther. I am currently completing a Masters degree in Educational Psychology at the University of the Witwatersrand. My area of focus is that of the evaluation of the holistic approach towards learning support that was offered to your child at the Emthonjeni Centre at the university. The holistic approach emphasizes the role that the child's environment may have on his development. As your child was involved in this process last year, I would like to invite you to participate in this study.

Participation in this research will entail you completing a questionnaire with regard to the child's development as well as to your perceptions of the process. Your responses to the questions will be anonymous as you will not include your name on the questionnaire. This is to ensure that what you say in the questionnaire can in no way be linked to you by me, thus enabling you to say what you would like to say in complete confidence. Your perceptions will be completely integrated into the findings, thereby making sure that your input cannot be linked to you. The completion of the questionnaire will be arranged so that it is convenient for you.

Participation is voluntary and no person will be advantaged or disadvantaged in any way for choosing to participate or not participate in the study. All the information received will be kept confidential, and no information that could identify you or any of the participants will be included in the research report. The questionnaires will not be seen by any persons besides the researcher and her supervisor. All the questionnaires will be kept safe under lock and key in the researcher's office and will be destroyed once the research is completed. A summary of the research findings can be obtained from me after the report has been marked. You can withdraw from the study at any stage if you wish to.

If you choose to participate in the study please contact me telephonically at 082 4012 548 or via email at gailpanther@vodamail.co.za

Thank you for your help in this matter.
Kind regards

_____ _____

Gail McMahon-Panther Ms Elaine Harcombe (Supervisor)

Appendix B: Participant Consent Form

I, _____ hereby consent to participating in Gail McMahon-Panther's study on evaluating the ecosystemic approach to learning support. By completing the questionnaire, I understand that:

- Participation in this study is voluntary.
- I may refuse to answer any questions I would prefer not to.
- I may withdraw from the study at any time.
- Direct quotes from my comments may be used in the research report.
- No information that may identify me will be included in the research report, and my responses will remain anonymous and confidential.

Signed _____

Name _____

Date _____

Appendix C: Questionnaires

APPENDIX C1:TRAINEE QUESTIONNAIRE

LEARNING SUPPORT SPECIALIST QUESTIONNAIRE

By completing this questionnaire for Gail McMahon-Panther's study on evaluating the ecosystemic approach to learning support, I understand that:

- Participation in this study is voluntary.
- I may refuse to answer any questions I would prefer not to.
- I may withdraw from the study at any time.
- Direct quotes from my comments may be used in the research report.
- No information that may identify me will be included in the research report, and my responses will remain anonymous and confidential.

---

1. You have been part of the ecosystemic assessment and learning support process offered in the community centre.

1.1. What do you think of this process?

_____

_____

_____

_____

_____

1.2. Do you have any suggestions for improvement?

_____

_____

_____

_____

_____

_____

2. How helpful was the ecosystemic assessment process in helping you to understand your learner's strengths and needs?

_____
_____
_____
_____
_____

3. How do you feel this ecosystemic approach to learning support helped or did not help with regard to addressing your learner's strengths and needs?

_____
_____
_____
_____
_____
_____
_____
_____

4. Trainee LS specialists were required to collaborate with supervisors, parents and teachers at least?

4.1. To what extent were you able to do this?

_____
_____
_____
_____

4.2. How helpful was this collaborative experience for improving your learner's development?

_____
_____
_____
_____
_____

5. What effects do you think the CATLI had on your learner's literacy and general (cognitive, emotional, motivational and behavioural) development?

5.1. Why do you think this?

6. What important aspects of your learner's learning needs were supported, which probably wouldn't have been addressed using traditional literacy instruction procedures?

7. How would you compare the CATLI to other forms of literacy instruction?

8. How did you feel about the collaboration between you and your supervisor?

_____

_____

_____

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_____

8.1. How do you think it could have been improved?

_____

_____

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_____

9. How well do you think the combined training of lectures, practice and supervision equipped you as a learning support specialist?

_____

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10. In what ways do you think you could have improved the learning support provided?

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11. How do you think the CATLI works as an intervention in a South African clinic setting?

_____

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12. How do you think the CATLI works as an intervention in a South African classroom setting?

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_____

Thank you for your valued contribution.

APPENDIX C 2: PARENT QUESTIONNAIRE

PARENT QUESTIONNAIRE

By completing this questionnaire for Gail McMahon-Panther's study on evaluating the ecosystemic approach to learning support, I understand that:

- Participation in this study is voluntary.
- I may refuse to answer any questions I would prefer not to.
- I may withdraw from the study at any time.
- Direct quotes from my comments may be used in the research report.
- No information that may identify me, my child, my family and my child's school will be included in the research report, and my responses will remain anonymous and confidential.

---

1. Your family has come to the community centre for assessment and learning support at least.

1.1. Have you had any other support?

_____

_____

_____

_____

1.2. What do you think of the whole process?

_____

_____

_____

_____

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_____

1.3. How has it helped you and your child?

_____

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_____

1.4. Do you have any suggestions for improvement?

_____

_____

_____

_____

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_____

2. Do you think the learning support trainee understood your child's strengths and needs?

   Yes ☐ No ☐

2.1. Please explain:

_____

_____

_____

_____

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_____

_____

3. Most learning support (LS) trainees communicate with parents and teachers on a regular basis. What was your experience and was it helpful?

_____

_____

_____

_____

4. What do you think were the effects of the Learning Support (CATLI) on your child?

5. Would you recommend this process to other families? Why or why not?

Thank you for your valued contribution.

Appendix D: Results Tables

PARTICIPANTS INVOLVED IN QUESTIONNAIRES

LSSQ 1 - 9 = Learning Support Specialist Participants

PQ 1 - 9 = Parent Participants

EXTANT DATA SOURCES

TD 1 - 11 = Test Data indicating improvement from the CATLI Intervention, obtained from Exam Equivalents submitted by the learning support trainees in 2007

ELS 1 - 11 = Evaluation (Exam Equivalent) of the learning support (Harcombe's CATLI) process compiled by the learning support trainees for exam purposes in 2007.

The data from the questionnaires and the extant data were analysed and triangulated using a thematic content analysis. The researcher initially engaged with and familiarized herself with the data. She then produced initial codes from the data. By reflecting on the research questions, key-words in each question were described and categories were formed. Criteria for each category of analysis were then developed. The raw data was analysed transversely (questionnaires, test data and evaluations) and statements assigned to the relevant categories. In this way the data was coded. The coded data was then brought together to form themes. Here the researcher sorted the different codes into potential themes and collated all the relevant coded data extracts within the identified themes. The researcher, together with her supervisor began to refine the above themes by reviewing them. Some themes which appeared to be separate themes collapsed into each other to form one theme. The researcher finally defined the themes by identifying the essence of what each theme was about and determining what aspect of the data each theme captured.

The above mentioned process was collated into the following tables. The analysis provided data in an attempt to address the aims of this research report. In so doing, the analysis presented is divided into two sections, namely:

(1) Ecosystemic Principles (Research Aim 1), and

(2) Effects of Harcombe's CATLI on Learners' Development (Research Aim 2).