CHAPTER ONE

1. INTRODUCTION

Access to quality education was outlined as a fundamental human right granted to all children living in South Africa. Our Constitution (Act 108 of 1996) founded our democratic state and common citizenship on the values of human dignity, the achievement of equality and the advancement of human rights and freedoms (Draft National Strategy on Screening Identification Assessment and Support, 2005).

These values should guide all educators and people with a vested interest in the education of our youth to take up the challenge of building a humane, fair and caring society for all our people. In establishing an education system for the 21st century, we carry a special responsibility to implement these values and to ensure that all learners, with and without disabilities, pursue their learning potential to the full (Department of Education, White Paper 6, section 1.1.1, 2001).

Sadly, the lofty proclamations of our Constitution, so clearly outlined and upheld by the Constitutional Court of South Africa, often remain just ideals when held up to the stark reality of service delivery at the grass roots level. An evaluation of how learners were being identified and assessed for additional support in our schools had revealed challenges that needed to be addressed if we were to improve the learning conditions for all children in South Africa. One of the challenges identified as being of relevance to this study was identified as the limited access to special educational services and learner support facilities within schools. This led to a situation where children had been assessed and identified as needing additional support but were then marginalized and excluded in current mainstream settings (Draft National Strategy on Screening, Identification, Assessment and Support, 2005).

The South African education system and its structures were failing a large proportion of the learners of this country according to Bernstein's (2011) article 'Teachers poor value for money'. The education system was underperforming when compared with other African countries. In 1999 a national study reported that grade four pupils achieved the lowest average in numeracy and the fifth lowest average in literacy out of twelve African countries surveyed. Most of these countries had lower GDPs and more people living in poverty when compared to South Africa. The (2011) Annual National Assessment by the Department of Basic Education, benchmarked against international standards, showed that in grade six

national average scores in language were 28%. This was significantly below international norms.

Many factors had been discussed that could account for this significantly poor performance. These included low teacher to learner ratios, lack of discipline, poor funding, weak leadership in schools and not enough appraisal, performance management and upgrading of skills for teachers who were underperforming. Bernstein (2011) argued that one of the main contributing factors linked to the significant under-achievement in numeracy and literacy was that teachers were teaching subjects that they were not trained to teach, and that they were under-qualified and poorly managed in schools.

These points were a real cause for concern as they could be interpreted as showing a link to why a large population of learners with barriers to learning were not getting the literacy skills or learning tools that they needed to adequately access education, particularly in the foundation phase. What also emerged from Bernstein's (2011) article was the lack of access to quality teaching in lessons. With under-qualified teachers and with many teachers teaching subjects that they were not trained to teach, including teachers in the foundation phase with no formative training on how to teach reading, we were allowing a generation of learners to emerge with significant barriers to learning. This area of concern was only one of many variables, these being school related, that had a negative impact on literacy skill and learning skill development. What also had to be considered was a host of socio-economic, emotional, cognitive, intra- and inter-personal and physiological factors that could have a significantly adverse effect on literacy ability and cognitive learning skill development.

1.1 The start of my research process

As this research project was conducted at an independent, well-funded school in northern Johannesburg, I felt it necessary to explore the learning conditions and literacy abilities of children in a rural school that was in proximity to my chosen research site/school in order to contextualize my study. The rural school's principal was extremely accommodating and allowed me to conduct an interview with him. This school that I investigated had a comparable population size of eight hundred learners, but the teacher to learner class ratio was 45 learners to 1 teacher. Of these teachers fewer than half of the group had any accredited qualifications. Basic literacy rates were in line with the statistics referred to in Bernstein's (2011) report. The school did not have any learning support options available to its learners; this included both internal support specialists and external consultants being non-

existent. This information was made available to me by the principal through discussion and from a perusal of the school's matric results. (This exploratory visit was carried out so that I could contextualize and gain a perspective on the diversity and unequal distribution of learning resources in the general community where I conducted my study, this evidence did not form part of this study.)

This visit confirmed for me the immediate necessity and relevance of conducting case-study research projects that investigated and explored the critical success factors and challenges associated with facilitating support programmes in our schools that addressed literacy and cognitive barriers to learning. These programmes needed to be practical and accessible to schools at a grass roots level. Further projects and research needed to examine the viability of training teachers, and in certain extreme circumstances members of the community, to deliver support programmes in our schools. These kinds of grass roots initiatives were seen to be needed in schools where a multitude of external ecosystemic influences were barriers to effective learning. These external barriers included socio-economic circumstances, poor service delivery (in this case school management and quality of teaching) negative social influences including drug addiction, dysfunctional family structures, and homes with absent mothers and fathers due to diseases like HIV/AIDS.

The challenge of addressing the targets stated in the Department of Education, White Paper 6 (2001) and in our Constitution which states that every child has a right to quality and accessible education was not being met in real learning situations in most of the more economically disadvantaged communities in our country. What was of even more concern was that regardless of the ecosystemic circumstances that contributed to learners having a poor literacy ability or a lack of effective learning strategies, be it externally motivated as discussed, or an internal issue that could include a cognitive processing barrier, there was a need for more real solutions to be studied and implemented that addressed their unique and special requirements of each school's circumstances.

This research study was conducted as a participatory, site-based, case-study for the very reason that we needed to research and explore practical and realistic solutions to the problem of access to quality education for all our learners regardless of their barriers to learning. We needed to research support programmes and initiatives that could be implemented in our schools that were realistic, inexpensive, and practical on a grass roots level if we were even to

begin to address the multitude of issues that were causing our education system to underperform to the extent that research studies had indicated.

1.2 Statement of the Problem

The Department of Education, White Paper 6 (2001) stated, "as an urgent priority the overhauling and transformation of practices related to the identification and assessment in general with a view to achieving enabling mechanisms to support our learners who experience barriers to learning in the most appropriate way" (Department of Education, White Paper 6, 2001, p. 7). Within many schools and communities this was not happening. The learners with barriers to learning were expected to integrate into mainstream school environments with inadequate learning support strategies or support programmes in place. Many of the learners in South Africa with physical disabilities and special educational needs found that they were excluded from the education process as a result of a lack of adequate support in line with national inclusive educational principles. This problem was further exacerbated in communities where access to effective support for individuals was absent. My project was conducted at a school where access to additional support was more accessible; by this rationale it could be argued that the need for special intervention was only amplified in areas of South Africa where specialised support for individuals with learning needs was not as readily accessible.

My study was a site-based initiative at an independent co-educational school and was conducted as a participatory action research design. It explored the effect of a mediated literacy programme, called the Integrated Approach to Literacy Instruction (IATLI) on eight pre-selected grade eight learners. The programme was a learning support programme designed to mediate cognitive learning skills and literacy strategies to these eight learners. These participant learners had been identified through an ecosystemic process that considered school performance, teacher recommendations, parent recommendations, a history of underachievement or attendance in remedial schools and results from formal educational/psychological testing that showed them to have poor literacy ability associated with cognitive barriers to learning that was affecting their educational performance.

1.3 Research question

What are the critical success factors of the Integrated Approach to Literacy Instruction mediated to selected grade eight learners at an independent secondary school in South Africa?

1.3.1 Research sub-questions

1. Will educators and the mediator observe an improvement in literacy skills reflected in the learners' class activities over a six month period?
2. Is the IATLI programme enhancing the self-esteem of its target audience, in this case the participating grade eight learners?
3. Will quantitative and qualitative evidence show that the participant learners on the programme internalized the cognitive learning strategies outlined by the outcomes of the IATLI programme?
4. Does this method of programme mediation enhance the school's ability to provide an inclusive learning environment?
5. Have the stated outcomes of the programme been achieved?

1.4 Rationale

In my capacity as a learning support specialist I conducted an interactive programme that mediated the IATLI to a selected group of learners in grade eight at an independent secondary school. Candidates who were admitted to my programme in their grade eight academic year were learners with barriers to language and learning and as a result of this had been struggling to cope in a mainstream secondary school environment. The learners who were selected had all been identified as having special educational needs associated with cognitive processing barriers and literacy barriers that would make academic success and progress in a mainstream school difficult without support. The majority of the selected learners had come to my school from remedial primary schools where educational and psychological testing and school recommendations indicated that learning support should be provided to facilitate their progress.

This topic was researchable and important for the following reasons: Firstly, this was a site-based study which had obtained the full support of all the relevant stakeholders, so the participants on the IATLI could be easily accommodated and monitored. Secondly, the need for the programme to be implemented came from the school's plan to become a more

inclusive school in line with national education policy. Finally, it was determined by the researcher as extremely important that sound research be conducted to evaluate the strengths and weaknesses of site-based learner support programmes like the IATLI, as grass roots implementation of effective inclusive education strategies and literacy programmes were not being effectively achieved in all educational institutions in South Africa. Walton (2011) discussed how effective inclusive education in South Africa from the perspectives of the children with barriers to learning was under-researched. The intention was that my research project would add to the body of knowledge, associated with learner support, which was needed in South Africa if we were to redress the historical and pedagogical mistakes that had led to national inclusive education practices and policies lagging behind the progress made by many other countries.

1.5 Aims, objectives and purpose of this study

To mediate the Integrated Approach to Literacy Instruction IATLI to a selected group of grade eight learners from an independent secondary school.

The independent school that I selected was based in northern Johannesburg where the competition for placements in the independent schools was intense. The school chosen for this project had long waiting lists for each grade and was seen within the community as a very sought after place to pursue an education. These waiting lists were formulated once all the grade spaces had been allocated on a first-come-first-served basis. Application tests were only conducted with children in order to gather information as to academic strengths and weaknesses to aid in learner support provision and subject allocation. One aspect that was quite unusual about this independent school was that it was not very selective as to who it would admit, which was in line with the constitutional rights of all children in South Africa to an education free of any discriminatory processes. This meant that the school had a wide range of learning abilities within the learner population.

The school was also unique in the way it was built; it was designed to be a learning environment that was not 'institutional' in its structure. The school did not have any big blocks of classrooms, but rather small groupings of classrooms in a circular manner, connected by gardens and pathways. This dedication to an education environment that aimed to create a friendly and non-threatening learning space was also reflected in the school's policies of inclusive education, which saw the school build wheelchair access ramps in all areas to enable learners with physical barriers to education access to equal opportunities

within the school environment. As a result of this commitment and dedication to make education accessible to all learners, my proposal of the IATLI mediated learning support programme as an initiative to facilitate inclusive education in a grounded, practical way was accepted with interest and full support from the school's executive team.

The implementation was conducted through the utilization of individual learning support sessions with selected candidates. The implementation involved the process of evaluating the critical success factors of the IATLI conducted by the researcher at the site of the study. Learners who had been assessed and subsequently identified as needing additional learning support attended individual mediated learning support sessions after school and in some cases during the school day where timetabled. The facilitator/researcher only had the capacity to take a maximum of eight learners per year onto the programme as each learner required up to two hours of input each week. (The primary objectives are described in chapter two).

The critical success factors of integrating the IATLI programme into the school was evaluated qualitatively through Likert-Type teacher survey questionnaires, in depth semi-structured teacher interviews, commentary from the learners' perspectives recorded in the researcher's journal, and quantitatively though pre- and post-IATLI programme educational testing results that evaluated literacy skills and cognitive developmental levels of the participant learners. Formal testing revealed scores that indicated the learner's reading age, processing speed, spelling age, reading comprehension ability, phonetic analysis ability and auditory vocabulary levels. Qualitative analysis took the form of informal reading and writing evaluations done on a continuous basis as the learners participated in the programme; results and comments were then recorded in the researcher's journal.

Assessment was also continuous in nature and ongoing throughout the whole process. This continuous assessment evaluated vocabulary development, tracking speed, attention to detail and the effective use of the 'sound families' learning technique (Harcombe, 2001).

1.5.1 Details of the mediation programme

- The mediated IATLI programme was intended for learners who entered the school in grade eight where it became evident that they had literacy related barriers to learning that were linked to cognitive processing weaknesses.
- Learners who entered the programme had been recommended to me on the basis of a combination of the following: Educational testing scores that indicated below grade-

average scores, poor academic performance as evident from classroom assessments, parent and teacher recommendations or on the recommendation of an educational psychologist or remedial therapist who had specifically identified cognitive processing concerns/weaknesses that were affecting literacy acquisition.

- Educational testing that was conducted revealed the extent to which the learners' processing weaknesses had affected their literacy ability and their use of effective cognitive learning strategies. Formal pre-testing included the following: The Stanford Diagnostic Reading Tests (SDRT), Neale Reading Tests, Schonell Graded Reading and Spelling Assessments, and informal reading and writing assessments, each of which I administered. (Only pre- and post-programme SDRT scores were used as quantitative data for the purposes of this research study.)
- These test scores combined with an ecosystemic case history that included a track-record of prior learning support and academic difficulties were also considered when deciding on which learners were admitted onto the IATLI programme. All this information was recorded and analyzed by utilizing an Ecosystemic Graphic Organizer (EGO) for each learner.
- The mediated IATLI programme was intended to run for an extended period which incorporated up to twenty formal mediated learning support sessions with a frequency of one, and sometimes two one-on-one contact sessions per week.
- Due to time constraints on the mediator, and other demands including teaching and counseling commitments, the programme only had the capacity to facilitate eight learners in an academic year.
- Comparative post-testing results analysis from the SDRT Series, commentary from the researcher's journal, Likert-Type teacher interview responses, evidence of a 'goodness of fit relationship' with the learner concerned and semi-structured teacher interviews informed me of the level of success or failure of the programme regarding a particular learner. This information then ultimately dictated the length of time that a child remained on the mediated support programme (IATLI). This also provided me with the data needed for my study.
- The grade eight teachers, who were actively involved on a daily basis as subject teachers, were involved as stakeholders and who were active participants, agreed to the Likert-Type survey and recorded semi-structured interview process. Those teachers who participated in the semi-structured interviews were the class and subject

teachers of all the learners participating in the mediation programme. In total twelve teachers volunteered to formally participate in my study and provide me with data through the interview process.

- The researcher received ongoing feedback from the teacher participants and received regular feedback from the participant learners' parents.
- A structured questionnaire (Likert-Type-Scale) was also administered to all the academic teachers at the school who had any involvement in the schools inclusion programme or initiatives. This was done at the inception the IATLI programme's implementation with the learners. (23 teachers participated in this survey on a voluntary basis). (Appendix 9)

1.6 Conclusion to introduction

This introduction chapter highlighted the need for research of this type to be conducted in the South African social climate. The introduction also broke down the basic format and intentions of this study to help contextualise the arguments that were developed and discussed.

The literature review chapter unpacks the theoretical underpinnings of the IATLI and its use as a mediated learning support programme. This requires an examination of the seminal theories of Vygotsky and Feuerstein who developed and added to the constructivist approach to learning. The literature review also describes the cognitive and neuropsychology theories explaining how children acquire literacy skills and metacognition. The literature review chapter examines similar research studies in real contexts in South Africa and from around the world. The literature review also examines those studies that support my participatory research project and those studies that are in conflict with my research. I also report on the current literature and articles that highlight the significant problems and failures relating to the current state of education delivery in South Africa, with special reference to the inherent failures of our education system when addressing the plight of learners with significant barriers to learning. I also discuss and examine the literature associated with self-esteem and cognitive learning theories as these topics are central to the critical success factors noted in my research question and supporting sub-questions. What is also unpacked are the theories behind programme evaluation as this study set out to explore the critical success factors of the IATLI programme mediated at a specific site.

CHAPTER TWO

2. LITERATURE REVIEW

The previous chapter outlined the framework of this case-study research project and the method and general outcomes of the study as described by the researcher. The introduction chapter provided an outline of how the action research case study was conducted at the chosen site. This review of the literature provides the theoretical underpinnings and lens through which the study was conducted.

2.1 Introduction

This research project aimed to take the Integrated Approach to Literacy Instruction (IATLI) model and explore its effect when mediated to learners in controlled circumstances. The IATLI is a programme that is under-researched at present. The IATLI locates its theoretical background in cognitive modification theory, particularly in the seminal works of Vygotsky and the constructivist theories of cognitive modifiability. Feuerstein's (1980) Mediated Learning Experience (MLE) is a researched programme that supports the theoretical standpoints of Vygotsky's (1982) theories of cognitive modifiability. In turn, the IATLI programme's format, design and implementation strategies are based on the outcomes of MLE.

As the IATLI model is under-researched outside of clinical settings it is important that it be placed within its theoretical context. The first part of this literature review explores the historical development of Vygotsky's cognitive modification theories and its relevance to education, most notably its relevance to the IATLI and the mediation of learning strategies.

The IATLI and its theoretical framework are also explored in conjunction with the above mentioned MLE (Feuerstein, 1980). This is necessary as the methodology and the outcomes of the IATLI are based directly on the outcomes of Feuerstein's MLE. An explanation is given on how the techniques of literacy skill development are linked to learning skill acquisition, and how the whole method of instruction is a reciprocal mediated process. This process theoretically operates without an unbalanced power relationship between the learner and the facilitator which is in line with the mediated techniques of Feuerstein's MLE.

The metacognitive process of language acquisition outlined in the IATLI programme is then linked to cognitive language learning models outlined in Sternberg (2009), where the theory

of the neurological and cognitive structures and processes that are believed to be integral in literacy development, and the extrapolation of meaning from text, are examined.

The literature review then examines the theories and techniques of programme evaluation as described by Owen (2007) and Smith (1989). These descriptions are necessary as this project was a case-study that examined the IATLI programme in an authentic setting. It is necessary to contextualise and to 'place' this programme within the context and framework of a documented plan with a defined structure in line with proven programme evaluation techniques. I then continue with a description of the theories of evaluation and I contextualise this study within the framework of a naturalistic paradigm of thought as outlined by Worthen and Sanders (1987). This is where the concept of recording multiple rather than single realities is explored.

The literature review then examines similar types of studies to this research project. This is done in order to place my study within the community of research that investigates the critical success factors associated with mediated support programmes. These include programmes that focus on issues of self-esteem, literacy acquisition and cognitive learning strategies. It was also deemed necessary to consider programmes that had a similar research design, and that were conducted in authentic settings. This was important as this research project examined multiple realities through the case study investigation described in this dissertation; this included not only the critical success factors of the mediated IATLI programme, but also the degree to which the programme could be integrated into a mainstream school environment as part of an inclusive education initiative.

This literature review then presents research that is not supported by the IATLI learning support programme. Studies have been conducted within the South African context and internationally that conclude that no conclusive proof exists that there is a direct correlation between mediated learning support and improved literacy ability and learning skill development in children. It is necessary to critically analyse aspects of these theories to identify the strengths and weaknesses of their conclusions.

Finally this literature review examines the merits and complex issues surrounding the integration of inclusive education practices in 'real', 'authentic' settings. Arguments, discussions and theoretical studies will investigate whether real inclusive education environments exist, and to what extent support programmes hinder or enhance proper inclusive education initiatives.

2.2 An examination of the IATLI and the Ecosystemic Graphic Organizer within the context of constructivist theory

The Integrated Approach to Literacy Instruction is also known as the Cognitive Approach to Literacy Instruction. This alternative title provides us with a link to the theoretical constructs that define this learning support programme. The IATLI was developed from a constructivist framework of thinking in line with cognitive theories of psychology. The influences of Vygotsky's conceptual frameworks form the main underpinnings of the IATLI programme.

Vygotsky developed his conceptual framework of the Zone of Proximal Development (ZPD) which connects a general psychological perspective on child development with a pedagogical perspective on instruction. The underlying assumption supporting the concept is that psychological development and teaching or mediation are socially imbedded (Vygotsky, 1982).

Vygotsky (1982) examines how the level at which learners can solve tasks with adult guidance and the level at which they can solve tasks independently differs. With instruction/mediation the child is able to perform much better than when left to learn independently. The difference between the number of solved tasks that can be done without adult help, and the number that can be done with adult supervision defines the ZPD. The ZPD is also defined by the degree to which a child acquires scientific concepts, which later internalise as everyday functioning concepts.

According to Vygotsky (1982) the development of psychic tools, which include systems of motivation, written language, schemata, diagrams, maps and systems of notation, can only be developed within the ZPD.

Hedegaard (1989) explains that the ZPD in the classroom or learner/mediator environment can only be effectively accessed if the teacher is aware of the individual developmental stages of the children. In a class or small scale learning support environment children of the same age will have certain characteristics in common which can be built upon. However, if we also take into account the children's differing social circumstances, temperament, speed and cognitive processing strengths we will have worked within the ZPD as a relation between the planned instructional steps and the steps of the child's learning/acquisition process.

Donald, Lazarus and Lolwana (2011) discuss the importance and relevance of 'metacognition' when considering Vygotsky's ZPD. Metacognition is about being aware of

our thought processes, of how we think, plan and remember what we learn and what we do. In constructivist terms metacognition is seen as an important concept because when people think in a metacognitive manner they actively engage with their own thinking on a higher level. Effective learning within the ZPD requires that learners are aware of the metacognitive processes they engage in.

The description of constructivism in learning is outlined by Bruner (1966), another influential constructivist who describes the child as an active explorer and strategist. Bruner also believes that the learner's social context and the mediation he experiences are vital in shaping the form and effectiveness of his cognitive learning strategies. In Bruner's words, one finds no internal push to growth without a corresponding pull. This description highlights the value and importance that Bruner places on mediation as a necessity in developing the cognitive learning potential of a learner.

Cazden (1979) makes an explicit reference to Vygotsky's work in connection with the term scaffolding. This term and its meaning are central to the methodology behind the IATLI programme and its strategies behind the mediated teaching relationship between the mentor and the learner. Wood, Bruner and Ross (1976) describe scaffolding as similar but not exactly the same as Vygotsky's notion of mediation, but that scaffolding is basically mediating the appropriate structures and strategies of a particular area of knowledge to the learner.

Scaffolding as a method of teaching is central to the IATLI programme's focus on 'reciprocal teaching' and 'situational learning' which are both concepts attributed to Vygotsky's influence. Emihovich and Souza Lima (1995) explain how Vygotsky's influence has led to us hearing more about such concepts as 'cognitive apprenticeships', 'reciprocal teaching' and 'situational learning'. In all cases the teacher (as the mediator) plays a critical role in guiding the child's participation in activities intended to increase his understanding of a particular concept (Daniels, 2002).

Wood et al. (1976) in Daniels (2002) have defined scaffolding as a type of adult assistance that enables a learner to solve a problem, carry out a task or achieve a goal which would have been beyond his unassisted efforts. Wood et al. (1976) envisage a process whereby the mediator/adult controls those aspects of a given task that are beyond the learner's capacity, thus allowing the learner to complete those aspects that are within existing capabilities. The overall emphasis with this technique is on the creation of a pedagogic context in which the

combined effort resulted in a successful outcome. Crucially scaffolding involves simplifying the learner's role rather than the complexity of the task in a collaborative manner. Daniels (2002) describes how every time the learner makes a correct move or action when working through a new learning area the mediator reduced the level of support or control. If a mistake is made then the level of support is subsequently raised. The description of scaffolding discussed here describes how the mediated relationship between the learner and the adult is a dynamic and active process that requires two factors to be in place: Firstly a 'goodness of fit' relationship that contributes to levelling uneven power relations that inevitably exist. Secondly the success of the programme's intervention needs to take into account the personality and experience of the mediator in working effectively with the IATLI programme and with learners in one-on-one situations.

Critically this technique plays a role in developing a positive self-esteem and confidence in learners as they can take 'ownership' of successfully understood concepts or completed tasks which were previously beyond their reach. This ability of reciprocal learning through mediated learning sessions to have a positive effect on self-esteem is central to the desired outcomes of a mediated learning experience which is one of the critical success factors of this research study.

Vygotsky (1982) discusses how every function of a learner's cultural development appears twice, first on the social level and later on the individual level; first between people (on an interpsychological level) and then inside the child (intrapsychological level). This relates to collaborative mediated activities as the adult creates the social setting in which reading or cognitive skills acquisition takes place as a collaborative act. This setting is designed to ultimately facilitate the internalization of learning skills that ultimately lead to unsupported reading and learning.

Many studies have been conducted that explore Feuerstein's Mediated Learning Experience (MLE). Ben-Hur (2006) demonstrates, through his research with pre-school children in Canada, that the children show one year's advancement across a range of learning areas and cognitive learning skills seven months after being exposed to MLE and Instrumental Enrichment. Engelbrecht, Kriegler and Booysen (1996) refer to a small cross-section of studies worldwide that illustrate the positive effect of Feuerstein's programmes. Notably in the United States with learning disabled youth (Messerer, Hunt, Meyers & Learner, 1988), in Britain with children with special educational needs (Shayer & Beasley, 1987), and in South

Africa with gifted adolescents and pre-service teachers (Skuy, Lomofsky, Fridjho & Green, 1993). MLE provides a theoretical framework for the meaning-driven aspect of the IATLI programme.

Feuerstein (1980) describes the MLE as the dynamic interactive relationship that facilitates cognitive development. In working with learners, it operates both implicitly and explicitly to interpret and elaborate the child's direct experience with the world. In situations where developmental or environmental difficulties occur, it becomes the necessary relationship to overcome deficiencies and foster enhanced functioning. The MLE is a dynamic process between the educator and the learner that strives to use the learner's life experiences and developed schematic representations of the world to enhance the ability to interpret and internalise the information presented in the learning experience. Nixon, Martin, McKeown and Ranson (1997) explain how joint decision and agreement making practices define the negotiated learning environment in line with Feuerstein's interactive relationship between the learner and the mediator. Harcombe (2001) describes the meaning-driven aspect of the IATLI as a top-down process that starts with the 'whole picture' when teaching literacy. The learner's life experiences and 'known schematic representations' are used to improve the learner's ability to grasp and retain information and cognitive learning skills.

Feuerstein's (1980) MLE explores and analyses a set of cognitive learning tools that are intended to be mediated in one-on-one sessions between the learner and the mediator. Sometimes teaming up two learners can be advantageous. However, the one-on-one relationship is most intensive and focuses on the immediate and unique needs of the individual. These cognitive learning tools are integral to the design and outcomes of the IATLI and one of the critical success factors of my research project was whether evidence showed internalization of any of these cognitive learning tools in any of the eight learner participants. Skuy (1996) describes Feuerstein's cognitive learning tools as including the following:

- Intentionality and reciprocity: intentionality is when the mediator deliberately guides the interaction in a chosen direction and reciprocity is when there is an indication of when the learner is receptive to, and involved in the learning experience.
- Meaning: when the significance and purpose of an activity is conveyed to the learner and internalizes into cognitive schema.

- Transcendence and bridging: the goal is to promote the acquisition of principles, concepts, or strategies that can be generalized to issues beyond what is immediate in a learning session.
- Competence: when the mediator helps the learner develop self-confidence and skill to engage successfully in a given learning task.
- Self-regulation and control of behaviour: occur when the mediator intervened in order to make the learner conscious of the need to self-monitor, check over work and make the necessary adjustments to limit poor impulse control and improve attention to detail.
- Sharing: relates to the interdependence of the mediator and the learner which develops empathy and cooperation though social interaction. This is significant in balancing unequal power relations between adult mediator and learner mediatee. (Being able to learn from shared interactions and experiences is seen as a necessary tool in knowledge and skill internalization.)
- Individuation: occurs when the mediator develops a sense of uniqueness and difference in the learner. (This is linked to the necessity to perform effective and thorough ecosystemic enquiry before beginning interventions.)
- Goal planning: is when the mediator guides and directs the learner through the process of setting, planning and achieving school-based goals by making the process explicit. This explicit ability enables the learner to logically process and organize tasks and other challenges.
- Challenge: is when the mediator encourages a feeling of determination and enthusiasm in the learner to cope with novel and complex tasks.
- Self-change: occurs when the mediator encourages the learner to be aware of the dynamic potential for change and to recognise its importance and value.

Falik (1996) refers to our world as one that requires individuals to be adaptive and responsive to change that is happening at an ever faster pace than previously conceived. This means that it is vital that parents, teachers and caregivers take on the responsibility of helping learners achieve their full learning potential. Learners need to be able to identify with what they are taught and to be able to relate what they have learned to other abstract concepts. They cannot make progress with their learning by passively absorbing information only. With regard to the first focus of Falik's study, that of creating conditions for the advancement of learning

through normal learning interactions for parent/child and teacher/child situations, the goal must be to teach modifiability and the activation of behaviours and functions that become internalized in the learner's mental schema.

The primary objective of this study was to mediate to the participants the literacy and cognitive learning skills integral to the IATLI design through the creation of authentic learning situations presented in a meaning-driven way. An authentic learning situation is one where the content is practical and useful in the learner's social context. The content must also be both interesting to the learner, enjoyable to work with and have a concrete, authentic and grounded dimension. It cannot be abstract, beyond the child's potential and irrelevant. Using the IATLI in a learning support session aims to integrate firstly, meaning-driven tasks that incorporate theme development, text-based activities including story writing, higher order inferential questioning to promote transcendence of information, shared reading incorporating prediction exercises, and other authentic tasks where the learner can experience a feeling of ownership of what he has created. Secondly, stimulus-driven activities that include phonics games, instant word recognition games sequencing activities and use of the 'sound family' approach are integrated (Harcombe, 2001).

Harcombe (2001) elaborates on how we process information. She describes two types of cognitive information processing styles that people possess those being simultaneous and successive processing styles. Some learners have strength in their successive processing ability. This has to do with their sequencing of linearly related stimuli that cannot be integrated into concepts. Various aspects of paying attention to non-meaningful details, for example remembering a telephone number or an identity number are characteristics of successive processing applications. Incoming stimuli are focused by attention to details, sequences and clusters of information. Basically, successive processing arranges incoming stimuli in a sequence where the sequence of numbers or letters is more important than the meaning of the whole picture. This is often referred to as a 'bottom-up' processing style.

In contrast Harcombe (2001) describes the second type of processing ability, that being simultaneous processing, where the focus is on the person cognitively integrating various incoming sensory stimuli globally so that a whole and meaningful picture emerges. Das, Naglieri and Kirby (1994) provide the example of a pilot who has to navigate an aeroplane by fulfilling many roles simultaneously, these include reading instruments, viewing a map, looking for landmarks, and listening to radio control messages all at the same time. Incoming

stimuli are focussed by attention that includes schema concepts, the whole picture and meaning based concepts. This is often referred to as a 'top down' processing style. 'Top-down' processing styles are associated with Feuerstein's learning skill of 'meaning' where the significance and understanding of the concepts are internalised into the learner's mental schemata.

Harcombe (2001) explains how the theoretical background behind processing styles is what the IATLI model focuses on when designing a tailor-made programme for a particular learner. When applying the IATLI both top-down and bottom-up methods of mediation are integrated into a one-on-one learning support session. The practical activities of the IATLI programme include 'successive processing' stimulus-driven, incoming stimuli focussed on phonetic details, sequence and word clusters, such as word games, the sound family approach, word-order activities, sentence matching and tracking activities. The 'simultaneous processing' driven, incoming stimuli include meaning-based tasks, concept development, cognitive schema development and the retrieving of the global meaning of information and concepts. Practical meaning-driven activities include mediated theme development of particular interest to the learner, shared and paired reading activities, comprehension activities, and authentic creative writing activities where learners develop, write and publish their own stories. The development of the 'learning themes' for a series of learning support sessions is negotiated and will always be associated with a topic that is of interest to the learner. This negotiated process could then bridge unknown vocabulary and concepts into the learner's known schema. (A description of the activities of a typical IATLI session follows this sub-section.)

The literacy developmental process through IATLI instruction

The stimulus-driven approach is used simultaneously with the meaning-driven approach when mediating literacy instruction through the IATLI. The stimulus-driven approach, described as 'bottom-up' instruction, sees the teacher or therapist decoding the shapes of the scribbles on the page and linking them to the sounds, in other words concepts of 'sound/symbol' or phoneme/grapheme links are developed. This means that there is a cognitive association between the letter 'k' and the phonetic sound of the 'k' (Harcombe, 2001). This is interpreted that on a cognitive level, linking the sound of a letter to its symbolic representation on a page integrates a learner's auditory processing ability with their visual discrimination ability; this is then referred to as a learner's phonological awareness.

This ‘bottom-up’ approach has teachers/mediators first teach children to discriminate between the sounds in words in various ways using poetry and rhymes as examples. The next stage sees the development of the ‘whole-word’ sounds. This form of teaching often relies on basal readers to develop the ‘look and say’ abilities; that happen when a word is repeatedly read over and over and is then internalised and remembered. This type of learning develops the child’s neural pathways where synapses are developed as part of autonomic nerve responses.

The ‘bottom-up’ approach to literacy instruction also relies on the sequencing of words as stimuli. If a word is broken down into its sound clusters or the single sounds of the letters it was paramount that the learner can sequence these sounds otherwise the child would never be able to say the whole word properly. The ability to effectively integrate simple sounds into whole words relies on a child’s ‘successive processing’ ability. Repeated learning through repetition activities helps add to a person’s ‘sight word pool’. This is easy if a child is born with adequate potential in successive processing ability as this child will develop a large ‘sight word pool’ very early in his neurological development and will subsequently become a fluent reader. The literacy elements associated with the stimulus-driven approach of the IATLI include the use of ‘bottom-up’ literacy conventions, examples being punctuation, using phonics to encode and decode words, and the instant recognition of whole words. The cognitive aspects of this teaching method rely on the details in the picture, sequencing of the stimuli, clusters of phonemes, phoneme/grapheme correspondence and repetitive learning.

Harcombe (2001) refers to the literature that explains how a certain sector of the population is not born with even an average ability for developing adequate successive processing abilities. These people will struggle with phonics and letter sequencing and will subsequently not develop a large, functional ‘sight word pool’. Furthermore children with poor successive processing abilities find spelling difficult, their reading is inaccurate, have a slow reading rate and are not fluent readers, with many hesitations, substitutions of words and word omissions present as they read. From an ecosystemic perspective any child who is a weak successive processor and has spent his early years at school being taught to read with a very stimulus-driven method will possibly have a negative impression of the reading and writing experience and will subsequently doubt their own learning ability based on their inability to read fluently or write accurately. This individual could struggle to obtain recognition at a school which mostly provides positive reinforcement for learners who spell competently, read out loud fluently and organise sentences properly. If, and by the time this child receives effective

learning support not only is he struggling to cope with the academic demands of his grade, but his self-confidence and self-esteem have been adversely affected. Any intervention, be it an inclusive approach from a class teacher or interaction with a therapist, will need to address the engendered negative attitude to learning of the individual and his feelings of poor self-worth. This links closely with the mediation of Feuerstein's (1980) cognitive learning tools of 'competence' and 'self-change' as effective mediation of these leaning tools through IATLI sessions to address the issue of low self-esteem that is so often associated with the above mentioned learning situation.

2.2.1 The structure of the IATLI Learning Support Curriculum

Harcombe (2001) describes the structure of a learning support session as incorporating a set of planned activities that integrate both 'bottom-up' (stimulus-driven) and 'top-down' (meaning-driven) tasks that are tailored specifically to the interests, cognitive processing strengths and specific literacy needs of the individual.

Harcombe (2001) provides a conceptualization of the integrated design of the IATLI with this description: Top-down literary elements of a learning support session include comprehension activities, prediction tasks, and narrative components including the development of story plots and characters. The cognitive processing involves the meaning or semantics of literacy instruction that includes the development of the 'whole picture', meaning based concepts linked to vocabulary and some aspects of syntactics (grammar).

The literacy elements of the bottom-up (stimulus driven) aspects of the IATLI include punctuation development, the use of phonics to decode and encode words, instant recognition of words, the cognitive processing of details in a picture, sequencing, clustering of phonemes and phoneme grapheme correspondence. In a mediated session these top-down and bottom-up methods of instruction, i.e. both the whole picture (meaning) and details in a picture (phonics) are taught simultaneously, where activities of a session utilise both processing elements at the same time.

A typical IATLI session with a learner on the programme followed this basic outline described here, as described by Harcombe (2001):

Step One: Theme planning

Here the learner and the mediator decide on a learning theme that is of interest to the learner and the theme is then discussed and unpacked explicitly. This is a negotiated process where the learner provides ideas to be explored with scaffolding provided by the mediator. This aspect also includes development of the authentic learning environment or setting, concrete operational activities that involve designing and making objects that include real, visual mural scenes, sculpting, acting, painting and drawing. This is all done with the intention of creating an individualised, stimulating learning environment that maximises sensory stimulation and appeals to the child's personal sensory processing style focussing on the negotiated learning theme. The aim is for experiential learning through discovery and enjoyment.

Step Two: Theme initiation

The theme is initiated with videos and stories. Simple writing tasks are planned and executed, mind-maps are used and 'self-monitoring' and 'bridging' strategies are developed (Skuy, 1996). The theme is investigated and relevant materials and vocabulary are incorporated into aspects of developing poems, songs, speeches and stories. A focal point of the theme initiation process is the development of authentic creative writing opportunities that incorporate the vocabulary mediated in the 'stimulus driven' activities for use in the text based tasks.

Step Three: Shared reading

The learner and the mediator share the reading of a book that is linked to the chosen theme and of interest to the learner and appropriate for his ability level. Prediction activities are practiced and the story's plot, characters and scenes are explored. In shared reading activities the mediator is modelling the correct tone, rate and fluency. In paired reading the mediator and the learner also take turns to each read paragraphs or sections alternately.

Step Four and Five: Text based tasks including publishing:

A topic is chosen from the theme. The words and sentences explored in literacy based practice are incorporated into the reading phase and story ideas are then included onto creative writing graphic organizers. This is followed by the planning of the text continuing with creative writing graphic organizers. The next phase involved the writing of the text

where the story is constructed one component (checked paragraph) at a time. Finally the written story is edited by the learner and the mediator (integrated bottom-up element) and the corrected creative writing story is published as a mini-book or short story to develop an authentic product that can generate a feeling of positive self-worth in the learner through creative activities. This develops the mediated learning strategies of 'self change' and 'competence' as described by Feuerstein (1980).

Repeated reading Sentences and words constructed or explored with vocabulary that is relevant to the theme based story or to words from the 'sound family' activities are developed into structured sentences and these are then repeatedly read out by the learner to internalise them into known cognitive schemas to increase their 'sight word pool'.

Step Six: Literacy-based practice

Tracking activities: These are timed tasks that require the learner to pay considerable attention to the detail of a random collection of letters tracked left to right across a page and identify the required alphabetical sequence. (Learners compete with themselves to better their times.)

Word matching: Word games are used, and include commonly known fun activities examples being 'snap' and 'lotto' and 'bingo' to practice the ability of the learner to instantly recognize new words and internalise them into his/her cognitive schema. These words originate from 'sound families' and from the developed meaning based theme.

Sentence matching/construction: This involves the instant recognition of sentences learned through repeated reading exercises which are incorporated into recognition games. Identical sentences are placed on the table and are cut up and reorganized. Sentences are constructed and examined systematically and explicitly by both the mediator and the learner for grammatical and structural errors. This helps the learner enhance his attention to detail and correct sentence construction abilities.

Shared writing: Here the learners create interest based journal entries, letters and short stories for the only purpose of fun and enjoyment of the writing experience.

Sound family approach: Sets of words that contain the same phonetic sound like 'et' are examined and learned. Examples of words can include 'met', 'jetted', 'reset'. These words are sounded out and the grapheme combinations are internalised into the learner's mental

schema. These words are then used in other literacy based tasks described here in a typical IATLI session and in theme centred activities. Further words with the same sound family are explored, rhymed, used in new sentences and then used in word matching games.

Negotiated reward system

As previously mentioned, the IATLI is a negotiated, reciprocal process between the mediator and the learner. The development of a personal, authentic reward structure where the learner is rewarded for his progress through the activities is integral in developing Feuerstein's (1980) mediated learning strategies of 'competence', 'self-regulation' and 'intentionality and reciprocity'.

2.2.2 The Ecosystemic Perspective

Bronfenbrenner's (1977) model of child development was influential in paving the way forward for modern ecosystemic perspectives on learner evaluation. Bronfenbrenner has had a wide and significant influence in developing our understanding of how different levels of systems interact in the process of learner development. In Bronfenbrenner's model child development happens within four 'nested systems': the microsystem, the mesosystem, the exosystem, and the macrosystem and they all operate within the chronosystem.

Bronfenbrenner (1977) analyses these systems as follows: Microsystems describe the proximal interactions that children had with other familiar people in their lives. Mesosystems describe sets of microsystems operating and interacting with each other and those interactions can have had an impact on the learner in the classroom. Exosystems include other systems in which the child is not directly involved; these could be a brother's peer group or parent's workplace interactions. Finally macrosystems involve dominant social and economic structures, as well as values, beliefs and practices that influence all other systems. The chronosystem accounts for the developmental time that affects the interactions between the other systems. The development of these interacting systems in a child's life and the recognition of their impact on their learning development are seen as contributing to a paradigm of thought that is linked to the development of the Ecosystemic Graphic Organiser that was applied in this research study.

The Ecosystemic Graphic Organizer (EGO) is an evaluation tool used to drive the focus, the unique design and the intended outcomes of an individually tailored IATLI support initiative. It helps the mediator bring together a holistic 'picture framework' of the learner's individual

special educational needs. Once completed, the 'framework' identifies the learner's dominant processing style and processing style weaknesses, reading and writing strengths and weaknesses, learning strengths (visual, auditory or kinaesthetic), and any other relevant material that makes the meaning-driven component of the IATLI more accurate, relevant and effective. This relevant material includes an understanding of the learner's temperament, intra- and inter-personal relationships, emotional state, socio-economic background and family history. The EGO is further developed and described by Harcombe (2001) as the assessment framework that needs to be in place to direct and target the mediation of the IATLI. In my study the EGO analysis formed a fundamental component of the research process. An extensive ecosystemic evaluation was essential in order to construct an informative picture of the individual needs and requirements of each learner so that mediated learning support sessions could be individually focussed. This study was also conducted as a series of individual case-studies with each of the eight learners and each child's unique reality and set of intra- and inter-psychological factors (obtained from the EGO's) being considered at all times when drawing conclusions from the data generated. It was not sufficient to generalise conclusions from the data as each child's unique set of causal variables had to be taken into account. (Summaries of the EGO for each learner are included as appendices 1-8).

2.3 Mediation as an Interaction Method

The overall goal of mediation from an educator's perspective is to heighten awareness, enable relationships to be observed and understood, as well as to increase anticipation and further responsiveness. Through this process the learner's cognitive structure is affected. Feuerstein (1980) points out that the learner acquires behaviour patterns and learning sets which, in turn, become important ingredients of his/her capacity to become modified through direct exposure to stimuli. This explanation describes how the learners in our schools bring their own cognitive skills and experiences to the learning environment.

The educator needs to mediate and model effective tools and strategies to the learners in educational settings in order for these learning skills and strategies to be internalised and utilised in the learner's own acquisition of knowledge. This process is necessary to ensure that effective inclusion takes place. It is not sufficiently adequate to teach a group of learners with a variety of abilities and learning barriers in the same educational setting if the content of the lessons is not differentiated by the educator then internalised and understood by all members of the group.

The intended mediation of the IATLI needs to follow the concepts outlined in the current literature of inclusive education philosophy. The inclusive education approach to teaching had its origins in the United States in 1973. The movement culminated with the drafting of the Salamanca Statement and Framework for Action on Special Needs Education (Adopted by the World Conference on Special Needs Education, Spain 7-10 June 1994, UNESCO). Extracts from White Paper 6 on Special Needs Education: Building an Inclusive Education and Training System, (2001) defines inclusive education as accepting and respecting the fact that all learners are different in some way and have diverse learning needs which are equally valued and an ordinary part of our human experience. Also defined in the White Paper 6 is the necessity of changing attitudes, behaviour, teaching strategies, curricula and the learning environment to meet the particular needs of all learners, and the need to enable education structures, systems and learning methodologies to meet the broad spectrum of needs of all learners. My site-based study involved a school that embraced the conceptual framework and policies associated with inclusive education as defined in the National Education Policy documents, and the participatory intervention involved the mediation of cognitive learning strategies to individual learners in line with these frameworks and policies.

2.4 The cognitive process of speech and literacy

The theoretical underpinnings of the IATLI as described by Harcombe (2001) needed to be put into perspective from a cognitive psychological point of reference. The cognitive processes and brain functions associated with language and literacy acquisition needs to be examined so that the methodology used in the delivery of the IATLI can be properly understood as it was applied. Many educational programmes that were implemented through, and in the South African education system in recent times had met with minimal success. Many of these programmes failed to fully understand or consider the cognitive psychology behind the development of language and literacy development. As discussed, the IATLI was based on the constructivist theories of Vygotsky (1982) and the practical cognitive learning strategy/skill development theories of Feuerstein's MLE. (1980). This section highlights the cognitive processes and functions associated with literacy acquisition.

Collins, in Sternberg (2009) describes language and reading as an extremly complex cognitive process, which at a minimum reading-level involves memory, language, thinking, intelligence, and perception. If children have barriers to reading associated with memory retention, auditory processing, phonetic analysis, semantic memory or other cognitive

learning disabilities these can have a severe impact on their social and academic development, as we live and function in a society that places such a high premium on fluent reading and comprehension ability.

Problems in phonological processing and thus in word identification are described as the main stumbling blocks when learning to read (Pollatsek and Rayner, 1989; in Sternberg, 2009). When considering dyslexia as an example, several different processes may be impaired. These include phonological awareness (the awareness of the sound structure of spoken language), phonological reading (the reading of words in isolation) and the third process, phonological coding in working memory (which involves the process of remembering strings of phonemes that are sometimes confusing). Finally, the dyslexic child can have had difficulties with lexical access, which is the inability to retrieve phonemes (smallest unit of speech), from long-term memory (Sternberg, 2009).

The ability to read is a remarkable and very complicated process that requires the brain to make autonomic, split-second decisions. These decisions have to be made almost instantaneously without error where a large amount of information is processed through neural pathways in the brain. When reading we can instantly identify the 's' or the 'h' code or symbol in both the upper-case and the lower-case form, this relates to visual form which is referred to as 'orthographic'. This orthographic visual representation of the letter then needs to be translated into a sound, creating a phonological code. After you have managed to translate the visual symbols into sounds you must then sequence these sounds to make a word (Pollatsek & Miller, 2003).

Learning to read and mastering the skills of reading has been described as a metacognitive process that integrates working memory, long-term memory and the effective neural pathways associated with the retrieval of information. This metacognitive process also requires the working memory structures of the brain to have the ability to effectively sequence information to create meaning from the output aspect of reading and communicating verbally. Sternberg (2009) describes two basic types of perceptual processes that need to be mastered by a child when he is learning to read. These are 'lexical processes' and 'comprehension processes'. Lexical processes were used to identify letters and words; they also activate the important and relevant information in memory about the structures of words. Comprehension processes are used to make sense of the text as a whole. These

concepts are then considered as the top-down and bottom-up approaches to perception where language development and reading development are concerned.

This understanding of the metacognitive processes associated with language is fundamentally relevant to the IATLI model. When a child presents with poorly developed successive processing ability he will demonstrate problems with the retrieval of the phonemes, graphemes and associated word orders from his working memory in the correct sequence. Depending on the severity of the successive processing weakness, he will struggle with word identification, spelling, and the reading of words not internalized into his set of known words that will be part of his cognitive schema.

The IATLI programme offers a curriculum that is driven by the simultaneous integration of both top-down and bottom-up methods and activities to develop the learner's lexical access. A learner who has a weak successive processing ability and a developed simultaneous-processing ability needs to have integrated and focussed, top-down, meaning based input (from theme development and text based activities) when learning and interacting with literary constructs that include vocabulary and word structure. This is so that literacy and language neural structures can be successfully accessed.

Sternberg (2009) discusses how 'lexical access' is one of the most important aspects of learning to read (or in the case of the IATLI, to improve literacy acquisition). Many cognitive psychologists who study language learning refer to the basics of the 'interactive-activation' model, which combines information from many levels of cognitive processing and includes the 'features' of letters, the letters themselves, and the words that are made up of the letters (Morton, 1969; Rumelhart & McClelland, 1981; 1982).

This lexical access model features three levels of processing following the visual input when the child tries to interpret the text. These are the feature level, the letter level and the word level. This model assumes that information at each level is represented separately in memory structures of the brain. Information coming into the brain from sensory input (sight) passes from one level to another bidirectionally. This means that processing occurs in two directions. Firstly it is bottom-up starting with sensory information and working up to higher levels of cognitive processing; secondly it is described as top-down, starting with 'high level' cognition, working on previously internalized knowledge imbued with meaning and experiences related to a given context. This means working with new information, and the retrieval of internalised information from the known schema when teaching reading. On a

practical level this included theme teaching around a topic that is relevant and known to the child whom the mediator/teacher is interacting with.

Sternberg (2009) explains how the process through which we translate sensory information (visual representations like letters on a page) into meaningful information that we can perceive is referred to as 'semantic coding', or basically retrieving word meaning from memory. Sometimes we cannot semantically encode a word because its meaning does not exist in our memory systems. We then have to find another method of deriving the meaning of words, such as finding the meaning in the context in which we read them. Readers would never be very good at reading if they do not have knowledge of the word components that make up a particular sentence. Vocabulary size is positively related to written and oral decoding ability in a number of semantic-understanding tests and tasks (Beck, Perfetti & McKeowan, 1982). Children with an underdeveloped vocabulary as a result of any type of ecosystemic reason, be it that the language is a second language, or that the child has had a traumatic and disrupted childhood that resulted in gaps in their basic language acquisition, or that they have a cognitive processing barrier, will struggle to achieve in a mainstream classroom setting where differentiated support that considered their particular circumstances is not available to them.

2.4.1 Links between neuropsychology applications in education and the IATLI programme

The methods of instruction described as integral to the IATLI outlined by Harcombe (2001) and the associated mediated cognitive learning strategies described by Feuerstein (1980) support current research in neuropsychology.

The research and approach to teaching called the 'layered curriculum' developed by Nunley (2006) is comparative to Harcombe's (2001) IATLI learning support programme in a number of ways. The layered curriculum is a method of lesson design that accommodates both one-on-one mediated interactions and class teaching. The layered curriculum emphasizes the need for learners to have experiences with all cognitive learning skills through choice and critical thinking and active engagement. The layered curriculum is a three layered model designed to individualize teaching or mediation to accommodate the mixed abilities of learners, encourage higher levels of thinking and make the learner accountable for his learning process (Nunley, 2006).

Nunley (2004) explains that the more a learner masters a task or a cognitive skill, the less brain function is needed to process the cognitive task. Skills need to move from the brain's cerebral cortex to the lower brain and the spinal column in order for them to be fully internalized into the child's cognitive schema.

According to Nunley (2004) if the mechanics of reading is a cortical process requiring active thought (as in the case of a learner with reading difficulties) and not an automatic, internalized process, then meaning comprehension will be difficult. When the learner's sight-word pool, tracking ability and phonetic analysis are sufficiently developed they will add to skills enabling reading to become an autonomic process. When this happens comprehension of the text can develop. Skills need to move from the cerebral cortex to the lower brain where they become autonomic functions. Nunley describes the necessity for the mediator to attempt to develop reading fluency in children. Nunley's research into the use of the 'layered curriculum' describes the process of 'guided reading' as an essential contributing component in achieving reading fluency. This process of guided reading or shared reading is an integral component of the IATLI and is seen as a non-confrontational process that develops reading ability. Through guided reading activities, content and vocabulary that is not understood by the learner is discussed and linked to his known schematic constructs. The shared reading process is essential in developing literacy skills and acquisition of meaning and is most effective in a mediated learning environment (Nunley, 2006).

Nunley (2006) explains how there is a need to make learning interest based and learner centered or teachers lose the focus of the children who are not interested, or who cannot relate to what is intended to be taught. This is in line with the methods of the IATLI which allow for the development of 'learner driven', interest based, theme development.

Nunley (2006) describes the importance in establishing the 'goodness of fit' relationship between the learner and the mediator. She explains the relationships that exist between how a learner is taught, how their brain functions and processes information and what their interests are. Nunley's methodology behind the 'layered curriculum' and mediated teaching requires the educator to individually access the learner's particular learning style and teach to that learning style's cognitive processing strengths. Similarly, developing the 'goodness of fit' relationship with the learner and working with their cognitive processing strengths is a key element of the IATLI. This is then supported by the comprehensive development of the

Ecosystemic Graphic Organizer that integrates the social, emotional and cognitive processing circumstances of the learner into a profile from which mediated support sessions can be structured.

Nunley (2006) discusses that when working with learners educators should apply the neurodiversity model that works with what the child has at their disposal rather than try to use a medical model that focuses on deficits and their accommodation. This paradigm of thought is supported by the constructivist approach behind the methodology of the IATLI that examines the causal relationships between the learner, his environment and his barriers to learning. The ecosystemic process is designed to determine the processing strengths of a learner as well as to identify what they have at their disposal to aid their cognitive development and skill acquisition.

Nunley (2006) explains how all people want some level of control in their environment, not alienation from that environment; this also applies to children who need to feel that they have control over their learning environment. She describes how the mediator needs to provide the learner with choice to direct their own learning, and through having choice they feel that they are valued and are a part of their own learning experience. This is exactly what the IATLI aimed to achieve as the mediator was providing a meaning based learning environment that promoted choice that in turn activated the child's learning ability. Control over the learning process in a child's life, through personal direction and choice, then has influence on the other causal relationships that exist. Examples of these other causal variables being learning skill development, literacy fluency, 'goodness of fit' through a meaning based interest based approach and positive self esteem.

Nunley (2006) explores how students need to be made accountable for their learning and need to be rewarded through a system that recognizes success and is based on positive reinforcement. The reward system is an integral part of the IATLI in developing self-efficacy and self-change. In the IALTI sessions the reward mechanism is determined by the learner and is a negotiated process which creates a partnership and breaks down the concern of uneven power relations which can undermine and negatively affect the outcomes of the one-on-one relationship.

Brain development is linked to the negotiated one-on-one shared learning environment where feedback from what is taught comes from the learner and this feedback reinforces the neural pathways that have been developed (Nunley, 2006). The reciprocal interactions between the mediator and the learner both provide the mediator with evidence of internalization of cognitive learning strategies that 'included meaning', 'transcendence', and 'competence' (Skuy, 1994) and the opportunity for the leaner to reinforce their understanding of the chosen theme and associated content.

2.5 Programmes

It can be argued that rigorous evaluation in education is a fundamental necessity of the process. How else would effective reflection be possible, and how else would we improve upon existing structures and pedagogy in an ever-changing and dynamic environment?

Essentially, evaluation is a broad practice that encompasses the evaluation of policies, programmes, products and individuals. For the purposes of this study we are mainly interested in the evaluation of programmes (Owen, 2007).

Smith (1989) defines a programme as a planned set of activities or tasks directed toward bringing about specified and directed changes in an identified and identifiable audience. Smith goes on to describe how a programme essentially comprises a documented plan which is designed to achieve an outcome and a plan of action. In the case of this study the learning support plan is designed with a goal or outcome in mind, that of mediating learning strategies and language skills to a selected group of learners.

Owen (2007) refers to the existence of a formal 'evaluation language' which defines a 'theory of action' or 'programme logic'. One aspect of this theory of action refers to the premise that we take for granted that those responsible for the design of the plan have sufficient skill to codify solutions to the problem that the planned programme will be addressing.

Programmes can be planned and presented at various levels within our society. The broadest level referred to is a mega-level programme. This type of programme is often devised and developed at government or national level. At this level the planning is designed to have wide ranging economic or social impact. The second level of programme planning or design is often referred to as macro-level programmes. These are smaller in scope and typically exist as the responsibility of a division in a company, region or group within an organisation.

The third level is defined as the micro-level which is the responsibility of small teams or individuals. What makes the micro-level unique is that this is the level that interacts directly with the people who will be affected directly by the programme implemented (Owen, 2007).

The participatory, action-research-based study that I have conducted and described in this report is in line with Owen's (2007) description of a programme that operates on a micro-level. This is because the eight participant learners that were selected engaged actively with the constructs and demands of the IATLI learning support programme, in a real and authentic setting, as a case-study design. This setting involved the learners spending time in learning support sessions as part of the school's academic timetabled structures. The next sub-section investigates alternative approaches to evaluation from a methodological standpoint.

2.6 Alternative approaches to evaluation

Worthen and Sanders (1987) point out that there exists no univocal philosophy of education evaluation. This has, however, not stopped intensive debate over the years concerning philosophical assumptions and epistemology in an attempt to add value and develop effective systems. Basically, the different approaches in research which try to establish truth and merit are responsible for the diversity of views in educational evaluation.

House (1983) refers to the differentiation between objectivist and subjectivist epistemology. Objectivism requires that the evaluation information (usually quantitative data) of an educational programme be 'scientifically objective' which will involve control experiments conducted in controlled environments. These objective studies will have to be reproducible and verifiable by competent persons using the same techniques. Objectivism is derived from the social science tradition of empiricism (Worthen & Sanders, 1987).

The subjective approach to evaluation bases its style and validity of results on an appeal to personal experience rather than scientific methodology. Logical positivism and objectivism dominated the social sciences for many decades but the tide has definitely turned against this school of thought in education evaluation in recent years. Guba and Lincoln (1981), Campbell (1984) and Scriven (1984) all argue that any lingering positivistic, objectivist evaluation should be eliminated. Guba and Lincoln have challenged the infallibility of the hypothetico-deductive inquiry because of its limitations in dealing with complex, interactive phenomena in educational settings.

The debate continues unabated as the subjectivist paradigm has not escaped unscathed. Boruch (1981) points out that unscientific methods of enquiry often lead to results that cannot be scientifically verified, and that are contradictory and therefore of dubious worth.

2.6.1 Naturalistic and participant orientated evaluation models

In the late 1960s many evaluation theorists began to react negatively to what they saw as insensitive and mechanistic approaches to evaluation of education programmes. These theorists began to take issue with what they perceived to be scientific and sterile evaluation techniques preoccupied with stating and classifying objects and human responses (Worthen & Sanders, 1987).

Previous evaluation techniques seemed to be preoccupied with the notion of the evaluator having an influence on the evaluation process. These researchers hypothesized that any involvement would have a negative impact on the research, which inevitably would take accuracy and scientific objectivity away from the final results. The new form of evaluation discussed here stresses the need for 'first hand' activities within an educational setting.

Stake (1967) was the first researcher to provide significant impetus to a type of evaluation called participant-orientated evaluation. Guba's (1969) discussion on the failure of how evaluation is conducted provides further momentum to the search for a form of evaluation that would be an alternative to the dominant and pervasive use of rationalistic enquiry. Parlett and Hamilton (1976) complained that the "agriculturalist-botanist" paradigm was insufficient and inferior to be used as an acceptable model on which to base effective evaluations. They subsequently presented an alternative model which they coined the "illuminative evaluation approach" (Worthen & Sanders, 1987).

Those researchers who use naturalistic approaches to evaluation usually design descriptive accounts of the person, classroom, unique school environment or project that they intend to study. Evaluations that use this approach tend to include the following characteristics as outlined by Worthen and Sanders (1987). Firstly, the dependence on inductive reasoning, which relies on a process evaluation from a grass roots observation and discovery process. For example in a South African context the evaluation of the success of a school's reading programme would be done by the evaluator where understanding emerges from observations and reflections and then subsequent approaches can be altered. The end product of the programme is not projected before the evaluation is completed. The researcher follows this

theoretical premise of a dependence on inductive reasoning when analysing the various forms of data elicited from the site of this case study. During the coding and theme building analysis techniques that were undertaken in my research project to evaluate information gathered for the researcher's journal, which included the learner participants' responses, the researcher followed analysis techniques that ensured that the process was a journey of discovery, rather than an attempt to find backup for a predetermined conclusion.

Secondly, participant evaluation models use a multiplicity of data. Qualitative and quantitative, and subjective and objective avenues would all be considered and discussed. A typical evaluation of this nature in a school setting such as the mediated IATLI programme mentioned here would include surveys, questionnaires for interviews and quantitative educational benchmark test results. The final evaluation would assimilate all the information to develop a 'rich text' of information that supported the proposed hypothesis, rejected it or partially supported aspects of it, ultimately leading to further discussion and reflection.

Thirdly, this form of participant naturalistic enquiry will not follow a standard plan. Worthen and Sanders (1987) explain how the evaluation process evolves as all relevant stakeholders and participants gain experience in the activities and processes that might have an impact on the resultant data. Often the important outcomes of the evaluation process are the deep understanding of a particular entity of the study. In the case of the evaluation of a reading programme that deep understanding might be the anxiety levels observed in the learners reading out loud in front of their peers and the adverse effect this might have had on their reading ability, temperament and self-esteem notwithstanding. This links with the need for effective EGO analysis at the inception of a programme that gives the researcher or programme coordinator an insight into a learner's temperament and emotional state.

Finally, naturalistic enquiries record multiple rather than single realities. What this implies is that all people have a different way of interpreting and understanding their reality, and no one perspective can be accepted as the absolute truth. The goal of the naturalist enquiry will therefore be to accept all responses as correct, but the challenge is to then represent them without sacrificing the complexity of the study.

The naturalistic paradigm of thought and its implications for research are relevant to this study for the following reasons. This study involved real authentic settings which were not artificially constructed for the purposes of the study. The aim of the research was partially one of a discovery of the unfolding events of the IATLI programme and its implementation,

so the end product was not projected before the project had been fully implemented. My research also aimed to record multiple rather than single realities and to try to represent the complexity of the study from a variety of perspectives and from a mixed selection of data collection methods.

The next sub-section examines the methodological orientation and the applied techniques involved in evaluative enquiry.

2.7 Focussing evaluative enquiry: evaluation forms and approaches

Over the last two decades many social scientists have put forward various types of educational evaluation models. These models have attempted to classify education evaluation in terms of different elements such as assumptions, methodology, and the extent of the involvement of the stakeholders (Owen, 2007).

Despite the comprehensive literature on the subject many practitioners and graduate students were finding themselves confused between a theoretical model and the actual, real day-to-day issues of a programme initiated in a work day situation.

Day (1991) points out that what was really needed was a framework that would make sense of the situation from the viewpoint of the practitioner dealing with the issue. In response to this demand a 'metamodel' of evaluation was developed. The 'meta-model' was designed to consist of five evaluation forms; these forms of evaluation attempt to answer the 'why' question in evaluation.

According to Owen (2007) the concepts of 'form' and 'approach' give an epistemological framework for understanding the breadth of evaluative enquiry. The 'why' question when understanding evaluative enquiry can be classified conceptually into five categories namely: proactive, clarificative, interactive, monitoring and impact evaluation enquiries.

Proactive evaluation is the evaluative enquiry that takes place before a programme is designed. This evaluation form is used in the pre-planning stage to gain input into decisions on how best to develop a programme in advance of the planning stage. Proactive evaluation typically questions whether there is a need for a programme and what is recognised as best practice in this area. It also questions what we know about the problem. In an educational setting, proactive evaluation would include a form of collaborative consultancy to identify specific and unique problems to a particular site. An example of this would be developing a

drug awareness programme for an inner city school where the social problems and school structures will be highly specific to that environment. In this case a generalised 'top-down' approach would not be as successful.

According to Owen (2007) clarificative evaluation concentrates on defining the internal structure and function of an evaluation. Typical issues that a clarificative evaluation might address are the intended outcomes for the programme, how the programme's design would facilitate achievement and what the underlying rationale of the programme would be.

Monitoring evaluation is an appropriate evaluation technique when a programme is well established and ongoing. Typical questions that this type of evaluation might ask are: Is the programme reaching the target population, and is the actual implementation reaching its benchmarks? Impact evaluation can also be described as a type of evaluation that is concerned with the effects of a settled programme. An example of this is the summative evaluation of an adult literacy programme that had been ongoing for a number of years.

For this study the most relevant and applicable model of evaluation has its theoretical roots in interactive evaluation. Owen (2007) describes the interactive model as participatory in nature, with the assumption that those with a direct vested interest in the programme intervention should also control the evaluation of the programme. As highlighted by Owen, approaches which are consistent with this form of evaluation include 'action research' and case-study research which requires extensive involvement in the programme. Also included is 'empowerment evaluation' which involves assisting programme providers and participants in the development and evaluation over their programmes, with the intended goal of giving all stakeholders more control over their own lives and destiny. One does need to caution against the danger of subjectivity and an 'own interest' bias tainting the results.

The next sub-section investigates school approaches to inclusive education policy and the methods and implementation strategies that are utilised in school settings. The inclusive schooling section also evaluates the various critiques that have emerged when schools have attempted to get inclusion to work in real settings.

2.8 Concepts of inclusive schooling

In our pursuit to create inclusive education opportunities for our children we sometimes find ourselves trapped in a situation where we 'include to exclude'. We often embrace the notion of inclusive education in our schools and enthusiastically support the national policy

documents outlining inclusive education practice, only to find that we create an environment of learning that is more polarised than ever by creating a culture of division amongst our learners.

Lund and Norwich (2002) explain the tensions that exist between the individuals and the agencies when they aim to increase participation in mainstream settings as the 'dilemmas of difference'. The 'dilemmas of difference' are described as taking the form that if you include and treat those with differences and disabilities in the same way as the other children then individually relevant learning opportunities could be denied. If, however, you treat learners to special care or in individually relevant ways then some separation from the main group would be required and devaluation would result. These 'dilemmas of difference' come about when we try to match the full range of individual needs of the children into a common system or institutional organisation like a school (Lund & Norwich, 2002).

This set of circumstances is played out in many schools with the best intentions for learner development and integration. The typical example is the school that embraces inclusive education policy by removing children from mainstream activities for periods of the day in order for them to access various support sessions including learning-support therapy, speech and hearing therapy or occupational therapy. Often these therapists are part of the school's permanent staff and are involved in other activities in the school's structures. This is done in an attempt to make the support personnel and their services more accessible and included. In some cases the children are 'streamed' into academic support classes which are smaller in size and, as such, offer more personal attention with more uniquely qualified and experienced teaching personnel.

In these examples the school is being proactive and creative as it tries to address the children's barriers to learning in an attempt to give all learners in the school the means and opportunity to maximise their potential through an accessible and stimulating learning environment. This learning environment might provide access to learning and much needed support but can often fail learners in many other ways with far-reaching consequences. The healthy development of a young person's self-esteem, confidence and positive identity formation are determined to a large degree by how they perceive themselves and how they see themselves perceived by others. This is directly linked to the values and perceptions that create the social constructs of our everyday lives in which our interactions with one another take place. In this case, the institutionalised learning environment of the school results in

these children often feeling different from the other children and often being perceived by others as having limitations or deficits. This set of social constructs and attitudes can have a profound impact on the child's social and cognitive development.

The other extreme is also not ideal. We as educators often find ourselves so sensitive to the protection of our learner's self-esteem and attached stigmatization of being seen to be different that we often remove all available support and limit differentiation of teaching in class. This approach usually has far-reaching negative consequences as we now limit the support and produce learners who have never received sufficient or effective support. They then as a result find future opportunities blocked by an inability to achieve academically, as learning tools and cognitive strategies were never put in place when the opportunities presented themselves.

This raises the issue of an examination of the school as an immovable institution which sets the norms and standards to which learners must conform. Inclusion must go beyond externally organised services as the only means of support which excuses the school from examining its own practices. Our schools need to be far more creative and holistic about their strategies of applying inclusive education policy; they need to address the classroom learning environments that by and large only cater to one type of learning style (successive processor) and develop learning environments that appeal to a variety of processing styles, aptitudes and temperament types.

Slee (2002) describes a struggle between inclusive education practice as a reform ethos and institutional stasis. Strategies are put in place to determine the level of inclusive support that the school can offer. This is inadvertently intended to make sure that the physical and educational capacities of our schools are not compromised. Slee defines this as the fundamental theoretical tension that exists between traditional special education provision and those people who are demanding the institutional changes needed for educational inclusion.

This level of struggle signifies a much deeper and entrenched lens for viewing the world. Disability studies show that a range of ways of thinking exists as to how we often think about disability; these include descriptions of a deficit model which include medical terminology like impairment, disablement and retardation. If we are to see progress we need to see willingness from all people to engage in building knowledge. If we do not hear the voices of

those individuals we are trying to include we end up making decisions which will not be beneficial to developing real creative solutions for inclusion for all (Slee, 2002).

Knight (2000) suggests that inclusive education policy be incorporated into a broader educational theory where the ends and means are inseparable. For Knight inclusive education is a precondition of a democratic education. We need to design the integral functioning of our educational institutions with this theoretical standpoint in mind. From the inception of our designs we need to examine every aspect of the school set-up, from architectural design of the physical learning space to the organization of an accommodating timetable. What Slee (2002) highlights in a theoretical construct must be applied practically. We cannot only make minimal adjustments to existing frameworks where the intention is the minimal adjustment to the concerns of the majority of the learners.

We also need to focus our attention on the methodology of the teaching in the learning environment. Harcombe (2001) discusses two distinct cognitive processing styles, namely successive and simultaneous processing. A child who is a strong successive processor has excellent attention to detail, thrives at the rote learning of details in sequence with little meaning attached, and is often proficient at spelling and grammar when expressing himself through written tasks. The visual methods of teaching in most schools which emphasise retention of sequential knowledge as paramount are very well suited to the learner who is a strong successive processor.

Harcombe (2001) describes how a strong simultaneous processor with weak successive processing ability, on the other hand, would find this learning environment very boring and difficult to achieve in. A simultaneous processor needs an extremely stimulating and varied learning environment as these learners are 'big picture' thinkers who are naturally stimulated by meaning-driven and exploratory learning situations. These learners can integrate many random concepts into new creative ideas. If these children have weak successive processing abilities they tend to present themselves to the teacher as learners who are easily distracted, cannot perform in rote learning activities, have poor spelling skills and who often fail to achieve in testing situations requiring the sequential learning of meaningless facts and figures. The children with poor successive processing abilities are often vulnerable to increased levels of stress and anxiety in the learning environment as a poor 'goodness of fit' relationship exists between the learner and the teaching provided. This increased anxiety inevitably becomes a disadvantage to learners in testing situations. These constant poor

performances often lead to negative report comments, low marks and recommendations that extra help is needed. This only fosters a negative sense of self-worth in the child affected by this extremely negative process.

What other solutions could we explore? We need to develop learning institutions where it is totally accepted on all levels to ask for, or to be provided with, opportunities to request support. The thinking in such an institution must be one that promotes the belief that we all need help with something at some stage in our lives; this could be extra cricket lessons, extra vocal coaching for the choir or learning support lessons. This way of thinking in a school will make the stigma of needing support a non-issue as support becomes part of how we learn. With this in mind it is worth noting that in order for my research to be effective it needs to be implemented in a school that is thinking in this way. The IATLI programme's ultimate success may ultimately depend on the philosophy of educating or way of thinking that exists at the site where it will be implemented.

Walton (2011) takes the discussion further by highlighting the point that beyond just realizing that children's and young people's opinions and thoughts be heard in routine interactions, there is also scope for research 'with', rather than 'on' children. Masson (2004) argues that in the context of schooling the commentary and perspectives of the actual schoolchildren can provide valuable insight. Getting the opinions and suggestions from the schoolchildren can enhance our teaching ability. Fleming (2010) supports this view by describing how participatory research initiatives that included the children had a particularly positive effect on the self-esteem of the children, especially if the research leads to positive change.

Walton (2011) goes on to describe how formal research tools are not the only way that children can be involved in the research process. Clark (2005) refers to the concept of 'everyday listening' as a way in which teachers can engage children in a 'community of enquiry' that supports democratic principles. The classroom environment provides the many opportunities for listening, conversation and questioning that will allow children to be active participants in their own education process. Corbett and Slee (2000) discuss how this approach to research needs to be part of effective inclusive education processes. If we are really to make progress with inclusive education children with disabilities need to have their thoughts and ideas heard and discussed, as many teachers and other learners without disabilities will not recognise obstacles and barriers in the environment. It is difficult to

understand another person's perspective or appreciate their daily challenges if we do not make the effort to engage in their reality from their viewpoint or subjective perspective.

Walton (2011) mentions that little research has been conducted in South Africa with young people with learning disabilities focussing on their views and experiences of inclusion or exclusion in their learning environments. With this research project I intended to use this concept of involving and gaining the perspectives and opinions of all learners with whom I engaged as the lens for the methodology that drove my research design. One of my methods of collecting raw data included the development of a 'researcher's journal' that monitored the learning support sessions with my learners. Part of this process encouraged the learners to comment and provide their opinions on the programme that they had to participate in. As mentioned, this data collection process was an inductive means of enquiry that formed part of the data set analysed for this study.

2.9 Review of studies that support the mediated literacy programme utilised in this research project

Although some of these studies were undertaken in other countries and not South Africa, it was the opinion of the researcher that the findings were still relevant in the South African context. This is because mitigating variables that include socio-economic factors, cultural factors, and in this case international differences all became variables in any case study research that could have both positive and negative impact on the outcomes of a research project. What is of relevance is the content of these studies, the methodologies used, the theories underpinning the research and similarities in the outcomes of the study that made these studies relevant to my research.

Comprehensive research findings in some urban schools in America support the core concepts and practices that underline the literacy programme investigated in this study. Scott and Teale (2009) conducted a research project in inner city schools in America where many of the learners were of Hispanic descent and English was the second language. Their research consisted of a series of structured interviews with three teachers in these urban schools specialising in conducting literacy programmes that targeted learners who could not access education effectively in the classroom where English was the medium of instruction. The aim of the research was to explore the opinions of the educators with regard to what was necessary for effective teaching and learning to happen in their teaching environments.

Scott and Teale (2009) emphasise that the gravest mistake that educators make with regard to unmet needs is the educator's failure to meet the linguistic, ethnic and socio-economic needs of the learner. Helping teachers to 'know their children' is seen as absolutely necessary in order to respond with effective instruction. This necessary element of effective literacy instruction is reflected in my study with regard to the EGO which is an information collecting tool that brings together as much information about an individual learner as possible in order to get to know and understand the needs of the individual. This system combines information from school records, educational testing and from parent and learner interviews to create a 'picture' that depicts socio-economic status, ethnic background, family history and cognitive processing style. In Scott and Teale's research all three of the participants/teachers interviewed mention the absolute necessity to find out as much about the learners as possible in order to tailor their instruction to the meanings and realities of the individuals they teach.

Sampling responses concerning the theoretical framework for literacy teaching conducted by Scott and Teale (2009) in their study reveal many principles that are common to the approach and delivery of the programme that I utilized in my study. Responses include the following: Appreciation for the diverse, literacy-rich environment in the motivation and attitude of learners; employment of a range of language and literacy techniques and learning strategies that are both explicit and systematic to develop both confidence and competence; delivering instruction that is provocative, hands-on and collaborative, enjoyable, creative, relevant and importantly, meaningful. Teachers must employ constructivist principles that allow students to play a role in identifying what they want to learn, how they intend to learn the work and how they intend to apply what they learn to different situations. These instructional principles highlighted from the teacher interviews correspond with the theoretical principles of my literacy programme and its mode of delivery, where mediation has to be relevant to the schematic constructs of the individual learners, and where all instruction is meaning-driven, fun and relevant.

The teachers interviewed in Scott and Teale's (2009) study were also asked to respond to, and comment on effective instructional practice that directly corresponded to their success. A look at the responses see three themes emerge repeatedly that are fundamental for success. (1) All instruction has to be authentic, (2) the teacher has to be very motivational in teaching approach and (3) lessons must be focussed and differentiated. Another thread that comes out of significance is that motivation to learn is very strongly dependent on the authenticity of the material and themes selected. This meaning-driven approach to literacy instruction as

determined by the IALTI programme in my study saw the mediation of Feuerstein's (1980) cognitive learning strategies of meaning, bridging and transcendence of knowledge as cornerstones to the success of the programme.

Teachers in Scott and Teale's (2009) study also comment on the need to challenge learners to be active in their participation, and constantly challenged them to evaluate and improve on their own responses. One teacher interviewed describes what she called the 'vocabulary mingle' where children chant out "tier up" when they feel that they want to take their sentences to the next level. The next level includes enhancing the sentence with descriptive adjectives to improve and focus its meaning. This type of active learning is evident in the IATLI programme, if learners are actively engaged in their own learning they will be able to relate to what they have learned and assimilate it into their known schema. This concept is also apparent in the theory behind the scaffolding techniques presented by Wood, Bruner and Ross (1976) earlier in this chapter.

Another similar study that was referred to is Calhoon's (2005) investigative project that examines the effect of a peer-mediated phonological skill and reading comprehension programme for middle school children with learning disabilities. Calhoon's programme incorporates a technique called the 'Peer Assisted Learning Strategies' or PALS which is a literacy programme that adopts an instructional strategy called 'Class Wide Peer Tutoring'. This strategy is a system that has learners working in mentorship pairs, rather than in groups or in class situations. This technique has been shown to be very effective in mediating academic and social skills to high school learners (Calhoon & Fuchs, 2003).

The investigation of the effect of the PALS reading programme and the focus and subsequent examination of the mediation of the programme is significant notably for its similarities to my research project. During the PALS, the learners participate in three essential reading comprehension activities while reading aloud from a narrative text: Partner reading, paragraph shrinking and prediction relay. All three activities are designed to allow for systematic practice in summarising, reviewing and sequencing, stating main ideas, and predicating story outcomes (Fuchs, L, Fuchs, D, Karns & Phillips, 1993). The IATLI by comparison utilises the simultaneous integration of 'top-down' and 'bottom-up' teaching methods to mediate reading skills, phonetics, word order, tracking and meaning-based creative writing strategies.

Calhoon (2005) conducted her study with 29 participants (23 sixth, 5 seventh and 1 eighth grader) from four special educational, self-contained language arts classrooms. All participants met the federal state eligibility requirements for having a reading disability. All participants were reading at a level at least three years below their grade placement level. Calhoon's project utilized a quantitative method of data analysis that required pre- and post-testing of the participants who entered the mediation programme. The formal pre- and post-testing scheme used to gather data was the *Woodcock Johnson Test of Achievement-III (WJ-III)*. The tests administered were to test ability in 'letter word' identification, word attack, reading fluency, and passage comprehension. My study used the SDRT scheme that tested reading comprehension, phonetic analysis, and auditory vocabulary, as well as informal reading and writing analysis. Both testing schemes provide the researcher with standardized baseline scores that are quantifiable and can be compared to repeated post-testing scores.

The programme utilised the peer-mediated procedures of Fuchs et al, (1993). Learners work in pairs and follow the following features: Mediated verbal rehearsal, step-by-step positive feedback, and frequent verbal and written interaction between the mentor and the mentee. By contrast my programme was mentored by a remedial therapist who placed a geat emphasis on the mediation of effective learning strategies as well as the literacy components as determined by the EGO analysis procedure.

Univatiate analysis of variance conducted on the post-test scores for the WJ-III scores across the four subtests (word-identification, word attack, passage comprehension, and reading comprehension) show statistically significant differences when compared to a control group who did not receive any mediation (Calhoon, 2005).

Although there were differences between Calhoon's (2005) study in New Mexico and this project conducted in an independent school in Johannesburg, some of which included sample sizes, types of selected schools and the design of the programmes, the New Mexico study did demonstrate a situation where literacy skills were successfully mediated to learners in situations where ecosystemic factors were considered, besides the limitations mentioned.

2.10 A review of studies that show the positive relationship between self-esteem, self-efficacy and the academic development of learners with learning disabilities

In Phan's (2010) study into the academic performance and various cognitive processes of learning: 'an integrated framework and empirical analysis' he investigated the hypothesised

relationships between self-esteem and self-efficacy and the positive effects that these have on deep cognitive processing and learning in students. Samuels (1977) describes in her book *Enhancing Self-Concept in Early Childhood* that numerous studies have shown that poor self-esteem or low self-worth correlates with low academic achievement. Similarly Hamacheck (1978) notes that some learners with initially high self-esteem fail to achieve at school because of cognitive immaturity and consequently develop a low self-esteem. He also proposes that the relationship between self-esteem and academic achievement is a two way relationship, where children crippled with feelings of inadequacy, even if well prepared cognitively are unable to pay sufficient attention to the tasks at school and could spiral into a situation where they develop low self-esteem.

Bandura (1997) explains how self-efficacy is central to social cognitive theory and can be defined as one's own belief in one's capability to successfully execute courses of action and to govern one's own choices, behaviours and aspirations and a person's ability to self-motivate and mobilise and maintain effort in a given situation. In turn Phan (2010) describes self-esteem as a construct that acts as a powerful initiator of human behaviour and that research has proven globally that self-esteem is related positively to academic performance. Campbell and Lavallee (1993) argue how self-esteem has been shown to have a pervasive and powerful impact on human emotion, cognition, behaviour and motivation. High self-esteem is also seen as being important for not only academic achievement, but also for a learner's long term general well-being and emotional development (Ntshangase, Mdikana, & Cronk, 2008).

Elliott and Harackiewicz (1996) explain how 'achievement goal theory' has emerged as a dominant theoretical framework when studying motivation and competence in academic performance in learners. This framework can be described by extrapolating and explaining their trichotomous model that identifies three types of goals (cognitive processes) that a student applies to learning.

Phan (2010) explains how two of these cognitive goal orientations have a positive effect on or relationship to academic performance. The first type; 'mastery goals', is when students are intrinsically motivated to improve their competence even in when faced with very challenging obstacles. The second type; 'performance approach goals', refers to the student who is confident in his ability and strives to constantly demonstrate normatively high ability. The third type that Phan identifies is referred to as 'achievement avoidance goals', which in

contrast are related negatively to intrinsic motivation, unwillingness in the learner to try to get academic support, poor academic performance and the use of surface study processing. Researchers have recently isolated a fourth goal that is linked to poor performance, 'work-avoidance goals', which are characterised by learners completing tasks with the minimum amount of effort and time, and at the same time avoiding challenging tasks.

In Phan's (2010) study he investigates the relationship between self-efficacy as a predictor of positive achievement goals, study strategies and effort. The potency of self-efficacy has been tested in a number of research studies including Phan's study and it reveals and concludes that positive self-efficacy beliefs embedded in a person's schema plays a pivotal role in defining a learner's cognitive engagement and goal orientation. People with high self-efficacy goals and high self-esteem tend to adopt mastery and performance approach goals whereas learners with low perceived competence tend to adopt performance-avoidance goals (Bandura, 1997; Elliott & Harackiewicz, 1996).

Theorization also suggests that high self-efficacy has a proximal influence on cognitive engagement. Learners who have a high sense of perceived competence are more inclined to pursue challenging personal goals, spend more time and effort on tasks and persist in the face of adversities and challenges. This suggests that high self-efficacy serves as an impetus for deep cognitive learning. Phan's (2010) findings from his study conclude (after quantitative, qualitative and triangulated research methods were applied to a cohort of two hundred students) that the important implication of the self-esteem and deep-processing relation is that a learner's self-worth may instil the thinking of optimism, interest and mastery of learning that in turn requires deep engagement with tasks that are attempted.

Empirical findings from Phan's (2010) study indicate that a learner who develops performance approach goals linked to improved self-efficacy and self-esteem see the necessity to expend a certain amount of effort and academic persistence in their academic learning. A learner cannot simply strive to achieve academic success and ignore the need for time management and effort. These findings of Phan support Feuerstein's (1980) and Skuy's (1996) MLE cognitive learning tools that include goal planning, challenge, competence and self-change, which when internalized by a learner will promote self-efficacy.

Skuy and Solomon (1980) conducted a study that evaluated the effectiveness of a paraprofessional mediated programme designed for children with learning problems at a university learning support centre. The programme was facilitated by university students and

interested parents in an attempt to improve the scholastic performance and self-concept among a randomly selected group of 36 boys and girls. Skuy and Solomon's programme, in comparison to my study, was designed to provide a six month intervention of around 3 hours a week of one-on-one mediated, therapeutic interactions between the paraprofessional and the learner. The main focus of the programme was to improve the academic performance of the experimental group through positive learning experiences, (the control group was not exposed to the designed programme).

Skuy and Solomon describe self-concept enhancement as particularly important for learners who present with learning problems. Numerous experimental programmes had been created to enhance the self-esteem and self-concept of learners, with many of them yielding positive results. Skuy and Solomon provide as an example Pine's (1976) study where she concludes that activity-based support programmes in informal educational settings enhance the self-concept of the recipients and produced reading scores equal to and in some cases higher than children in traditional class settings.

In Skuy and Solomon's (1980) study the parents and university students mediate a set of specifically designed strategies to the experimental group of learners aimed at improving their satisfaction with self (self-concept). Some of the activities incorporated into the sessions included the 'self-box', sculpting, drawing, finger painting and problem solving. Results of the comparison between pre- and post-test scores analyzed reveal mixed results. On the Draw-a-Person Self Concept Scale (DAPSC) that provides an indicator of self-esteem through evaluation of the learners' drawings significant improvements in the experimental group were recorded. In contrast none of the children in either the control group or the experimental group showed any improvement in the Wide Range Achievement Test (WRAT) that measured scholastic improvements in reading or writing tasks. However Skuy and Solomon notes, as I do in my study, that other factors could be responsible for this lack of progress, those being that the self-concept enhancing tasks that were mediated were not specifically school related activities.

Skuy and Solomon's (1980) study was worth discussing as I could draw many parallels and similarities from this research project to my study. Firstly they both employed one-on-one mediated intervention strategies. Secondly they both conducted their research study and data capture over a six month period. Thirdly they both utilized the comparison and evaluation of pre- and post-test analysis to draw conclusions about their studies. Finally what was

significant was that theirs was a South African study which meant that the findings were less disconnected and more comparable than foreign studies which would mean more significant correlations could be made between theirs and my conclusions.

Similar results are shown in a comparative study by Ntshangase, Mdikana, and Cronk (2008) whose research titled: *a Comparative study of the self-esteem of adolescent boys with and without disabilities in an inclusive school.*

Ntshangase, Mdikana, and Cronk's (2008) study compared the self-esteem of 29 adolescent boys in an independent school in Johannesburg. Fourteen of these boys had no history or previous diagnosis of learning disabilities and fifteen boys were diagnosed with learning disabilities and they had attended remedial schools while in primary school. It is notable that this second cohort of learners reflects the case study sample that was used in this research project that explored the critical success factors of the mediated IATLI support project.

Findings from this research indicate that there are potential benefits of inclusive education practices on the self-esteem of included learners with learning disabilities in mainstream schools, as there were no statistically significant differences between the self-esteem of either cohort of learners revealed in the T-test analysis. The research also indicated that learners with learning disabilities who were mainstreamed may also benefit from self-esteem interventions (Ntshangase, Mdikana, & Cronk, 2008). This finding was also seen as very significant for my study, as the central role of the mediated, one-on-one therapy sessions aimed to develop a 'goodness of fit' relationship between the learner and the mediator with a central aim being the development of self-esteem.

These studies were relevant to my study of the IATLI mediation to the eight grade eight learners who were engaged in the programme. One of the main aims of the mediated relationships that the IATLI programme initiated was the improvement of the learner participants' self-efficacy and self-esteem. The IATLI programme aimed to achieve this though the reciprocal interaction between the one-on-one relationship development and the development of metacognitive learning skills as described by Skuy (1996) and improved literacy ability.

2.10.1 Comparative Support Programme

Leyden (2011) discusses how the role of literacy development and language for learning is core across the entire school curriculum. Children with speech, language, reading and

communication needs are at risk of underachieving academically. It is further argued that speaking, reading and listening occur throughout all academic curricula, and that these skills or abilities have a direct relationship with a learner's emotional and social development.

Leyden's (2011) study addresses the need for a programme that focused on a whole school approach (WSA) to the development of speech language and communication skills for all learners, and not just for those with special educational needs. Leyden (2011) hypothesises that a whole school approach would help to remove barriers to effective provision for children with speech, language and communication needs. The WSA is a programme designed to enhance the inclusive education ability of schools to make the learning environment more accessible to all learners.

In her study Leyden (2011) uses an accredited literacy programme called the *Primary Talk Programme* (I CAN, 2007). This programme aims to provide training for all staff on the school premises to enhance the staff's ability to provide a communication-rich environment for all children, and secondly to increase knowledge of the development of speech, language and communication. The programme is designed to equip the teaching staff with skills that will help them to identify children with barriers to learning, and simultaneously provide targeted interventions in class and then refer cases to learning support professionals when necessary.

Leyden's (2011) research looks at implementing the *Primary Talk* (I CAN, 2007) programme with both teaching and non-teaching staff to ensure a level of support to the learners during directed and non-directed times in the school day. The *Primary Talk* (I CAN, 2007) programme was piloted in 30 schools in Northern England. Leyden looks at a small sample of the study and after analyzing data from semi-structured interviews and structured testing of participants came to the following conclusions: Firstly, the WSA raises the profile of language learning and highlights the different types of barriers to learning that exist in a sample population of school children. Secondly, reporting and communication between staff members improve. Thirdly, all schools involved note that the *Primary Talk* (I CAN, 2007) programme highlight gaps in their internal systems for facilitating and monitoring all their learners' academic progress. One limitation of the *Primary Talk* (I CAN, 2007) programme that comes up in the analysis of the data is that not enough 'technical knowledge' is available in schools describing how to go about identifying learners with special educational needs.

In four schools that participated in the programme it is believed that the WSA changed teaching practice, and that the language learning impact was moderate to high. Schools with more challenges and problems find that the *Primary Talk* (I CAN, 2007) initiative is of minimal benefit to the learners and the school as a whole, this is attributed to the influence of other socio-economic factors that were core areas of the schools focus. Final conclusions from this segment of the study indicate that there has to be a shared belief that language, speech and communication are core necessities that are fundamental to the curriculum. The backing and support of the senior staff and learning support therapists in individual school settings are also essential for success.

Parallels between Leyden's (2011) study and my research into the mediation of the IATLI needed to be examined to explain the relevance of this study to my research project. Both studies were implementing a programme into a school setting in order to investigate whether their respective intervention could enable enhanced inclusive education at a particular site, and as a result make education more accessible to all learners, especially those with barriers to learning. The underlying difference between the studies is the focus of the interventions: My study focuses on the mediation of the IATLI literacy programme to the individual learners as the primary goal, and the support of staff and the larger community as a secondary goal. Whereas, Leyden's (2011) study focuses on staff training and development in order to redirect the paradigm of the approach to the delivery of the curriculum by teachers.

As is evident with the mediated IATLI intervention the limitations of Leyden's (2011) research had an impact on the findings. The conclusions indicate strongly that the effectiveness of the programme varies from school to school dependent on the attitudes of the senior staff and the central beliefs of the staff in general to Whole Language Learning. The socio-economic factors and internal challenges that exist in some schools can limit the time available to staff and management necessary to make the IATLI and the *Primary Talk* (I CAN, 2007) successful initiatives.

2.10.2 Comparison of an early literacy programme conducted in a Hispanic community in Los Angeles to the IATLI programme

An examination of a four-year long longitudinal examination of an early literacy programme that was conducted in an economically deprived environment in downtown Los Angeles reveals findings that are relevant to this research study. The aim of Yaden's (2000) Early Literacy Intervention was to provide a variety of opportunities for Latino children in develop

their literacy skills. Yaden took a Vygotskian approach style perspective that basically hypothesised that unless studies were conducted that examined the interconnections and interactions that take place between the home and the school, and the broader environment literacy skill development would be limited.

Losey (1995) singles out research that highlighted classroom environments and programmes that provide lessons and interventions structured around collaborative learning and students' interests. Yaden's (2000) study incorporated both collaborative initiatives that are authentic and personal for the target audience, which takes into consideration both the areas of literacy weakness and the reality and interests of the participants. This is in line with the desired outcomes of this IATLI intervention where the focus and emphasis on the EGO analysis provides for the consideration of the personal needs of each participant. Similarly the IATLI provides a literacy programme that sees the development of literacy ability and competence being associated with a meaning-driven approach, as well as a cognitive structural approach that investigates the 'bottom-up' building blocks of language development.

Yaden's (2000) study examines a decentralised system where access to literacy enrichment and development is conducted in classrooms, in the library through reading workshops, and an involvement with parents to bring literacy and a joy of reading into their homes. Although the mediation of the IATLI is conducted thorough therapy sessions conducted with individuals or very small groups, the core concepts of cognitive learning through a meaning- and theme-driven approach are similar.

The results of Yaden's (2000) intervention indicates that of the 55 children exposed to the programme in their pre-school year there is a statistically significant average gain of 4.5 points on the 'Spanish Concepts About Print Test'. Yaden describes how this gain reflects an increased knowledge in the cognitive schema of learners regarding the directionality of print, awareness of the printed text, awareness of writing that you read rather than writing as a series of pictures, and the identification of lower case and upper case letters, and the identification of some punctuation conventions.

2.10.3 Discussion of a comparative, constructivist literacy programme implemented in elementary schools in Hawaii

Au and Carroll's (1997) study encompasses the implementation of a literacy programme called the Kamehameha Elementary Education Programme (KEEP) which is a research and

development programme aimed at improving the literacy achievement of native elementary students. The KEEP programme is developed in accordance with the constructivist approach in which the learner is regarded as actively constructing his own knowledge as opposed to teaching practices which are passive in nature, where the learner is taught though a teacher centred approach and passively absorbs the information presented.

Au and Carroll (1997) refer to the numerous studies and accounts, many written by teachers which provide enthusiastic descriptions of the success of constructivist approaches in classrooms, including evidence from case studies pointing to learning gains from individual students. As the popularity of constructivist approaches grows, there is a need to continue to formally research what happens when these approaches are conducted in real settings and on a large scale.

The KEEP programme discussed here has similar features to the IALTI programme that I implement in my study. Firstly, they are both grounded in the constructivist theories developed by Vygotsky. Secondly, they both employ a 'whole literacy approach'. The KEEP programme identified six aspects of literacy that are included in the approach, there were: (1) ownership of reading and writing, (2) reading comprehension, (3) the writing process, (4) language and vocabulary knowledge, (5) word reading strategies and spelling and (6) vocabulary reading.

The methods used to conduct this study and the ensuing results are seen as relevant to my study for two reasons: Firstly, both studies are conducted in authentic settings in schools which have to integrate the respective programmes into their busy and tight school schedules. Secondly, both programmes aim to improve the literacy ability/skills of learners through a constructivist based programme, presented by a mediator/teacher trained in the implementation methods and theoretical outcomes of the respective model.

Au and Carroll (1997) use an action research approach for their research project. The participants include thirteen teachers from seven schools who participate in the implementation of the KEEP project in the Demonstration Classroom Project in the academic year one. Nine of these teachers continued with the programme into year two as 'veterans' of the programme, and 20 new teachers joined the programme. Class sizes range from 16 to 29 learners who interact with the teachers and are assessed according to a series of 'benchmarks' that have to be achieved. These benchmarks include both literacy outcomes for the learners and task implementation outcomes for the teachers. Some of these benchmarks for the

learners include enjoying writing, showing confidence in their own work, having a sense of audience, planning, revising and drafting. Teacher benchmarks include; organizing writing folders, scheduling of time, organizing locations for writing activities and setting up rules and procedures.

Success is determined when the teacher and his/her pupils have reached all of the predetermined benchmarks. Graphs are used in the results section to plot the time over years one and two that it took for all the benchmarks to be achieved. Results indicate that by the end of the KEEP programmes implementation all the benchmark scores are achieved. The noticeable difference is observed in the comparison of the length of time in months that new teachers took to achieve benchmarks as opposed to the veteran teachers. Across all the individual case study comparisons the veteran teachers who had an in-depth knowledge of the programme and experience in implementing the activities, achieve the benchmarks more quickly than inexperienced teachers.

Although the results from Au and Carroll's (1997) study produce positive results the programme was deemed to be exhaustive and demanding to execute effectively. The data also clearly indicates that the more experienced and equipped the teacher the more effective they are at delivering the constructivist KEEP programme. This supports Hargreaves and Fullan (1992) who discuss the need for effective teachers to have a 'full understanding' of all associated outcomes that they need to meet within a specific programmes design. Au and Carroll explain how their results indicate strongly the need for teachers to have ownership and control over the process in order to achieve effective and speedy results.

These findings are relevant to my study for the following reasons: Firstly, although there are differences with regard to the application and the methodology of the KEEP project and the IATLI they are both based on constructivist theories. Secondly, and most importantly the KEEP study highlights the important influence of the teacher/mediator on the relative success or failure of a mediated programme. These findings infer that my study needs to take into account the influence that the mediator, his experience, and intrinsic knowledge of the IATLI programme had on the resultant outcomes. The results of this study also have far reaching implications for further research studies of a similar type, as it is apparent that the level of training and experience that the mediator/teacher has correlates directly to the results that are produced at the conclusion of the study. This discussion highlights the need for effective training of mediators and the investigation of teacher skills when conducting further studies.

2.11 Rival hypothesis and the limitation of their impact on my study

Johnson, Aragon, Shaik, and Palma-Rivas (2000) studied a Human Development Graduate Course that was offered to learners both as an online mediated course attended on campus, and the same course offered as a correspondence course with no mediator/lecturer assistance. Their findings conclude that the students who attended the course on campus had more positive opinions about the lecturer and the overall experience, even though both sets of students found the course formats to be the same and equally effective in providing the desired result of curriculum delivery.

Although this study concludes that online correspondence study programmes where the mediator is absent are just as successful as traditional face-to-face teaching or mediation, it is worth mentioning that this study used a small sample size which limits the validity of the findings to some degree. Of more relevance is the fact that this study is done in a university setting and no mention is made of the learning ability of the participants or their cognitive functioning. One can only assume that as they were older and being already at university, their cognitive learning skills were in place or at least more developed. If they have developed the learning tools of self-monitoring, transcendence and bridging they would have been better equipped to handle a learning environment where a mediated learning experience is absent.

Kirtman (2009) designed a comparative study that examined the learning outcomes of three online courses compared to three traditional courses offered for the same Masters in Education course. The 'online' courses rely mainly on discussion groups and the submission of assignments and tasks via email as the method of interaction, while the traditional course is presented by a lecturer who interacted directly with the students. The teachers did not change for the duration of the study, so the students could form professional working relationships with them. The participants are selected from a group that reflects the demographics of the American South West, and were all elementary school teachers.

Kirtman (2009) found her results to be mixed. From the mini literature review activities and assignments no significant variation from the standard deviation was evident between the two groups. The traditionally taught students scored higher results on a mid-term examination when compared to the grades of the online learners. Survey results, however, were very positive with regards to the online course.

This study has limitations that compromise the validity of the study and thus negate the study as a direct threat to the advantages and necessity of mediated instruction which my study sets out to investigate. The researcher refers to her participant sample as being self-selected, which creates an immediate bias which interferes with the findings. It could be argued that my case study was also self-selected, however there was a subtle difference: I did not approach my participants; they were referred to me and approached me whereupon I conducted the EGO analysis to ascertain their suitability to possibly benefit from the mediated IATLI experience. It was also noted that the online sample group were better visual learners prior to the study taking place, which informs us that online instruction suits their particular processing style, and cognitive functioning strengths. My research deals specifically with students who have been identified with barriers to learning, particularly literacy acquisition issues, and who are not coping with mainstream instruction. It therefore cannot be presumed on the basis of this study that online, or self-study, would be beneficial to the students who have participated in my programme.

2.11.1 A critique of a 'work-based learning' model, with the intention of positioning and validating the need for a mediated learning experience for learners

Raelin (1997) developed and researched the effectiveness of a comprehensive model for work-based learning where learners or workers come together and are involved in a community of practice where they learn to construct shared understanding amidst confusing information. The model is based on the interactions of learners in a collaborative environment with the absence of a facilitator or mediator.

This study is in contrast to my research project as successful mediation of the IATLI programme requires the input of a learning support specialist, or someone who has been trained in mediation techniques. Raelin's (1997) study did not involve the input from a trained mediator, but relied more on experiential learning through shared experience.

The Raelin model is based on a series of experiential learning encounters. One of these is referred to as the practice of 'action science' and it speaks of 'reflection in action' which attempts to discover how or what a participant did, or did not contribute to an expected or unexpected outcome. The model also refers to the concept of 'action learning' where real time experiences or problems in the work setting become the primary subject matter (Raelin, 1997).

Research on the work-based learning model has been done with adults having shared goals in the workplace environment and has been proven to be successful in limited settings. Many of the core learning practices of this model can be linked to the cognitive learning skills necessary for effective learning by individuals. The findings, however, have not been replicated in other learning environments. The school setting is markedly different from a workplace setting as learning is more individualistic, and all learners are not working towards one shared goal. Although cooperation and collaboration in the classroom learning environment has been proven to be beneficial to learning, it might not be as effective as highlighted in Raelin's workplace model.

One can also assume that the adult workers have been employed on the grounds of certain skills or level of cognitive ability so baseline skills should be in place which makes cooperation easier. Although Raelin's research showed the model to be effective in work place settings, research shows learners in a school setting cannot learn optimally through collaboration alone without some form of mediation, as many individuals do not have the necessary learning skills in place for optimum internalization of concepts and meaning. Raelin's research also has a narrow focus and was very selective in the choice of case-study location. This critique of studies that did not advocate mediation to enhance learning is necessary to my research in order that a balanced argument be put forward rather than one that does not recognise other studies and their contributions to education practice.

2.12 Conclusion

This chapter investigated the theoretical underpinnings of the IATLI programme, and investigated the main seminal literature that determined the programme's structure and outcomes. The literature review also investigated similar studies that support mediated literary programmes like the IATLI and the cognitive psychology behind language learning. It was also necessary to examine intervention studies that were in conflict with my study, and to discuss their relevance in relation to my mediated study that considered both literacy skill development and cognitive learning tool development. Another aspect that was considered in this literature review was the type of programme evaluation theory that underpins the methodology that the researcher applied in this study. Chapter three describes the methodology and research design that was used to conduct the study. Chapter three further unpacks the theories behind the methods of data analysis and triangulation that I employed while conducting this research.

CHAPTER THREE

3. METHODOLOGY AND RESEARCH DESIGN

3.1 Introduction

Chapter three describes and explores the methodologies that were used to conduct this study. The discussions outlined in the literature review that considered the nature of a naturalistic enquiry, and subjective nature of the study as prescribed by a participatory action research, direct the methodology and research design discussed in this section. This research project was conducted as a mixed research design and utilised triangulation methods to bring together the various sources of collected data. The identified problem was the inability of certain learners particularly those who came from a special needs background with barriers to learning associated with literacy and cognitive processing concerns, to succeed academically in a mainstream schooling environment. This study evaluated the critical success factors of the Integrated Approach to Literacy Instruction (IATLI) programme intervention pertinent to this particular site and it was necessary to collect data from all relevant stakeholders in order to gain a set of data that was rich and varied so that reliable conclusions could be described. This chapter describes how most of the data collected for this study was of a qualitative nature; however some of the data, notably the educational test scores, were subjected to statistical testing to provide some quantifiable evidence. As the sample size was small (eight participants) the quantitative results were not representative of the entire population of learners. The data did however form a valuable resource when supporting or contradicting evidence in the discussions provided in Chapter four.

Hypothesis: Learning strategies can be mediated to individual learners participating on the IATLI support programme that functions as part of a mainstream school's academic structure.

In developing the research design for this study it was essential to operate within a theoretical and practical framework. Terre Blanche and Durrheim (2002) describe the four dimensions that constitute a research design: Firstly, the theoretical paradigm informing the research must be considered. Secondly, the purpose of the research must be taken into account. Thirdly, the context or situation where the research is to be conducted must be taken into consideration, and finally, the research techniques and data collection methods need to be defined.

My research project needed to operate within a clear paradigm of thought which was described as an all-encompassing set of systems existing around three dimensions, namely the ontology, epistemology and the methodology of the process. Ontology referred to the nature of the reality to be studied; the epistemology referred to the relationship between the researcher and what could be discovered and the methodology described how the researcher would practically study what was believed to be known (Terre Blanche & Durrheim, 2002).

My research project fitted into the paradigm of the interpretive approach, which aimed to explain the subjective reasons and meanings that lie behind social action. The interpretive approach defined the ontology as examining the internal reality of subjective experiences. As I was the researcher conducting and delivering the programme to the learners, the interactive experience was largely subjective in nature. From an epistemological standpoint the research was empathetic to the process. As I was dealing with real life situations and with real people I could not be detached and clinically objective at all times. As far as the methodology was concerned, my research relied on the subjective relationship between the researcher and the subject. My methods of interviewing participants and participant observation relied on this interactional subjective relationship (Terre Blanche & Durrheim, 2002). In this study I was mediating the IATLI model and the selected learners were the subjects or participants. The interpretive paradigm also directed the research methodology which was interactional in nature and mostly qualitative in design.

The context of my research design was a site-based study that was conducted in an independent secondary school in Johannesburg. The purpose of the research study was to ask questions of the whole process that would inform us and provide answers that would form the basis of discussion and ultimately reliable conclusions. These research questions became the objects that were then known as the units of analysis. In this study I decided to focus on the critical success factors of the mediated IATLI programme through evidence of the acquisition of cognitive learning and literacy skills and self-esteem development by the eight individual learners participating on the programme.

It was important to pursue coherence in the research design where the four different aspects were outlined, namely paradigm, purpose, context and the research techniques fitting together with an internal logic.

The research design had to consider validity and therefore needed to identify rival hypotheses and eliminate their impact, these were considered in the literature review. Validity threats

were also considered as they constituted variables and extenuating circumstances that could have confounded the interpretation of the results (Terre Blanche & Durrheim, 2002).

3.2 Case study research

By design this study was a case-study project. McMillan and Schumacher (2010) describe a case-study as a bounded system, or a case, over time employing multiple sources of data found in a setting. This study certainly could be described as a bounded system, as the programme was positioned in both space, time and further limited by the number of stakeholders participating. The case-study was further defined as a within-site study as it focussed on one entity at one site, namely the IATLI programme and the evaluation of its mediation to the eight selected grade eight learners.

Cohen and Manion (1989) explore the case-study as a set of observations that take place over a period of time. This means that the researcher can develop a more intimate and informal relationship with those he is observing. In this study the researcher was actively involved as both an active participant and a reflective observer. The case-study can be further defined as one that examines or studies phenomena in real life contexts. In this circumstance the researcher was not studying an artificial set of circumstances, as the mediated programme was authentic and part of the school's inclusion process dealing with people in real educational settings. The researcher's interaction in this programme made it an evaluative case-study as the goal was to make an informed judgement designed to elicit the overall critical success factors of the mediated programme. Basically, the evaluative case study aimed to measure the ability of the programme to meet its pre-determined goals. Yin (2003) further explains how case study investigations have a distinctive role to play in evaluative research. Firstly they describe an intervention, an example being my mediated IATLI programme, in the 'real life' context in which it occurred. Secondly the case study intervention can be effective when it is used to explore those interventions where no single set of outcomes is obvious from the outset of project.

Each of the eight learner participants was observed as an individual case-study operating within the greater research design. This was necessary as each learner came onto the programme with unique ecosystemic circumstances and each intervention was tailored to these EGO considerations.

It needs to be noted for the purpose of validity that participant case study research is not without its critics. Cohen and Manion (1989) refer to the fact that they are often described as subjective, biased and impressionistic and lack the quantifiable features that are the hallmark of survey research and experimentation. Yin (2003) also comments on a criticism of case-study research where some researchers comment on how they provide little basis for scientific generalization, as how can you generalize from a single study?

3.3 This study operating as an action research

This study was also based on the concept of action research as described by Cohen and Manion (1989). Action research is explained as a small scale intervention into the functioning of the real world and a close examination of the effects of such an intervention. Action research is also considered as participatory in nature where the team members themselves take part directly or indirectly in the actual research process. In this study the researcher was participating in the delivery of the IATLI programme as the mediator.

Cohen and Manion (1989) describe action research as situational in nature as it is concerned with diagnosing a problem in a specific context and then attempting to solve it in that context. Action research is further described as self-evaluative in design as you, as the participatory researcher, are continuously evaluating modifications to the programme as its implementation unfolds, with the ultimate objective of improving practice in some way. Action research's evaluative frame of reference is basically to add to the researcher's or practitioner's functional knowledge of a situation. This was relevant to this research project as I was attempting to determine the functional knowledge of the IATLI programme as observed in real life circumstances.

Cohen and Manion (1989) further discuss action research as essentially an on-the-spot procedure of research design that deals with a concrete problem located in a real, immediate situation. This required that the step-by-step process of the delivery of the IATLI programme to the participant learners was constantly monitored at pre-determined periods over the duration of the study. The evaluation also consisted of a variety of mechanisms that were used to collect qualitative data, including Likert-Type surveys, the researcher's journal and semi-structured interviews to the teachers directly involved in the process. The ensuing feedback from this process translated into modifications, directional changes and re-definitions as were required. Unlike other methods of research, in the action research design no attempt was made to isolate one particular factor in the data and then study it in isolation.

This framework fitted in with the holistic ecosystemic nature of enquiry that defined the delivery of the IATLI to each particular child.

Action research needs to operate in an environment where organisational aspects have been considered. All the relevant stakeholders need to be in agreement and in support of the intervention before it can be successfully implemented. This model of research design fits with my research study as the implementation of the programme was not an isolated study. It involved input from the learner participants, teachers, parents and structured interview commentary with teachers on progress and constant feedback on issues that arose. For this reason it was important that the teachers and parents were implicitly involved and were subsequently aware of the details of the research process at all times.

Cohen and Manion (1989) examine eight stages that are considered necessary procedures to follow in order that true action research can take place. Stage one involves identification and evaluation of the problem perceived as critical. Stage two includes preliminary discussions with interested parties, i.e. parents, grade tutors and teachers. Stage three involves the decision to implement a particular programme that might be suitable; in this case the IATLI programme to address certain barriers to effective learning. Stage four involves a possible re-evaluation of the initial statement in stage one. Stage five deals with the selection of research procedures like sampling, administration, methods of delivering the programme and possibly the allocation of resources. Stage six is involved with the choice of the evaluation tools to be used, taking into account the need for the research to be continuous. Stage seven is concerned with the implementation of the programme, and focuses on the actual collection of data and the keeping of records. The eighth stage is involved with the interpretation of the data.

3.4 Methodology

In order to gather sufficient data to determine the effectiveness of the mediation of the IATLI a variety of types of data and data collection techniques needed to be used. With this in mind a variety of sources of data were used to analyse and conclude whether the mediation of the IATLI programme to the participant learners was successful within this bounded system: i.e. an evaluation of the critical success factors outlined in the research questions. The data to be analyzed came from a variety of sources that were assessed using triangulation techniques. As this research project was an investigation into the effectiveness of a programme‘s implementation over a period of time, it was seen as necessary to collect pre- and post-

intervention data, as well as forms of data that documented the process of the programmes implementation and gathered opinions from relevant stakeholders. For this reason I had chosen a mixed method research design so that I could gather data from a variety of sources utilizing different techniques. This mixed method research design gave me the advantage of finding trends and patterns from multiple sources, which in turn allowed my conclusions to be more credible and valid.

Standardised pre-testing using appropriate educational testing batteries took place with the participants as part of the ecosystemic analysis to provide me with baseline scores of literacy ability. At the conclusion of the intervention process (mediated IATLI) the tests were re-administered to provide me with quantitative data to evaluate improvements in various categories of literacy skill and cognitive processing. (The tests were designed to take into account maturation and natural school progression in their scoring).

The standardised educational testing battery that I used for the pre- and post-IATLI programme test evaluation of the eight learner participants was called the Stanford Diagnostic Reading Test SDRT. The primary purpose of these the testing process was to identify the cognitive literacy strengths and weaknesses of each of the eight learners. Sub-test one, the 'Auditory Vocabulary Test', provided information about a learner's language competence and vocabulary without requiring them to read sentences. The 'Phonetics Analysis Test' measured the learner's ability to interpret and recognise common and variant sounds in written words. The third test administered was the 'Reading Comprehension Test'. This test evaluated the ability to read and interpret both literal and inferential comprehension measured by the means of short paragraphs. I also included informal '20 Minute Reading and Writing Assessments' into the test group as a means of gaining a more in-depth understanding of the literary ability, processing strengths and weaknesses and cognitive learning skills of the learners assessed. The results of the informal 20 Minute Reading and Writing Assessments could not be used quantitatively but were used as part of the triangulation of data and in analytical and concluding discussions to support or refute other data sets obtained.

At the conclusion of the research project the twelve teachers who were directly involved in the education of the learners on my mediated literacy programme voluntarily participated in a semi-structured interview process that evaluated their opinions of the programme and its effect on literacy skill acquisition and cognitive learning skill development. (See appendix 9).

A Likert-Type questionnaire was initially circulated to all teachers at the research site who were involved with the learners on the programme both directly or indirectly, in order to gain their opinions regarding the mediated IATLI support programme that was part of the inclusive education initiative and inclusive education practice in general. This data gave me another resource which was utilized in the evaluation process when triangulating my data.

The final data source that was gathered and utilized in the triangulation process took the form of a researcher's journal (reflexive researcher's diary) which I kept to record the learner commentary and activities as the intervention unfolded. A large focus of the journal took into account the opinions and feelings of the children who were actually participating in the programme. Aspects of correspondence that took place in the general day-to-day interactions between teachers, parents, learners and the researcher as the facilitator had been incorporated into the researcher's journal. The information in this journal was used as a comparative data source to corroborate the evidence collected through pre- and post-testing of the learners, and the semi-structured interviews. This data was evaluated inductively and, due to the subjective nature of this information, the results/comments were compared to information gathered from other data sources and these corroborations were discussed in chapters 4 and 5.

Table 1: Outline of data gathering procedures

Phase of programme	**Component**	**Method of data collection**
1	Situational analysis: Identify the problem Selection of learners for the programme Implementation of the EGO. This involved parent interviews (prospective participating learners), evaluation of background history of the learners, examination of any previous psychological and educational testing done at primary school, (remedial primary school) and teacher reports.	• Structured educator questionnaires (Likert-Type) administered to the teachers (stakeholders) • Formal Educational Assessment administered to the eight learners on the programme (SDRT) • Completion of Permission forms
2	Implementation of the IATLI programme based on inclusive education theories and policy. Programme to be initiated through one-on-one	• Researcher's journal/diary (intensive observation) that

	mediated remedial sessions to each of the eight participant learners selected. A minimum of one mediated IATLI session to be conducted each academic week in the academic programme over the six month period.	included the learner participant's commentary • Learner observations in real educational settings (information to be added to the reflexive researcher's journal)
3	Evaluation to determine the effectiveness of the mediated inclusive education intervention (IATLI) (Collaborative consultancy interventions with teachers regarding the content of the IATLI were conducted with staff from the inception of the study. However, the content of those sessions did not form part of this study).	• Comparative post-programme Formal Educational Testing using SDRT. • Semi-structured interviews with all teachers involved in the actual education of the participants

3.5 Description of the intended data collection methods

A part of my qualitative data came through structured Likert-Type questionnaires. For this research the questionnaires provided me with reliable data to test my hypothesis and make informed predictions that could stand up to criticism. The Likert-Type questionnaires that were employed in the initial data gathering process utilised rating scale response formats. It was essential to pay close attention to technically correct terminology so as to avoid leading questions, value judgements and hypothetical future situations (Breakwell, Hammond & Fife-Shaw, 1995). The nature of the structured Likert-Type questionnaires were tailored to gather very specific types of information for this study, particularly information about attitudes and opinions, knowledge and intentions, expectations and criticisms of the whole process.

The Likert-Type questionnaire was circulated digitally through the school's intranet system and was available to all the teaching staff who were directly or indirectly influenced by the IATLI programme and the school's inclusive education policy and its initiatives. The questionnaire was anonymous and participation was voluntary. The data was used to enable the researcher to evaluate opinions that were relevant to the study. The main reason why I used the Likert-Type questionnaires was to broaden the scope of my study to a greater selection of the population of stakeholders at the school. This group comprised other

teachers at the school who either had taught children receiving learning support previously or who would teach them as they entered more senior grades, as well as the participating grade eight teachers. I felt that obtaining the opinions of the wider population was necessary as the support programme impacts the whole school community not just the small group affected. I surmised that the questionnaire survey would provide me with data that gave me an overall impression around the mediated IATLI programme's effectiveness in accordance with some aspects of the sub-questions of my study.

This research also constituted the use of semi-structured interviews as a data-gathering technique to the twelve teachers directly associated with the eight participant learners. Breakwell, Hammond and Fife-Shaw (1995) define interviews as a technique that requires a very systematic approach to data collection; they are also described as very flexible tools of research. In the semi-structured interviews with the teachers, conducted as part of my research, the precise order of the questions were fixed, however the questions were more open-ended in nature which was intended to prompt discussion. This format of interview process has advantages and disadvantages, but the richness of the data was determined by the appreciation that the researcher had for the topic. All the interview sessions were recorded onto analogue cassette tapes after obtaining written permission from the teachers concerned, and a full transcription of the recorded interview in its entirety was produced to incorporate all responses. This was done in order that I did not become selective in which responses I utilised in the triangulation analysis and discussion process.

To further refine the type of interview I used, I referred to McMillan and Schumacher (2010) who advocate the use of a 'phenomenological' interview. The 'phenomenological' interview is a specific type of in-depth interview used to study the detailed meanings of a lived experience. The experiences of the teacher participants interviewed usually have a deep meaning to the interviewee. As a semi-structured approach to questioning was used and the questions were mostly open ended, I had little control over the responses of the interviewees.

The interviews were conducted around the concept of funnelling, which saw the initial questions being general and as the interview progressed the questions then became more specific. My interview questions adhered to these guidelines: 'Interview probes' elicited elaboration of detail and further clarification of responses from the participants. 'Statements of the research purpose and focus' allowed me to guarantee assurance of the protection of the person's identity and provide an overview of the possible discussion topics. Attention was

also paid to the 'order of the questions'. In this data collecting process the questions were grouped according to theme or topic, however I was flexible to allow for elaboration in the answers. I also tried to reserve complex and difficult questions for the middle or end stages of the interviews as that was when the participant was most focussed (McMillan & Schumacher, 2010). Sometimes a teacher would begin to answer another question rather than the one asked, and I allowed for this as it provided me with a more free-flowing discussion. The interviews were designed to capture the perceptions of the teachers, obtain their expectations and clarify information (Appendix 10).

The evaluation of the data collected during the research process needed to be sufficient and diverse enough to ensure trustworthiness, reliability and validity of the study. For this to be achieved, triangulation techniques were utilized.

Another data collection tool that I utilized was the researcher's journal. This research tool had the capacity to provide me with rich data that provided informative insight into my research questions in an inductive way and also enabled me to examine the effectiveness of the IATLI programme and its contribution to inclusive education at this particular school. Intensive participant observation and reflexive note-taking enabled me to obtain the children's perceptions of events and processes expressed in their actions, feelings, thoughts and beliefs (McMillan & Schumacher, 2010). Because the interactive nature of the learning support sessions was intense and complex, recording every detail was near impossible. It was therefore necessary to use reflexive note-taking which was done regularly to record what took place (McMillan & Schumacher, 2010). It was seen as very pertinent to my study to get the 'grounded' opinions of how the learner participants found and experienced their roles in the process. I believed that the real and emotional responses to the mediated IATLI programme from the learners, which included feedback on their frustrations, moments of discovery and general opinions, were important as a data source to evaluate the critical success factors of the mediated IATLI learning support programme. This type of data however lacked certain aspects of credibility as it was totally created and determined by the researcher and as a result the observations and conclusions reached were not used independently to validate findings of this study.

Inherent in this study was the real danger of information and data being tainted with a bias or subjective perspective. Even if not consciously, I wanted to see a positive outcome to the

research questions. Participant observation techniques are most effective if the researcher is totally removed from involvement in the process. This was not possible in this study due to its participatory action research design. I had to be very careful to include all types of responses without using a filter to enhance or skew any conclusions in any way. MacMillan and Schumacher (2010) refer to the necessity for reflexivity in qualitative research. Reflexivity is basically a rigorous self-scrutiny by the researcher throughout the entire data gathering process. The very act of posing reflective and challenging questions to myself demonstrated that I could never have been totally neutral, detached or objective. This then became a very important procedure in establishing credibility. What is explained in the data analysis chapter (chapter four) is how the subjective-type of data obtained from the reflexive researcher's journal was used in the analysis and triangulation as a framework to compare and contrast with the more objective data results elicited from semi-structured interview data and educational testing data.

3.6 Consideration of the natural setting where my research was conducted

The concept of 'context sensitivity' was very important for my research. Context sensitivity is based on the belief that human actions and behaviour are strongly influenced by the environmental setting in which they operate. If this research was to be valid and authentic I needed to consider that meaning was bound by social, ethical, political, gender-based, racial, economic and technological factors. These factors and others formed the 'lens' through which I interpreted my data (McMillan & Schumacher, 2010).

Another factor that needed to be considered if my research findings were to be authentic in the methodology I used when analysing the data I collected, was the concept of an inductive enquiry. I ensured that I tested my hypothesis against the data collected rather than collect data only to support my hypothesis, as this would have been a purely deductive process. Selective data collection would have painted a picture that was not fully representative of the critical success factors of the study and would have caused bias. It was therefore necessary to conduct an 'inductive data analysis', which was a 'bottom-up' process which did not limit the type of evidence that I collected. Inductive data analysis of some data sources allowed me to create a 'picture' from the varied pieces of information that I collected. This process is referred to as funnelling, as in the beginning data may seem to be extensive and unrelated, but as the data is worked with and refined, progressively more specific findings emerge (McMillan & Schumacher, 2010). The semi-structured interview data and the SDRT

educational testing data were also considered deductively when corroborating information gathered from the inductive analysis of the data gathered in the reflexive researcher's journal.

3.7 Triangulation

Cohen and Manion (1989) define triangulation as the use of two or more methods of data collection in the investigation of some aspect of human behaviour. By analogy triangular methods in the social sciences try to map out and explain the richness and complexity of human interactions. Using both qualitative and quantitative data, so that we study something from more than one standpoint, achieved this. If we rely on one method entirely we may bias or distort the final picture and influence the findings and conclusions. The value of triangulation, according to Cohen and Manion (1989), is that the more comparative data available at the end of the study, the greater the researcher's confidence in his conclusions. If, for example, the outcomes of a questionnaire correspond to those of an observation then the researcher could be confident about his findings. This brings the researcher closer to the relative truth, reliable findings and the critical successes of the study.

Cohen and Manion (1989) further develop and refine the research design of triangulation by referring to different types of triangulation in research that might be appropriate to a typical type of study in education. For my study I utilized a type of triangulation called 'methodological triangulation' or, to be more specific, a type of methodological triangulation called triangulation between methods, which involved the use of more than one method in the pursuit of a given objective.

Triangulation takes on a special relevance when a complex phenomenon requires elucidation. In the case of my study, investigating the mediation of the IATLI literacy programme to grade eight learners, a single method approach would not have been appropriate. If, for instance, I only relied on a quantitative analysis of pre- and post-test scores to measure relative literacy improvements, the data would have been insufficient and too narrow in perspective to answer my research question with any confidence or validity. Without a continuous analysis of the process through a researcher's journal, or from surveys and interviews conducted with relevant stakeholders that included the teachers, I would have missed subtle intangible features including teachers' impressions of the IATLI intervention or inclusion for example, and the actual relative success of the mediation of literacy skills and

cognitive learning strategies. I feel that there existed an iterative relationship between the qualitative and the quantitative evidence that I collected.

Yin (2003) explains how case studies allow the researcher the opportunity to address a broad range of evidence that explores historical, attitudinal and behavioural issues. Yin further explains how multiple sources of evidence are important in the development of data evaluation called the 'converging lines of enquiry'. This process of triangulation supports the methodological triangulation discussed by Cohen and Manion (1989) where the various data sources gathered for my study converge in the analysis in an attempt to get closer to reliable conclusions or facts through the emergence of patterns and corroborating discoveries from the data.

My research study utilised the 'triangulation research design' by applying a range of data collection techniques, including a quantitative analysis of pre- and post-educational testing scores conducted with the learners before the mediated programme began, and six months later at the end of the programme, Likert-Type questionnaires given to all the participating teachers, semi-structured interviews with teachers and evidence from a researcher's diary that chronicled the actual process of the mediated literacy programme including learner responses. This variety of data sources was collected intentionally in accordance with the objective of carrying out effective triangulation in data evaluation.

3.8 Techniques of qualitative data analysis

McMillan and Schumacher (2010) describe qualitative data analysis as an inductive process where data is organised into categories, patterns are identified and relationships between the categories are established. I organised my research process in line with the concepts of a thematic inductive analysis; the inductive nature of the process then ensured that conclusions and presuppositions were not arrived at before the process of data analysis was concluded. Qualitative analysis is described by McMillan and Schumacher (2010) as a systematic process of coding, categorising and interpreting data to come up with explanations around a single phenomenon of interest. In the context of my study that phenomenon of interest was whether the objectives of IATLI programme could be effectively mediated to the learners who participated in the learning support programme and whether the method of the programme's integration into the school's systems facilitates effective inclusive education at the school.

In order to confirm or disconfirm the theoretical framework underpinning my study into the mediation of the IATLI, inductive analytical methods were used to organize and process my data. My qualitative data set originated from three types of data collected over the duration of my study. As previously mentioned, these included semi-structured interviews with the teachers who taught the children on the programme, a researcher's journal with reflexive commentary from the mediated sessions, which included opinions and responses from the children and any interactions that I had with parents, and archival evidence in the form of emails and memos.

McMillan and Schumacher (2010) explain the process of coding to be one where the researcher begins by identifying small pieces of data that stand alone; these are called segments. The segments are then analysed to reveal codes; a code is therefore a phrase that is used to provide coherent meaning to the segment. In my data analysis the codes were anything that included activities, direct quotations, participant perceptions, events or ideas. I also used labels that classified participants', wording these are called 'in-vivo codes'.

The next step that I used after the systematic process of coding my interview transcriptions and journal material was to form categories (themes). A single category or theme was designed to give meaning to a combination of codes. The categories represented the major ideas that were used to derive meaning from similarly coded data (McMillan & Schumacher, 2010). Some of my categories were coded as 'major' because they represented the main idea, while others were coded as 'minor' because they represented an idea that was peripheral to the thematic focus of my study. This repetitive process of coding and developing of themes led to a recursive process or 'constant comparison' where I was constantly searching for supporting and conflicting evidence relating to my predetermined category.

The ultimate goal of my data analysis was to make informative statements about relationships among categories by discovering patterns in the data; basically a pattern was a relationship among many categories (McMillan & Schumacher, 2010). The major patterns that I identified served as the eventual framework from which I reported my findings. The codes were flexible and were moved into more than one category which allowed for greater meaning to be attached to patterns. The explanation of the patterns that were found were discussed and backed up by direct quotations/excerpts in the 'discussion and results' section.

3.9 The researcher as an ethnographer

The researcher also considered the theories and practical applications of Emerson, Fretz and Shaw (1995) who define the techniques and theoretical underpinnings of writing ethnographic field notes and compiling an ethnographic text. The analytic processes and practices that I adopted in my data analysis drew from the theoretical underpinnings developed by sociologists taking the 'grounded theory' approach to analysing qualitative data. Emerson, Fretz and Shaw define the grounded theory approach as analysis that is an almost clear cut, autonomous activity that is inductive in nature, emphasizing the discovery of theory in the field-notes or in the commentary associated with the interviews conducted with the teachers. The theoretical methods of data analysis discussed by Emerson, Fretz and Shaw are in line with the previously discussed methodology of qualitative data analysis explained by McMillan and Schumacher (2010).

Emerson, Fretz and Shaw (1995) describe the beginning of the 'concentrated' analysis of field-notes and interview data by reading the field-notes and interview texts in a new manner. This involves looking closely and systematically at what the researcher had recorded. This meant re-examining everything that was written down, while consciously seeking to identify themes. During this process of 'close reading' with my own research I then began a process of open-coding and writing of memos. For each theme that was extracted from the field-notes or semi-structured interviews the researcher outlined the 'analytic point' that the theme was proposing. This was followed by 'orientating information' that framed the context of the excerpts that were discussed. After the excerpts were discussed the researcher compiled an 'analytical commentary' that discussed the excerpts in line with the research questions of the study.

Once I had identified core themes and sorted the field-notes and interview data accordingly I turned to a fine-grained, line-by-line analysis of the notes in what is described by Emerson, Fretz and Shaw (1995) as 'focussed coding'. Focussed coding involves building up and elaborating on relevant and analytically interesting themes. This is done by simultaneously connecting data that originally does not seem to be relevant to the initial themes and by deciding on sub-themes and sub-topics that distinguish differences within the broader topic. The process of focussed coding helps the researcher to find subtle information that may be very relevant to the discussion of the research questions (Emerson, Fretz & Shaw, 1995).

When the ethnographer/researcher began to conduct a detailed and systematic analysis of qualitative data he needed to continuously ask himself various guiding questions. Those included: 1. What were people doing and what were they trying to accomplish? 2. How did the teachers and learners talk about, characterise and understand what was going on? 3. What assumptions were the teachers making in their answers and opinions? 4. What was observed as going on here (during mediated learning support sessions, and teacher interviews) and what was learned or interpreted from this data? Finally 5. Why were certain notes or interview texts included in my data set and what made them significant to my study? This type of systematic questioning of my data ensured that my methods of data analysis concurred with the theoretical underpinnings of grounded theories that consistently reminded the researcher to be an inductive thinker rather than purely deductive, as this could 'lead' or taint the findings in some way (Emerson, Fretz & Shaw, 1995).

The findings and discussion of the results were presented as an ethnographic narrative that 'tells a story' thereby integrating the process of the participatory, case study design of the project and the data that had been extracted and analysed continuously as the project progressed. This ethnographic narrative was continuous across the analysis of the results chapter and the findings and conclusion chapter. In other words describing the findings in a story format/narrative structure allowed for deep discussion in a manner that was easy for the reader to interpret and follow.

3.10 Reliability and validity

In order for this research to be credible and for the results to be reliable, I had to take into account the extent to which my scientific explanations or phenomena matched reality.

The first consideration that needed to be investigated took into account the 'internal validity' of this study. McMillan and Schumacher (2010) describe the internal validity as the causal links between the dependent and the independent variables within a project. McMillan and Schumacher (2010) identify 'history' as a category of threat that refers to any uncontrolled event or incident that might affect the dependant variable. In this case the dependant variable was my research study that examined the effect of the mediation process on the participants on the IATLI programme. If events happened during the duration of the study, for example, one of the participants might have enrolled in a parallel literacy programme, it would have become very difficult for me to say for certain whether the final results were due

to my intervention, or the unplanned event, or an independent variable. This would then have become a limitation to my research project.

McMillan and Schumacher (2010) discuss 'selection threats' as another form of threat to the internal validity of my study that needed to be considered. The standardised tests I used to identify specific cognitive or literacy weaknesses of candidates might not have been applicable in the same manner to all the children tested, or the information provided during the interview process to construct the EGOs might have been manipulated by a previous school or the parents of the child in an attempt to guarantee a child a place on the programme.

McMillan and Schumacher (2010) also refer to 'attrition' and 'maturation' as possible internal threats that need mentioning. The study took place over a six month period and it can be assumed that natural biological and cognitive maturation took place for the participant learners which could have had an effect on the overall results of the study. Daily environmental issues including boredom, hunger, tiredness, irritability of both the mediator and the participants and cancelled sessions could have had a negative effect on the study that would have been hard to quantify. Awareness of this type of threat and recording of events as they unfolded in order that they could be discussed in the findings and discussion chapter was seen as necessary to obtain reliable and credible conclusions.

'Intervention replicas' as described by McMillan and Schumacher (2010) would have been particularly troublesome and were a real threat to the internal validity of my study. Although the content and general outcomes of the IATLI programme were set, the delivery of the content and the emotional experience was very different and unique for each learner who participated, thus the internal replication was hard to achieve exactly and has thus become a limitation on my study that is explored in the findings and discussion chapter.

External validity

Since my study was a case study comprising a small group of eight learners in a controlled site-based environment, I cannot state with confidence that this research would generate a similar set of results at a different location (Yin, 2003). This study was also limited in terms of 'population external validity' as I was dealing with a very narrow sample group comprising eight boys between 13 and 14 years of age. I therefore cannot generalise that the findings or conclusions reached could be replicated with a group of girls, for example, or with a bigger group.

The reason that there were no girls in this particular sample was purely by chance; there had been girls on similar programmes in previous years at this particular site. However, this cohort of learners all happened to be boys. I have conducted mediated support programmes with girls of the same age in clinical settings and found that their responses and progress were just as dependent on their temperament, emotional state, personality and degree of cognitive barriers preventing them from being academically successful as that of boys. However, research in the United Kingdom indicates that boys were three times more likely to have been identified with special educational needs when in secondary school compared to girls (Department of Education, 2010). In my experience the gender of the participants was not as great an influencing factor as the ecosystemic variables described in the data from the EGO analysis. It is worth investigating why we find a marginally higher percentage of male learners in special needs schools than females, but such an investigation is beyond the focus of my research project.

3.11 Compliance with ethical standards

Strict ethical measures were adhered to during this study, as outlined by the Faculty of Education and The University of the Witwatersrand Ethics Committee. These measures included obtaining written permission to conduct the study from the Principal, as well as obtaining the written informed consent of all the participants involved and their parents for the duration of the study. Participant details were kept confidential and no names were mentioned in the dissertation or in any of the data presented.

I entered into a written contract with the parents of the learners who were invited to participate on the programme, the teachers who taught the learners, and the principal of the school. The mediated IATLI programme was comprehensively explained and described to all participants before they were interviewed, or began to participate in formal learning support sessions, in the case of the selected learners.

Participants interviewed did not have their names attached to interview schedules nor were their names mentioned in any taped interview conversations. I informed all participants that any raw data would be destroyed within three to five years of this project being concluded. Only my supervisor and the WITS examination board and any person they nominate as an external examiner would have access to data elicited from participants as part of this study.

3.12 Conclusion

This chapter described the nature of the research design and the theory that defined the techniques of data analysis that were used in this research study. The methodology chapter highlighted the fundamental reasons why the researcher used a mixed method research design in order to come to reliable conclusions about the critical success factors evident from the mediation of the IATLI programme at the chosen independent school. The methodology chapter also described the role of the researcher in this study, as an active participant in a participatory action research project.

In the findings and discussion of results chapter that follows the researcher discusses the relevant data elicited from this study and further describes the environment in which this project took place, including commentary discussing relevant ecosystemic details of all eight participants involved as elicited from EGO analysis. The discussion of results chapter also includes a review of the opinions of the teachers and the learners who actively participated in the programme through a presentation of the evidence from the researchers journal and the semi-structured interviews. The qualitative evidence was considered in the form of an ethnographic narrative, while the quantitative evidence that includes the results of the pre- and post-test analysis is presented in tabular form. Tables of the certain data sets and comparative graphs of testing data were incorporated for comparison purposes.

CHAPTER FOUR

FINDINGS AND DISCUSSION OF RESULTS

4. Introduction (Results of data analysis)

Chapter three discussed the methodologies that provided the design and the lens of my study. Chapter three also described the procedures and steps taken to gather the necessary data needed to critically explore the research questions asked. Chapter four firstly describes the background history of each of the teachers who directly taught the children who participated on the IATLI programme during the year. Chapter four needs to be read and interpreted by simultaneously taking into account the context of the ecosystemic analysis of each of the eight learner participants (See Appendices 1-8). This is necessary as this EGO information needs to be constantly referred to throughout the discussion of the data findings, as this information cannot be considered in isolation but rather needs to be framed by the unique life circumstances and contributing variables presented by each learner including intra- and inter-personal characteristics, social circumstances, temperament and cognitive learning barriers. The chapter continues by discussing and unpacking each set of data elicited from the research study (Likert-Type survey, researcher's journal, pre- and post-educational testing and semi-structured interview data with participant teachers) individually in order to create a clear understanding of the findings. This process allowed for causal links, correlations and patterns across the data sets to emerge.

4.1 Learner Participants' and Teacher Participants' Background History/Information

As mentioned appendices 1 to 8 summarise the findings of the ecosystemic process that took place with the learners at the beginning of the study. The summaries contained in the appendices were taken directly from the EGO and the Learning Support Planning Graphic Organizer conducted with each of these learners. It was seen as an important aspect of this study to analyse the data represented and discussed in this chapter, collected from educational testing, surveys, semi-structured interviews and research journal excerpts, by constantly referring to the unique ecosystemic factors of each individual learner. The table that follows provides background information pertaining to the twelve teachers involved directly with the grade eight learners.

Table 2: Teachers who participated in the research project

TEACHER	AGE	QUALIFICATION	TEACHING YEARS	TEACHING SUBJECT/S	PARTICIPANTS TAUGHT OR COMMENTED ON
T1	48	Bachelor of Science, PGCE	20	Geography	All (3,6,7)
T2	54	Higher Diploma in Education (Secondary)	25	History	All (2,4,6)
T3	36	Bachelor of Science, PGCE	11	Mathematics Biology	1,2,3,4,6,7
T4	37	Bachelor of Science, PGCE	20	Mathematics/ English	(7,8)
T5	50	Bachelor in Science, Honours in Science, Masters in science, PGCE	3	Physical Science	All (2)
T6	43	Not qualified, Currently in year 4 of Bachelor in Education (Secondary)	6	Life Orientation	All (1,2,4,5,8)
T7	36	Bachelor of Science, PGCE	20	Science Life Orientation	(2,3,4,5,8)
T8	36	Bachelor of Arts, PGCE	18	English	(1,2,3,5,4,6,7)
T9	32	Bachelor of Education (Secondary)	10	Mathematics/Life sciences	All (1,5)
T10	38	Higher Diploma in Education (Physical Education)	13	Life Orientation	(1,3,4,7,8)
T11	40	Bachelor of Science, PGCE	17	Biology	(1,2,5,7)
T12	43	Bachelor of Commerce, PGCE Honours in Education	22	Economic Management Sciences	All (8)

The twelve teachers whose profiles are discussed in Table 2 were the class teachers of the learners in the grade eight group. They all readily agreed to be observers and participants in my study. This group of teachers volunteered to provide me with analytical feedback and gave me permission to conduct the semi-structured interviews with them at the conclusion of

research study. These teachers also participated in informal discussion groups that outlined the outcomes and design of the IATLI programme as part of the communication encouraged by the school when promoting inclusive education initiatives or policies. All the learner participants were taught by the majority of the teachers at some stage over the duration of the study. Team teaching and specialization of subject teaching was encouraged within the grade eight and grade nine teacher cohort who were discussed in table 2.

4.2 Discussions of the results from the Likert-Type Questionnaire

Twenty-three teacher participants responded to the survey, the results of each question are discussed below. This survey was conducted before the programme was started with this particular cohort of learners. There was a history of learning support programmes of this type being run at this school for two years in the same organisational and logistical format. The goal of the Likert-Type survey was not to examine the results of the IATLI case-study related specifically to these eight children individually, but rather to answer sub-question four that explored the critical success factors of this type of programme as conducive to effective inclusive education. These results were then used as supportive evidence to corroborate or refute evidence from the teacher interviews and the researcher's journal.

The IATLI mediated support programme that I had been investigating at the research site was intended to be operated as part of the school's inclusive education policy, the objectives of which were to allow education to be more accessible to all learners. In order for this programme to be effective it had to be supported by the school community, particularly by the educators who were involved with the students who were participating on the programme.

(The twelve teachers who were part of the semi-structured interview process conducted at the conclusion to the programme were all directly involved in the programme, as they all taught the eight learner participants involved in this study, and were consulted and involved from the start. The survey was conducted internally through the school's intranet service and the survey was accessible to all academic teaching staff who had been involved to some degree in the programme, or those who had taught, or were teaching children who were part of the programme.)

1. A learning support programme is very important for grade eights?

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
52.2% (12)	34.8% (8)	4.3% (1)	8.7% (2)	0.0% (0)

A substantial majority of participants (87%) either agreed or strongly agreed that a learning support programme was important for grade eight learners. This indicated that the teachers at this site would rather see some type of programme being available as an option to learners instead of them leaving the school to attend a special needs school as was sometimes the case. This could be interpreted in two ways: either they felt frustrated by learners who were not succeeding in their subjects and would like to see them removed and supported, or they felt that extra support would provide learners with critical skills that would assist them to be successful learners.

2. Teaching methods should be tailored to the learning style of the individual?

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
30.4% (7)	56.5% (13)	4.3% (1)	8.8% (2)	0.0% (0)

86.9% of the participants reported that teaching methods should be tailored to the learning style of the individual learner. This result indicated that at this particular site there was an awareness of the variety of learning styles presented by the children in class that needed to be accommodated. This indicated that the teachers in general felt that differentiation of lessons, and lessons aimed at the learning styles of the children, were important. This result could be interpreted as an indication that at this school there was an interest in inclusive education practice as there was a desire to see lessons that reached the learners and tailored to their individual demands.

3. Do you expect to see an immediate improvement in literacy skills of learners on the programme?

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
0.0% (0)	17.4% (4)	39.1% (9)	43.5% (10)	0.0% (0)

Answers to this question indicated mixed results with 43.5% of respondents disagreeing that any improvements would be immediately observed. 39.1% of the respondents remained neutral in their responses, with 17.4% of participants of the opinion that immediate improvements would be evident. These responses highlight that in the opinion of the majority of participants surveyed an inclusive education learning support programme was not an immediate solution that would yield a quick result in improving literacy ability for children with cognitive barriers to learning that affected reading and writing.

4. Do you see educational value in having learners out of your lessons and in learning support sessions?

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
8.7% (2)	17.4% (4)	4.3% (1)	60.9% (14)	8.7% (2)

Results to this question were mixed with a significant minority of respondents (26.1%) in support of children attending intervention sessions out of their lessons. This could be interpreted as these teachers supporting what the programme offered and that the learning support curriculum covered on the programme was of significant value to the individual learner and was ultimately necessary to improve class performance.

The majority of participants (69.6%) were against learners leaving their lessons for learning support sessions and this indicated that they were not in favour of the current method of delivery of the intervention programme. These responses were also taking into account the time lost by learners who attended IATLI learning support sessions after school and then subsequently missed extra-mural activities, as these were regarded as part of the school day and carried the same weight as an academic lesson at this particular school. According to this response, this particular method of programme delivery (mediated IATLI) was not enhancing

the school's ability to deliver effective support to learners, as the support given had negative consequences; these included the exclusive connotations associated with removal from class, and the work and teaching missed from the lesson.

5. Do you believe that you will see an improvement in confidence with regard to class participation from the learners on the learning support programme?

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
17.4% (4)	34.8% (8)	13.1% (3)	30.4% (7)	4.3% (1)

The results from this question indicated that more than half (52.2%) of the teachers participating in the survey believed that the IATLI programme could contribute to an improvement of confidence in the participant learners. 30.4% of the respondents were of the opinion that the programme did not contribute to the learner's confidence development.

6. Do you believe that the programme will have a negative impact on the delivery of your subject's curriculum? (Only relevant if you teach any children receiving support.)

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
4.3% (1)	17.4% (4)	26.1% (6)	43.5% (10)	8.7% (2)

Over half, 52.2%, of the teachers indicated that the programme did not have a negative impact on their effective curriculum delivery. 26.1% of the respondents were undecided about the impact of the programme on their lesson delivery. Further discussions had indicated that the extra workload and time demands associated with a support programme could have an attritional impact on learners who needed the extra time to work though the demands of the curriculum. The respondents who agreed that the support programme would have a negative impact (21.7%) felt strongly that the extra demands placed on already vulnerable learners would not be beneficial to their academic development.

7. In your opinion will the learners effectively use strategies learned in the mediated learning support sessions?

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
4.3% (1)	52.2% (12)	30.4% (7)	13.1% (3)	0.0% (0)

56.5% of the teachers indicated that they had confidence in the programme meeting its desired outcomes of mediating learning strategies to the participants. Teachers who indicated that learners would benefit from the programme had already seen a direct improvement in the application of cognitive learning tools by learners who were on the programme. 30.4% of the respondents could not see a direct relationship between the IATLI programme and the development of learning ability in the classroom, although they could not discount it. One teacher who responded to the survey felt that more information was needed to determine a 'baseline' indicator of ability in order to make a realistic, evaluative conclusion.

8. Do you believe that the learning support programme on offer is ideal for a mainstream independent private school?

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
8.7% (2)	39.1% (9)	34.8% (8)	17.4% (4)	0.0% (0)

Results from this question indicated that 47.8% of the teachers were of the opinion that the programme was ideal for a mainstream private independent school. 34.8% of the respondents were undecided as to whether the programme was ideal for a school environment. A significant 17.4% of the teachers believed that this inclusive education initiative was not ideal for a mainstream school. This response indicated to me that the majority of teachers at this site were positive and supportive of the mediated programme, although some clearly had reservations. This was significant as sub-question 4 evaluated the ability of the mediated IATLI programme to be an effective contributing factor to inclusive education at this school.

9. Will improved learning skills lead directly to improved grades in your subject?

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
26.1% (6)	56.5% (13)	8.7% (2)	8.7% (2)	0.0%

82.6% of the teachers questioned either strongly agreed or agreed that improved learning skills would lead directly to improved grades. This suggested that despite the resistance to learning support initiatives and differentiated teaching methodologies from some teachers, overcoming barriers to learning was seen as being necessary for improved grades. 8.7% of the teachers indicated that learning skills were not relevant to improved grades. This data implied a tension that existed between what teachers saw as necessary for learners (cognitive skill development) and the proposed need for specialized interventions that interfered or impacted on normal teaching time in the school day to achieve that objective.

10. In your opinion is the learning support programme fostering enhanced inclusive education in our school?

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
8.7% (2)	52.2% (12)	17.4% (4)	21.7% (5)	0.0% (0)

The research question asked whether this IATLI programme could foster enhanced learning support at this particular site (independent school). Even if the programme showed success with its outcomes the whole project would be ineffective if it could not be sustained and supported in this particular environment. 60.9% of the teachers reported that they either agreed or strongly agreed that this learning support programme was fostering enhanced inclusive education at this school. This indicated that in their professional opinion the programme was needed, and was effective at delivering on its goals. 17.4% of the teachers were undecided as to whether the programme was fostering enhanced inclusive education in support of national policy. 21.7% of the teachers disagreed that the programme had enhanced inclusive education at this school. The majority of teachers responded positively to the programme and its method of delivery, and could see tangible, positive results that indicated that this programme was developing literacy ability and providing learners with effective

learning strategies. However strong arguments did emerge that challenged the view of the IATLI programme as an effective part of inclusive education at this site.

11. Have you seen a direct improvement in the learning ability of any children who have been on the programme? (Only applicable if you have taught a child on the programme for more than six months)

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
9.5% (2)	9.5% (2)	52.4% (11)	19.1% (4)	9.5% (2)

19% of the teachers either agreed or strongly agreed that they saw a direct improvement in the learning ability of the children on the programme. A significant proportion of the sample (52.4%) neither agreed nor disagreed with the question. This data implied that the programme had not produced significant evidence, prior to this study, which suggested a direct improvement in learning ability. 28.6% of the teachers reported that they either disagreed or strongly disagreed with the statement, and had not seen any improvement that could be linked to the IATLI learning support programme.

4.3 Discussion of the results from the researcher's journal as a framework to compare and analyse the results from the testing (SDRT) and the semi-structured interviews.

The analysis of the data collected during the course of the study was both an inductive and a deductive process. The theory that formed the assumptions of this project and the research questions that have framed the data collection methods were deductive in nature. However, the project was also inductive in that it was exploratory in nature. The exploration of each case-study's (participant learner's) progress on the programme and their subsequent outcomes were unknown at the inception and the results from the process formed the basis in answering the research questions.

One form of data analysis that I employed was the reflexive researcher's journal that contained my observations of the actual mediated IATLI sessions with the eight learners who participated in this case-study. The reflexive researcher's journal also contained feedback and comments from the participant learners and their parents. I decided to use the reflexive researcher's journal data in a very specific way when doing my analysis. The observations and comments from this resource were used as a framework on which to compare the results

from the pre- and post-programme testing (SDRT), the Likert-Type survey and the semi-structured interviews conducted with teachers at the conclusion of the study.

The exploratory nature of the information that I gathered from facilitating and mediating the IATLI programme was an inductive process as I did not explicitly link any of the expectations, findings from similar research studies, or the research questions to the information observed and subsequently recorded. The data gathered was often my own interpretation of events that I observed and as a result a natural bias existed in the content, which left the elicited data vulnerable to subjective interpretation. As a result, the researcher's journal data was compared to the other data that was gathered during the duration of this study and this comparative analysis allowed for correlations and contradictions to be revealed and discussed. The other data (pre- and post-testing and the semi-structured interviews) was more deductive in nature as the testing and questions used in the teacher interviews were put in place and structured respectively in accordance with the initial research questions posed. The semi-structured interviews in particular were deductive in design for two reasons: Firstly, the interviews were conducted at the end of the research and drew conclusions from opinions based on six months of interactions. Secondly, the structure of the questions asked and the thematic analysis were compared directly to the research questions.

This way of approaching my data analysis discussion posed a comparison within the data of whether my observations, recorded in the researcher's journal, were supported or rejected by the perceptions of teachers from the semi-structured interviews and the comparative SDRT testing scores.

4.3.1 Discussion of excerpts from the researcher's journal

This section contains selected excerpts, linked to themes that emerged, from the direct observations of the researcher as the mediator of the programme. As a result of the subjective nature of the comments discussed in this section the observations and conclusions represented here are treated as supporting evidence only and provided a contextual framework that described the mediated case-study interventions. This serves to provide the reader with a deeper understanding of the actual, practical and grounded day-to-day running of the IATLI programme.

Emerson, Fretz and Shaw (1995) describe the role of the ethnographer as one where the researcher enters into a social setting to get to know the people participating in it. The ethnographer was conducting a participatory research process as discussed in the methodology chapter (3). The ethnographer also, however, wrote down in regular, systematic order what he observed and learnt while participating in the daily lives of others. Emerson, Fretz and Shaw explain how the ethnographer creates an accumulated record of all these events of real life experiences. What is observed and recorded is ultimately written down and treated as the 'data' that is to be analysed, but must not be separated from the observational process (Emerson, Fretz & Shaw, 1995).

As this was a participatory action research project and the researcher was a participant in the process, it was imperative that field-notes (reflexive researcher's journal) were recorded immediately after each session, and that responses to questions posed to the learner participants were recorded as close to how they were answered.

On every occasion that learner participants attended an IATLI learning support session I followed a descriptive, learner negotiated curriculum that outlined the activities that needed to be conducted during the therapy session. This included shared and paired reading, tracking exercises, thematic and text-based story building activities using cognitive mind-mapping, 'bottom-up' games like 'snap' and 'lotto' using relevant vocabulary and sound family games; some sessions also incorporated therapy around self-esteem issues and time management exercises.

The researcher's journal documented the above mentioned process, but also incorporated the emotional responses (verbal comments and attitude) from the children to the IATLI programme on an ongoing basis. The children were also questioned as to what they thought of the sessions, whether they felt that they were benefiting from the programme, and whether they saw a direct link between the programme and their academic results and participation in class.

One of the key aspects in effective mediation is the development of a productive, reciprocal working relationship between the mediator and the mediatee and this relationship needs to be reciprocal and trusting (Feuerstein, 1980). A mediator and learner relationship is a 'flat structure', not a hierarchical structure, where the teacher has power or authority over the learner. The mediator and learner relationship is essentially a 'learning partnership'. All activities, which included shared reading, tracking, sound family games like lotto, and the

meaning-driven, theme-based tasks, were all done and created together, and the interests and topics that were put forward as working models for the learning support sessions were negotiated and only implemented when mutual acceptance was decided upon.

Paramount to the mediator and learner relationship was trust and the opportunity for easy and sometimes sensitive discussions to take place. An effective mediator needed to be a skilled mentor, particularly when one considers that some of the children who were placed on a learning support programme had a low self-esteem and lacked the motivation to be at school, learn and gain emotionally and cognitively from their experiences. The mediator needed to be a positive person who could encourage the learner participants through constant positive reinforcement and positive self-regard.

4.3.2 Theme one: Participant's emotional responses to the IATLI Programme (Linked to research sub-question two)

The eight children came to see me in my therapy room on a weekly basis for a one-on-one learning support session, on some occasions two sessions would take place in one week, often at the learner's request. Each participant learner had a unique and very structured timetable that clearly outlined when their learning support session would be in the week. Although the management of the school and the teachers were generally in favour of the programme and its implementation, the actual daily functioning and organisation of the programme was extremely difficult to implement, and was often stressful for the children for the very reason that they had to be organized themselves and the mediated sessions were intense and tiring. Also, being part of the programme put more stress on the children as it was one more item that needed to be fitted into the child's already intensive and 'packed' school programme.

On one occasion P1 and P2 came for a learning support session together. This was an experiment I tried and the 'team session' was recommended by the children themselves. This was in line with the reciprocal relationship that was so important in an effective mediator/learner relationship.

> *P1 "We had a discussion to brainstorm the up and coming Art and Culture cycle test. Everybody was positive and involved in the activity."(Adaptation of the comment from the learning support session).*

This excerpt indicated that P1 and P2 had a positive attitude regarding their participation in the learning support sessions. Teachers had noted that P1 one had been a 'passive learner' in

class and that he appeared to be lethargic and unmotivated to learn or participate in any activity. This was seen to be related to his temperament, emotional state, successive processing weaknesses, and the fact that he was unable to access the content of the lessons as a result of not being able to engage with aspects of the content due to literary related barriers. (See EGO analysis in Appendix 1). The fact that P1 was involved in the activity during the IATLI session and that this aspect of his learning was a meaningful and positive process indicated that this session was a positive and beneficial experience. It was incidental that the 'interest based' content of the IATLI session linked to the content from the Art and Culture curriculum. Improved involvement and execute courses of action is associated with improved self-efficacy (Bandura, 1997).

P2 "The participant was very positive and engaged on the task...."

This excerpt showed that P2 was also finding the mediated learning sessions to be a positive experience. If children can develop a love of learning and feel that they are in control of their own learning, (internal locus of control) they find meaning in educational relationships and the process could be far more successful. Phan (2010) describes the links found from his studies between self-efficacy and self-esteem and the positive effects these have on deep cognitive processing. It is also important to note that a 'goodness of fit' relationship was established with P2; if this was not achieved then the success of this intervention would have been in doubt. This implied that the personality of the mediator was an independent variable that could not be ignored both when evaluating the ability to replicate the results of the study in different settings and when evaluating the outcome of the IATLI programme objectively. (See Appendix 2).

> *"(P4) found the procedure to be interesting, I asked him if he is finding our sessions to be beneficial and his response was that they were informative and gave him confidence."*

This response from P4 indicated (*the 'IATLI' gave him confidence)* that he was developing confidence as a direct result of the mediated support sessions. He also indicated that he found the sessions interesting and beneficial. However, during certain sessions it was noted that he presented as tired, agitated and depressed. P4 indicated to me in his induction interview that he was very despondent with regard to his education, and felt that school was a 'waste of time' as he was not learning anything and that his school lessons and the subject curriculums were boring for him. He also felt very self-conscious during lessons as he was

afraid that other children would tease or humiliate him for his low grades and lack of understanding of the content of the work. (See Appendix 4).

> *P5 "Very happy with the skills learned on the programme feels more confident with ability in class..."*

This learner was very reticent and despondent when I first started to conduct mediated IATLI sessions with him. P5 came to this school from a remedial school where only core aspects of the curriculum were taught. Indicators from the EGO and educational and psychological testing that were administered at the end of grade seven at the remedial school showed that this learner was despondent and presented with a low self-esteem. Educational testing also indicated that his reading and writing ability were two, and in some cases up to four years below his age when tested. (See Appendix 5). After a month's participation on the programme this learner repeatedly informed me that he felt confident and happy in the classroom mainly because he had a better understanding of the content of the lessons and activities. This was reinforced with satisfactory grades awarded to him in cycle tests and an English creative writing essay, where he was commended for his use of meaningful and descriptive adjectives. He also displayed evidence of 'planning' and logical, 'self-regulation' in the design of the essay, in accordance with Feuerstein's (1980) cognitive learning strategies. There also exists the notion that the positive reinforcement from the teacher and the grades achieved were also causal variables that contributed to his improved self-confidence.

> *P3 and P7 "All participants were happy to be involved and felt that this was a worthwhile experience." (Interpretation of participant responses in their sessions)*

P3 and P7 indicated to me that they really enjoyed their session and felt that what they were learning and achieving with me in the learning support sessions was worthwhile. It was worth noting that for these learners in particular they often had to put in much more work than other learners to achieve comparable results; (see Appendix 3 and 7) these two learners both attended extra maths and Afrikaans lessons twice a week as well as attending the mediated programme. This was very tiring and demanding on their energy reserves and available time. The IATLI sessions were also very intensive and required a large amount of concentration and focus. P3 and P7 would not have responded positively had they felt that the programme was not beneficial to them. This response indicated that from an emotional perspective these learners felt that the IATLI programme was a positive factor at school.

"(P8) indicated to me that he was very excited about the activity..."

The IATLI programme was designed to integrate both 'bottom-up' and 'top-down' teaching techniques when mediating literacy and cognitive learning tools. Research indicates (Harcombe, 2001, Feuerstein, 1980) that learning needs to be interest-based and meaningful if it is to be successful. This feedback from P8 showed that during this particular mediated learning support session the learning experience was exciting and stimulating. It was indicated in the EGO analysis (see Appendix 8) that P8 was feeling frustrated, not interested, threatened and as a result acted out through negative and disruptive behaviour in class. This excerpt indicated that P8 expressed positive emotions and interest in the mediated experience. This supported Campbell and Lavallee's (1993) description of how self-esteem has been seen to have a pervasive impact on human emotion, cognition and behaviour.

"(P3) found this activity to be very enjoyable; it was clear that he had internalized the vocabulary."

The important aspect of this excerpt was the clear indicator that P3 had internalised the vocabulary that was presented in the session. These indicators were evident in an informal writing activity that was done for a History project, and included vocabulary bridged into the learner's mental schema. This excerpt provided some linear evidence of internalized literacy conventions linked to IATLI learning support sessions. The excerpt also indicated that the activity was enjoyable. Enjoyment is felt when a person does not feel threatened and feels a level of competence in the activity. This can be related to Skuy's (1996) description of Feuerstein's mediated learning strategy of 'competence', and Ntshangase, Mdikana and Cronk (2008) who describe high self-esteem as long term general well-being and emotional development.

" (P4) was very enthusiastic this morning to get busy with the activities. He told me that he had been looking forward to coming to see me all day as he was keen to show me his surfing pictures from his holiday..."

"(P1) speaks highly of his sessions with me and feels that what we are doing is really helping him to better understand what is being taught in class."

Both of these excerpts indicated that the learning support sessions were having a positive impact on P1 and P4's emotional state. They were both enthusiastic and excited about the negotiated content of the programme and were showing initiatives that were internally motivated. Effective learning happens when the desire to learn is stimulated by an 'internal

locus of control', which means that they take the proactive initiative in their own learning. Skuy (1996) and Feuerstein (1980) describe the mediated cognitive learning tools of 'self-change' and 'transcendence'. The positive self-belief and application of literacy skills internalized show that self-change and transcendence were happening for P1 and P4. The EGO indicated that P1 and P4 in particular entered the support programme with low-self-esteem and feelings of alienation from the school experience. (See Appendices 1 and 4).

4.3.3 Theme two: Participants' and facilitators impressions of their own learning skill development from their participation on the IATLI programme (Linked to research sub-question three)

The opinions of the teachers and results from the pre- and post- test scores gave the researcher a reliable indicator of the success of the programmes evaluation that was conducted in this research project. What was seen by the researcher as equally significant however was the impressions and responses from the participants themselves, even if this information was seen in a supporting context only. Learners innately knew whether they were benefiting from an educational initiative. These learners were thirteen and fourteen years old, and had a very keen awareness of their need for support when they were confronted with a situation that was outside of their comfort area or the content covered in class was not known, in other words it could not be bridged into known cognitive schema. They were acutely aware of their inability to engage with the content of the lesson, and depending on their temperament, they become withdrawn, restless, or disruptive, and usually felt some level of anxiety, anger or depression.

When a breakthrough happened the learners could often identify the difference; for example they became more effective at inferential reasoning when attempting a comprehension activity, or they began to understand more content in a piece of factual knowledge as more information was available in their cognitive schema. This difference was felt through the positive reinforcement received from peers and teachers, and an internal sense of achievement.

> *P1 "The participant did very well; he did three tracking activities and the scores improved each time."*
>
> *P2, P3 and P7 "All participants completed three tracking activities and all three participants saw an improvement in their times. This indicated to me that their*

learning skill of tracking and attention to detail with self-regulation was improving." (Evidence from three separate sessions on the same day.)

Tracking activities were completed in every learning support session. The tracking activities were important when it came to attention to detail when reading, which was often difficult for people whose processing strength was simultaneous processing, and who were weak successive processors. Since these were regulated, timed activities, they were a very good indicator of tracking ability progress in learners. As learners improved in these activities they became something of a 'competitive challenge' as the learners tried to better previous scores. These excerpts show clear evidence that tracking ability had improved for P1, P2, P3 and P7. Tracking can be associated with Feuerstein's (1980) cognitive learning tools of 'competence' and 'self-regulation'. (See appendices 1, 2, 3, and 7)

P3 "There is also clear evidence of (P3) applying self-monitoring/regulating strategies as he reads."

"P6 really enjoys the sessions and reported to me that he feels that his concentration and ability to find meaning when doing comprehensions had improved substantially."

One of the main outcomes of the IATLI programme was to develop the ability to find concrete meaning in text (Harcombe, 2001). During the sessions the learners engaged in theme development activities that incorporated the reading of books that they had chosen as they were interesting to them and the development of a story through text-based activities (creative writing activity that saw the children write and publish their own book). Unknown vocabulary then got bridged into the known schema of the learner by incorporating the new vocabulary (from sound families which was a 'bottom-up' series of activities) into known and interest-specific sentences. The second excerpt above clearly indicated that P3 was finding more meaning when reading comprehension texts, or set-work books.

This feedback displayed clear evidence of the IATLI achieving the specific learning outcomes of mediating Feuerstein's cognitive learning strategies of 'self-regulation' and 'meaning'. (See Appendix 3).

"P4 then continued with the story development activity and I was very impressed with his attention to detail and his logical processing."

For P4, who started out on the programme as having weak successive processing skills, poor attention to detail when reading text or when trying to read, decode and process questions when attempting a comprehension in exam conditions; this excerpt proved to be extremely

encouraging. This evidence of attention to detail showed improved 'self-efficacy' in P4's mental construct outlined by Bandura (1997) and self-regulation as a cognitive learning tool as described by Skuy (1996). (See Appendix 4).

Examples of improved attention to detail during mediated IATLI sessions and feedback from P4 of him having achieved satisfactory results in class and test comprehension activities could be linked to his participation on the IATLI programme.

It is important to note that other factors could also have led to this increase in 'attention to detail skills': These include natural maturation, coping strategy acquisition from other interventions, and input from experienced teachers. This was always going to be a limitation to this study, as mentioned in the methodology chapter and in the conclusion chapter. Triangulation of data and replication of this development in learning strategy acquisition in the other children did develop a strong case when reaching a reliable conclusion concerning the critical success of the mediated IATLI programme.

> *P6 "This was a very productive session. He improved his times and made fewer errors; this indicated to me that his MLE learning skill of self-regulation is improving."*

This excerpt referred to an informal, timed reading activity from an age-appropriate book that P6 had chosen as the book that interested him. (An aspect of the meaning based approach of the IATLI curriculum). Each time he read the mediator would note down how many repetitions, omissions, hesitations, and substitutions were taking place. As this excerpt shows, the reading time improved slightly and the error rate decreased; this indicated to me that P6's ability to constantly self-regulate himself while reading was improving. (See Appendix 6). He also reported that he was feeling more confident when asked to read out aloud in class. These improvements noted for P6 could be linked to improved internalisation of Feuerstein's (1980) mediated cognitive learning strategies of 'competence' and 'meaning'.

> *Mediator"...was impressed with P7's progress with the tracking games, he has made real progress and he is showing excellent self monitoring skill, which is where he should be."*

This level of progress and reported learning skills development was replicated here by P7. This learner was a motivated and conscientious child but had a real fear of reading out in class as it would highlight for him how comparatively 'behind' the rest of his class he was. This negatively affected his self-esteem. He reported to me in this excerpt that his confidence

had improved and that his reading was now equivalent to the rest of the learners in his class. This then showed repetitive success of the programme where reading, tracking and self-regulation skills were concerned (Feuerstein, 1980, and Harcombe, 2001).

4.3.4 Theme three: Participants' commentary on their own literacy skill development from participation on the programme. (Linked to research sub-question one)

This theme has many similarities to theme two, but the subtle difference with theme three is that the learners responded to the researcher's questions specifically about their improvement or lack of improvement where literacy abilities were concerned. For these learners this translated to the question that basically asked, 'Are you finding that the quality of your class work has improved and that written work and oral presentations are of a higher standard than before?'

From the perspectives of the parents, school teachers and the management, the success or failure of the programme was often determined by the noted improvements in the academic results attained by the participant learners. This might appear to be a 'short sighted' view but one must consider that in an extremely competitive independent school the pressure for academic success was manifested in the school community's culture.

> *"These sounds were then formulated into meaningful sentences and finally into a short story about nature protection on a game reserve; P8 was impressed with his work."*

This extract was taken after P8 managed to take new text on his own and incorporate it into a meaningful, logical and age-appropriate piece of creative writing. The learner commented that he was proud of what he had personally created. (The creative writing extract was submitted as an assignment for an English lesson and was awarded 75%.)

> *"Feedback was very positive; both participants (P2 and P8) commented that they felt more confident with the concepts of settlement geography and that their vocabulary had increased with meaning-based words."*

Both of these learners indicated that they had developed their ability to use more language conventions and more meaningful vocabulary when attempting class-based work. They both attributed this increased use of language structures and their new found confidence in class to their participation on the IATLI programme. It also needed to be considered that the causal relationships between other variables could have played a role in their new found confidence and success. As the year progressed all the learners had shown evidence of settling down

into the secondary school programme and working relationships had started to become established with teachers. (See Appendix 2 and 8).

> *"P6 has really improved his vocabulary and is using excellent learning strategies to help with his spelling. He commented that he is finding reading and writing easier in the classroom."*
>
> *"P6 indicated to me that he wanted another session later in the week to focus on his sentence construction using the learned vocabulary."*

This feedback indicated that P6 believed that his reading and particularly his writing ability had improved significantly as a result of the IATLI programme. He also indicated that he felt that accessing more mediated sessions would help his performance and develop his sentence construction and use of grammar. (See Appendix 6).

> *"P4 was very happy today and felt that the session was very beneficial to his ability to construct meaningful creative writing exercises. He was confident and mentioned that he felt that the English (theme) focus of the last three sessions has helped him to gain confidence in the classroom."*
>
> *"We concluded with a discussion around class participation, and he indicated to me that he was very happy with how things have been going and that his marks have improved in comprehension and in poetry as a result of applying the self-monitoring skills. Teacher feedback has also been very positive."*

P4 commented that the mediated sessions were directly responsible for the improvement in his writing, and his ability to express himself effectively. This response indicated that the mediated IATLI's intervention as defined by Harcombe (2001) was having a positive effect on P4's cognitive and emotional development. (See appendix 4).

4.3.5 Theme four: Participants' focus and attention during the mediated learning sessions (Linked to sub-question five that evaluated the one-on-one experiences)

For some of the programme's participant learners who could not access the content of a lesson as a result of not being able to understand what was being taught, it was reported in the EGO that they often got restless and lost focus in class. If a learner understood what was being taught, was interested in the material, the content was presented in a manner that activated his cognitive processing strengths, and the learner found that he could internalise and find meaning in the vocabulary and sentences presented to him as a result of a developed sight word pool internalised in his cognitive schema then he would be able to pay attention and really internalize what was being taught.

"(P1) is very animated and focused as we use the combined vocabulary to create the opening paragraph for a short story."

"(P2) was very excited and on task; he is asking questions and shows no signs of getting bored."

Both P1 and P2 informed the researcher that they were more focussed and in the case of P2, he said he was "on-task" and not as bored with his lessons as he was before being part of the IATLI programme. These comments are evidence of the internalisation of Feuerstein's (1980) cognitive learning strategies of 'intentionality' and 'reciprocity', 'competence' and 'self-change'. These excerpts also indicated that the one-on-one mediated sessions were a positive experience for P1 and P2. (See Appendix 1 and 2).

4.3.6 Conclusion

This section discussed the observations recorded during the day-to-day interactions with the participant learners and the researcher during mediated learning support sessions. The observations and findings represented in this section were used as a comparison to the results from the semi-structured interviews conducted with the teachers and the testing scores from the educational testing process with the SDRT. This discussion highlighted many of the successes observed by the researcher during the mediation of the sessions, however it needed to be reiterated that these observations were subjective in nature and were to be compared to the findings from the other data sets. It is clear from these excerpts discussed here that in the researcher's opinion the mediation of the IATLI programme had been relatively successful. What needed to be seen was whether the data elicited from testing, surveys and teacher interviews which were more objective in nature, supported or challenged the observations discussed here. The section that follows analyses the pre- and post-test results that the eight participants achieved at the beginning, and six months later, at the conclusion of the mediated IATLI programme. The analysis of these results provides both group and individual sets of data that are used as supporting evidence when triangulating data in order to reach reliable conclusions.

4.4 Quantitative analysis: Results from pre- and post-testing of the eight learners who participated on the programme

The IATLI programme aimed to develop the literacy and cognitive learning skills of the eight participants in order for them to improve their ability to actively participate and learn in class and to understand the content of the academic curriculums presented. In grade eight the

syllabuses of many subjects taught are more content rich than in primary school. Formal educational testing was required for two reasons before any learner was accepted onto the IATLI programme. Firstly to provide an indication of the learner's literacy ability as to whether the scores showed them to be below their age and grade level for certain literacy skills and secondly as a baseline score to be compared to a post-test which would give the researcher/mediator an indication of whether literacy skill development had been achieved.

The tests that were administered to determine the suitability of a candidate for the IATLI programme were taken from the Stanford Diagnostic Reading Tests. The sub-tests of the SDRT used included the Phonetic Analysis test, the Reading Comprehension test, and the Auditory Vocabulary test. Informal reading and writing tests and the Schonell Dictated Spelling tests were also used. Scores on the SDRT sub-tests were not used as the only bench-mark indicator for admitting a learner onto the mediated IATLI programme.

4.4.1 Results of the pre- and post-test scores for the Phonetic Analysis sub-test

This sub-test of the Stanford Diagnostic Reading Test was designed to determine the ability of the learner to correctly identify and discriminate between the sounds that make up words. Development of phonics will have a direct influence on the literacy ability of the learner. Correct interpretation and identification of the sounds that make up words will lead to increased meaning when working with visual and auditory language usage. A sound and proficient ability to interpret phonics enhances the learner's capacity to access the auditory and visual aspects of a lesson. In secondary school many lessons are presented in a lecture (auditory) format that also requires the learner to read and interpret large extracts of text; this could make lessons virtually inaccessible to a learner with severe phonetic and word/letter discrimination weaknesses. The SDRT interpretation manual (1986) indicates that below grade-level achievement in the vocabulary sub-test meant the learner would probably have difficulty with verbal concepts, poor understanding of idiomatic expressions, multiple-meaning words and word parts.

The statistical analysis of the results of the pre- and post-testing SDRT scores and the comparative results that follow need to be put into perspective. Although this was a defined population, the sample size was only eight learners, and the method of selection was not random in design but highly selective. These details meant that although statistical results were generated they could not be interpreted as a definitive set of results that served as a reliable source of evidence in isolation from other data. The statistical relevance of these

results were interpreted as a part of the rich set of data presented, but were only regarded as an informative and minor contributor to the conclusions reached by this chapter. What was of direct value to this study were the educational test results of each individual learner, as each participant was regarded as an individual case-study and the ecosystemic variables were considered and incorporated into the discussion and resultant conclusions.

The analysis and discussion of the semi-structured teacher interviews that follow this section triangulate the comparative individual scores of the learners that are represented here. Examining the data presented here as eight individual case-studies is more thorough and of more relevance to the 'rich text' narrative than examining the results of the whole cohort. This information from the whole group is included as it puts into perspective the general direction of any recorded, positive or negative changes in performance.

The table below shows the participant pre- and post-testing scores of the Phonetic Analysis sub-test.

Table 3: Phonetics Analysis test score analysis

No	Participant	Phonetic Analysis Pre-test scores	Phonetic Analysis Post-test Scores	Pre test grade level	Post-test grade level	Difference between pre- and post test scores
	Scores	**30**	**30**			
1	P 1	13	14	6	6	1
2	P 2	14	14	6	6	0
3	P 3	26	22	8	8	-4
4	P 4	26	26	8	8	0
5	P 5	22	14	8	7	-8
6	P 6	18	24	7	9	6
7	P 7	16	29	7	9	13
8	P 8	12	17	8	9	5
M						1.6
SD						6

The table below illustrates the breakdown of the SDRT Phonetics Analysis sub-test: The sub-test was out of 30 marks and was divided into questions that focused on consonants (single consonants, consonant clusters and consonant diagraphs) and vowels (short vowels, long vowels and other vowels). Each sub-section counted for 15 marks of the total. The data in this table below provided a detailed breakdown of the individual scores to evaluate progress of the learner participants between the pre- and the post-tests.

Table 4: Phonetics Analysis detailed breakdown

Participant	Cons pre-test	Cons post-test		Vowel pre-test	Vowel post-test
P1	08/15	10/15		05/15	04/15
P2	06/15	07/15		08/15	07/15
P3	14/15	11/15		12/15	11/15
P4	12/15	13/15		14/15	13/15
P5	10/15	09/15		12/15	05/15
P6	08/15	13/15		10/15	11/15
P7	09/15	14/15		07/15	15/15
P8	07/15	09/15		05/15	08/15

4.4.2 Discussion of the breakdown of the Phonetic Analysis sub-test of the SDRT

Any significant positive change in the comparative scores between the pre- and post sub-test of Phonetic Analysis indicated that the learner's ability to successively break down the graphemes and morphemes of words correctly had improved. The 'bottom-up' activities integrated into IATLI sessions included the application of the 'sound family approach' which had the learners examine the various vowel and consonant combinations that made up words (Harcombe, 2001).

Pre-test scores of the SDRT were used more for diagnostic purposes to help focus the uniquely tailored IATLI sessions, while the post-testing processes were more of a summative comparative process.

The data displayed in table (4) showed that P1, P2, P6, P7 and P8 all improved their scores in the questions that evaluated consonant clusters and single consonants identification. Both P3 and P4's results showed deterioration and insignificant improvement respectively in their ability to interpret consonants in single words in the consonant section of the sub-test. It was also evident that P3 and P4's initial consonant test scores were significantly higher than that of the other learners with the exception of P6. P7's improvement in his scores for this area correlated positively with his reduction in hesitations and word omissions when participating in shared reading activities.

In the questions that examined the interpretation and correct identification of vowel sounds in words, P1 and P2 had the lowest pre-test scores and both their results deteriorated in the post-test analysis. This indicated that they had significant barriers to reading and verbal interpretation of words compared to P3 and P4 who scored at and above grade eight level in this section of the sub-test. P5's comparative scores showed a significantly lower score in the post-test for vowel sound recognition; various causal factors could have been responsible for this marked deterioration between the pre- and post-test scores. P7 showed the most significant improvement between the pre- and post-tests for the vowel sounds sub-section.

P1's results started off significantly below the pre-test scores obtained by the other seven numbers, his post test score showed a deterioration that scored at grade six level. This could indicate that although improvements in other ecosystemic areas were recorded with regard to the critical success factors of the mediated IATLI programme stated research questions, there was no empirical evidence to suggest that his ability to successively identify the sounds and successive breakdown of words improved. This suggests that successive processing ability and auditory discrimination remained a weak aspect of his literacy skill set. Mediated learning processes see the development of literacy skill and cognitive learning ability as not focussing on developing processing weaknesses, but rather enhancing innate cognitive strengths to help scaffold identified weakness, however in P1's case improvements had not been noted.

If one considers the combined test result of the Phonetic Analysis sub-test, P7 showed the greatest improvement between the pre- and post-tests (13 mark difference), while P5's marks showed an overall deterioration (8 marks).

4.4.3 Statistical analysis of the Phonetic analysis sub-test of the SDRT

This set of resultant scores was derived from the population (N) which was made up of the eight participants on the programme. This SDRT sub-test was administered before the IATLI began as part of the EGO analysis and immediately after the final session which was six months later. The results were discussed with the individual learners and their parents at the beginning and at the conclusion of the programme.

The level of significance was set at 0.05 before the pre- and post programme results were subjected to a statistical test to determine whether a statistically significant difference occurred.

This set of data was obtained from one population of participants, two sets of data were obtained from one variable (Phonetic Analysis test), namely pre- and post-test scores. We refer to these two sets of matched measures as dependent measures. The *t*-test (*td*) for differences between the means of two dependent groups was used to determine whether a statistically significant change could be found.

The‘t-test’ (*td*) for the pre- and post-test of the Phonetic Analysis sub-test showed the *td* result to be 0.75. This result produced a *p* value of 0.22 which was larger than the level of significance pre-set at 0.05. This implied that no statistically significant change was noted between the two sets of dependent variables. As a result we could not reject the null hypothesis of H0 = 0. Therefore no significant increase in phonics ability could be directly attributed to the eight learners’ participation on the IATLI programme.

This set of data was also analysed with the *Pearsons Product-Momentum Correlation Coefficient* test. The test revealed an *r* score of +0.394 which indicated a positive correlation coefficient of the linear relationship between the two variables (pre- and post test results). This indicated that although the change in the results was not large enough to be statistically significant, the correlation was positive and showed an overall improvement in the phonetic ability of the participants between the inception and conclusion of the IATLI. It was also worth noting that on the day of the post-test one participant reported that he was not feeling well, this could have had a negative influence on his scores. P4 and P5 both had a decrease in their scores in this post-test.

4.4.4 Analysis of the Reading Comprehension sub-test of the Stanford Diagnostic Reading Tests

The table below shows the pre- and post-test scores of the reading comprehension test for the population of the selected participants. With the exceptions of P4 and P8 all the learners showed an increase in their scores in the post-testing. P1 and P2 showed a significant positive improvement in their post-test scores.

Table 5: Reading Comprehension test score analysis

No	Participant	Reading comprehension pre-test scores	Reading comprehension post-test Scores	Pre-test grade level	Post-test grade level	Difference between pre- and post-test scores
	Scores	**60**	**60**			
1	P 1	21	47	5	9	26
2	P 2	34	45	7	9	11
3	P 3	42	42	8	8	0
4	P 4	50	52	9	9	2
5	P 5	34	42	7	8	8
6	P 6	42	46	8	9	4
7	P 7	43	46	9	9	3
8	P 8	37	34	8	8	-3
M						6.25
SD						8.1

Breakdown of the details of the Reading Comprehension sub-test: The sub-test was out of 60 marks and was divided into 30 inferential-type questions and 30 literal type questions. This table compared the differences in the inferential and the literal scores between the pre- and post-tests.

Table 6: Reading Comprehension detailed breakdown

Learners	Literal total pre-test score	Literal total post-test score		Inferential total pre-test score	Inferential total post-test score
P1	11/30	23/30		10/30	24/30
P2	14/30	22/30		20/30	23/30
P3	21/30	22/30		21/30	20/30
P4	26/30	26/30		24/30	26/30
P5	18/30	23/30		16/30	19/30
P6	22/30	23/30		20/30	23/30
P7	21/30	22/30		22/30	24/30
P8	22/30	17/30		15/30	17/30

Reading comprehension ability was considered to be an integral aspect associated with literacy. If learners were reading text-based content, and trying to determine both literal and

inferential meaning from the text that was at a level that was significantly higher than their literary ability, they would not be able to cope effectively. In grade eight the level of text-based content and the amount of comprehension activities that were undertaken in class and in tests every day increased drastically from grade seven. Most of the content of the school subjects from grade nine into the FET phase was grounded in content rich text that had to be learned and applied in a variety of contexts. Improvement in a student's reading comprehension ability, practical learning skills (such as mind mapping), and summary techniques would equip the student with the ability to succeed with the increased reading, writing, summarizing and comprehension demands commonly associated with secondary school's academic programmes.

Competence in reading comprehension required an integrated set of literacy skills that included a developed and internalised sight-word pool, the ability to interpret meaning from text, self-regulation, effective tracking ability, transcendence and bridging of unknown concepts with known concepts in the mental schema, spontaneous summative ability, elaboration of cognitive categories and the ability to use inferential-hypothetical thinking (Skuy, 1996).

P1, P2 and P5 demonstrated the most significant positive change between their pre- and post-test scores, with all of them exceeding the projected improvements stipulated by the SDRT Reading Comprehension test over a six month testing cycle. P3 had a score that did not indicate an improvement in Reading Comprehension ability between the pre- and the post-tests. P8 was the only learner whose results showed deterioration between the pre- and post-tests. P4 and P7 results revealed an insignificant overall improvement between the pre- and post-tests.

4.4.5 Discussion of the breakdown of the literal and inferential aspects tested within the SDRT Reading Comprehension sub-test

The Reading Comprehension sub-test comprising 60 questions was broken down into 30 questions that evaluated literal comprehension ability and 30 that evaluated inferential comprehension ability. Literal-type questions evaluated the learner's ability to summarize extracts of text that were relevant to the question asked, comprehend explicitly stated meanings from the relevant passages and identify and extract direct answers. Inferential-type questions required a higher order of metacognition that in turn required the learner to draw

conclusions and make generalizations linked to meaning internalized in known schematic knowledge.

Improvements in these scores indicate to the researcher that various cognitive learning skills and literacy abilities were internalised by the learners over the duration of the IATLI programme's mediation. These included increased known vocabulary, tracking ability, self-regulation and data gathering for literal-type questions and transcendence, meaning and inferential hypothetical thinking for inferential-type questions (Skuy, 1996). Whether other causal variables contributed to this improved ability to execute comprehension style activities also need to be considered. (For EGO information see Appendices 1 – 8).

P3, P4, P6 and P7 all scored at and above grade eight level for the literal section of the sub-test, with all of these learners showing marginal or no improvement between their pre- and post-test scores. P1, P2 and P5 all recorded scores that were significantly below grade eight level in the literal-type questions in the pre-test analysis, however their post-test scores showed a significant improvement beyond the projected improvement predicted by the SDRT results evaluation model. What can be deduced by this score change is that the integrated methods, and the intensive focus on reading, predicting, tracking and vocabulary in mediated IATLI sessions had a positive effect on the literal comprehension ability of these three learners. Ecosystemic factors could be responsible for the deterioration of P8's results that decreased from 22/30 to 17/30 from the pre- to the post-tests; however his scores did show that he was still functioning at his correct grade level. It also needs to be considered that the IATLI programme was not effective in developing the auditory comprehension ability of P4 and P8 on the evidence of the testing alone.

P1, P5 and P8 all improved their inferential comprehension abilities significantly according to the inferential-type questions of the Reading Comprehension sub-test from a low base-line score in the pre-test. Of all the participants P1 showed the biggest improvement from a score that was below grade six level to a grade eight level in six months. P2, P4, P6 and P7 all started off with satisfactory results and maintained their level of ability in the post-test according to the SDRT, with P2 and P6 showing a change in their grade level from grade seven level to grade eight level. None of the participants showed any significant deterioration between the pre- and the post-test scores for the inferential questions of this sub-test. This can be interpreted on the test scores alone as indicating that the participants' ability

to bridge the cognitive learning strategies of transcendence, competence, challenge, meaning and self-regulation into comprehension tasks had been internalised (Skuy, 1996).

4.4.6 Statistical analysis of the Reading Comprehension sub-test of the SDRT

The 't-test' of differences between the means of two dependent groups' statistical tests' was used to determine whether any statistically significant differences existed between the two dependent measures.

The same level of significance of 0.05 was applied in this test as in the previous two tests.

The *td score* was 2.16, which translated into a *p-score* of 0.0154 which was significantly below the predetermined level of 0.05. This resultant *p-value* indicated that the H0 (null hypothesis) must be rejected and the H1 (alternative hypothesis) accepted. This test showed that there was therefore a significant increase in the reading comprehension scores of the learners between the pre- and post-testing, and that this difference was statistically significant.

4.4.7 Analysis of the Auditory Vocabulary sub-test of the SDRT

Children with auditory vocabulary processing difficulties found it extremely difficult to achieve their potential in most mainstream secondary school environments, particularly once they reached the FET phase. The reason for this was that in most formal lessons the format of teaching relied heavily on verbally presented vocabulary, and many of the subjects that included English, History and Afrikaans relied on the need to be proficient in the ability to understand auditory cues and communicate orally by presenting speeches and answering questions. Poor auditory vocabulary had a direct link to a low sight-word pool.

Many children who were weak successive processors with a history of cognitive learning barriers had often developed a negative attitude to reading as a result of negative environmental stimuli or intrapersonal factors including self-doubt and low self-esteem. This would have contributed to their auditory vocabulary ability being below their age and grade level. Poor auditory processing ability in children could be attributed to many internal and external factors. These could include an undiagnosed hearing difficulty, English as a second language, a lack of a stimulating environment during the formative years where language development was critical, or cognitive processing difficulties that included weaknesses in the cognitive learning strategies described by Feuerstein (1980).

Through the mediation of the IATLI, learners were exposed to tracking activities that aimed to develop their ability to pay attention to detail through the development of self-regulating skills (Feuerstein's MLE). Participation in the IATLI exposed the learner to a very intensive meaning-driven experience of story development, vocabulary enhancement, known sight-word pool development and shared reading, together with structural components that included sentence matching and the sound family approach to simultaneously address sight-word pool and the phonemes of words. One outcome of the IATLI programme and its mediation to learners was to improve their auditory vocabulary through simultaneous, top-down and bottom-up activities (see literature review). This outcome was in line with the main question of this research project.

To gain a baseline indicator of auditory vocabulary level the researcher had used the sub-test of Auditory Vocabulary from the SDRT. This process was undertaken at the inception of the mediated programme, and the post-test was conducted at the conclusion, which was six months later, after the mediated sessions.

Table 7: Auditory Vocabulary test score analysis

Table of results for the pre-and post- test scores (Auditory Vocabulary)

No	Participant	Auditory Vocabulary pre-test scores	Auditory Vocabulary post-test Scores	Pre-test grade level	Post-test grade level	Difference between pre- and post test scores
	Scores	40	40			
1	P 1	29	37	8	9	8
2	P 2	22	26	7	7	4
3	P 3	22	28	7	8	6
4	P 4	31	37	8	9	6
5	P 5	25	18	7	6	-7
6	P 6	29	35	7	9	6
7	P 7	24/30	29/30	8	9	5
8	P 8	20/30	23/30	8	8	3
Mean						3.8
SD						4.3

Breakdown of the scores of the sub-parts of the Auditory Vocabulary test: this test was broken down into three separate learning/interest areas. R & L reading and literature, M & S maths and science and SS & A, social studies and arts. P1-P6 had been tested with the SDRT

Brown Level, P7 and P8 were tested with the Blue Level as their age made this slightly more advanced series more appropriate.

Table 8: Auditory Vocabulary detailed breakdown

Participants	R &L Pre	R&L Post		M & S Pre	M & S Post		SS&A Pre	SS&A Post	
P1	11/16	14/16		10/12	12/12		08/12	11/12	
P2	08/16	10/16		09/12	10/12		05/12	06/12	
P3	09/16	11/16		07/12	09/12		06/12	08/12	
P4	12/16	14/16		09/12	11/12		10/12	12/12	
P5	08/16	7/16		10/12	05/12		07/12	06/12	
P6	12/16	14/16		09/12	11/12		09/12	10/12	
P7	10/10	10/10		08/10	10/10		06/10	09/10	
P8	07/10	10/10		09/10	09/10		04/10	04/10	

4.4.8 Statistical analysis of the Auditory Vocabulary sub-test scores for the learner participants from the SDRT.

The‘t-test’ of differences between the means of two dependent groups statistical tests’ were used to determine whether any statistically significant differences existed between the two dependent measures. In this case the two dependent measures were the pre- and post-test scores for the Auditory Vocabulary sub-test of the Stanford Diagnostic Reading Tests.

The same level of significance of 0.05 was applied in analysing the significance of this test.

The *td score* was 2.5, which translated into a *p-score* of 0.0062 which was below the predetermined level of 0.05. This *p-score* indicated that we must reject the null hypothesis in favour of the alternative hypothesis. The *p-score* indicated that there was a statistically significant increase in auditory vocabulary scores (performance) between the pre- and post-tests of the SDRT.

P1, P3, P4, P6 and P7 showed significant improvements in their post-test scores and results indicate that they are now at their grade level according to the SDRT scores. P5’s post-test score was significantly lower than his pre-test score.

4.4.9 Discussion and comparison of the learner participants' results on the SDRT for Auditory Vocabulary

P5's pre-test score of 25/40 was norm-referenced to grade six level which indicated that, according to this evaluation alone, his ability to understand the meaning of spoken words was below average. Auditory vocabulary weakness indicates an undeveloped syntactic knowledge which can be linked to memory problems, fluency of reading, integrating of concepts around a topic and the meaning of a word. P5's post-test score of 18/40 indicated that his auditory vocabulary ability deteriorated significantly over the six month intervention programme. his were the only scores for this sub-test to show a deterioration. P2 and P3's scores in the pre-testing indicated that for vocabulary ability they were functioning at a grade six level. However, for P1, P3, P4 and P6 and P7 they all showed a significant improvement in their scores in the post-test analysis, and had all improved their auditory vocabulary knowledge by one grade level. P2 and P5 did not improve their overall results to a grade eight performance level in the post-testing process. P7 and P8's scores indicated that they was performing at grade eight level overall as they was tested with the more advanced Blue Level of the SDRT series.

Also P1 and P4 and P6 made significant improvements in their scores in the post-testing and the scores indicated that their vocabulary ability was at or above grade eight level. P1's comparative raw scores showed that of all the participants he made the most significant improvement on his post-test score by improving by 8 points.

P7 made an improvement that indicated that he was at a grade nine level. This was significant and indicated that the methods of integrating meaning-based literary tasks that included 'theme based story development' and working with the 'sound family approach' ('bottom-up' technique of working with the graphemes and syntax of words) on unknown words in mediated IATLI sessions proved to be a causal variable that had a positive effect on P1, P4, P6 and particularly P7's vocabulary development. P6's pre- and post-test scores showed a similar pattern of improvement to P1, (similar baseline scores in pre-testing) and there were also correlations between their tracking ability improvements in mediated sessions (recorded in the researcher's journal) and in their ability to perform verbal tasks like unseen reading.

For the Auditory Vocabulary sub-test on the SDRT all participants, with the exception of P5 made a minimum of a one grade level improvement over the six months that the mediated

IATLI programme ran by the researcher at the site. What can be deduced from this analysis is that the literacy methods of the IATLI that included the intensive and progressive method of introducing new vocabulary to the participants first by 'bottom-up' techniques (sound families and word games) then integrating these words into meaning-based 'top-down' tasks (theme building and story writing) to internalize them in the cognitive schema were instrumental in developing vocabulary ability. (For EGO information see Appendices 1 – 8).

4.4.10 Discussion of the three categories of the Auditory Vocabulary sub-test that included Maths and Science questions, Social Studies and Arts and Reading and Literature

These three components direct the researcher to the broad interest area or aptitude of the participant. If a learner scores highly in a certain component, Maths and Science for example, it can indicate that he has a larger known sight-word pool around aspects and concepts of this learning area. This could be as a result of a genuine interest in the learning area or intensive exposure to the concepts of the learning area, through 'bottom-up' and 'top-down' learning experiences.

P1, P4, P6 and P7 all scored well in the pre- and post-test for the Reading and Literature category with P1, P6 and P8 showing the greatest improvement across the pre- and post-test results. P7 and P8 both scored full marks in the post-test which is significant considering that they were tested on the SDRT Blue Level Series which places their sub-test score at +Grade 10 Level. (For EGO information see Appendices 1 – 8).

P1, P6, P7 and P8 indicated that they had an aptitude for the Maths and Science category with grade appropriate scores, with P7 achieving another full score of 10/10 on the Blue Level sub-test indicating that his auditory vocabulary for this learning area was a strength that could be transcended into the classroom learning situation. P5's post-test score in the Maths and Science category showed a significant deterioration to 5/12 from a grade eight level score of 10/12. P2's Maths and Science scores proved to be an area of relative strength which was important when interpreting class performance and directing mediated sessions.

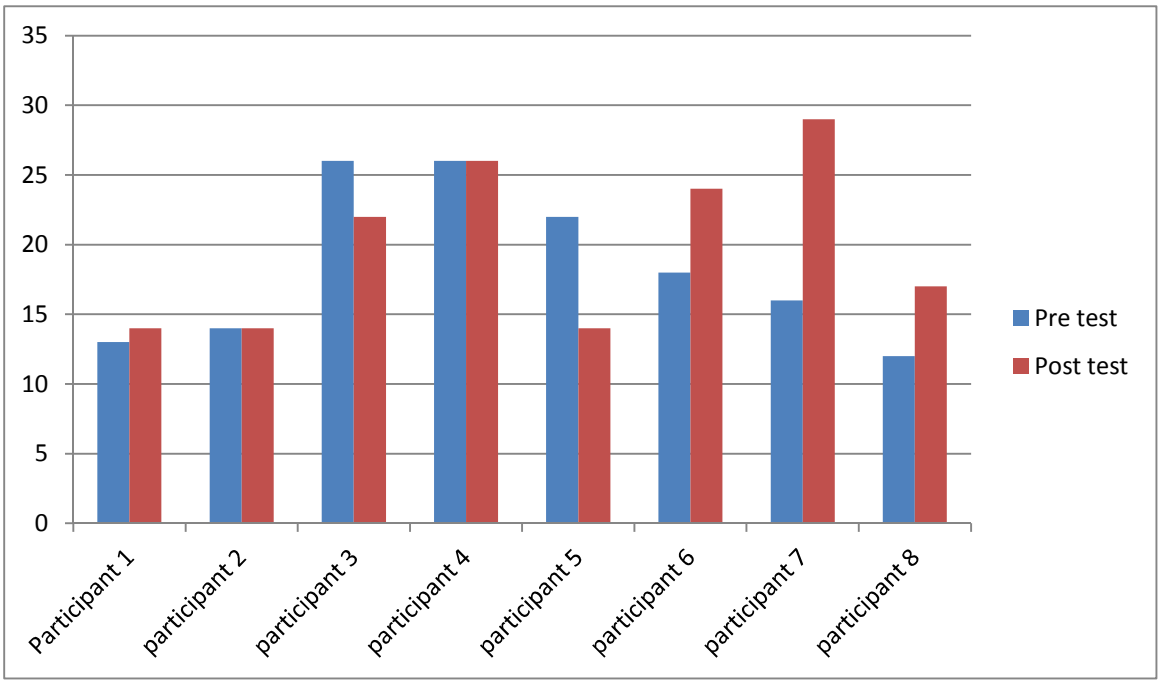
On the 'Social Studies and Arts' category of the Auditory Vocabulary sub-test P2 and P5 had pre-test scores that indicated that the 'sight word pool' for this particular learning area was a weakness. P1 and P7 showed the most significant improvements between the pre- and post test-scores, which can be indicated as an improvement in their known sight-word

pool/vocabulary in the Social Studies and Arts learning area. P8's scores remained constant with no improvement, however he was tested with the higher level Blue Series of the SDRT and the 4/10 score that he achieved in both tests placed him at grade nine level which was acceptable and indicated SS and A as a learning area of strength. P4's pre-test scores indicated that Social Studies and the Arts was a strong subject area and the post-test score of 12/12 showed a positive improvement that placed him at grade nine level for this aspect of the sub-test. These scores for P4 showed that cognitive areas of strength can be further developed and that this improvement could be directly related to the intervention of the mediated support utilizing areas of strength and interest to guide activities.

4.5 Discussion of results from the semi-structured interviews conducted with the teachers who volunteered to participate in this research study

The three graphs that follow display the comparative data from the pre- and post-testing of the participants on the programme (the results are used to support or contradict the views of the teacher participants from the semi-structured interviews discussed in this chapter). (Results in bar graph 3 adjusted for P7 and P8 from the SDRT blue level)

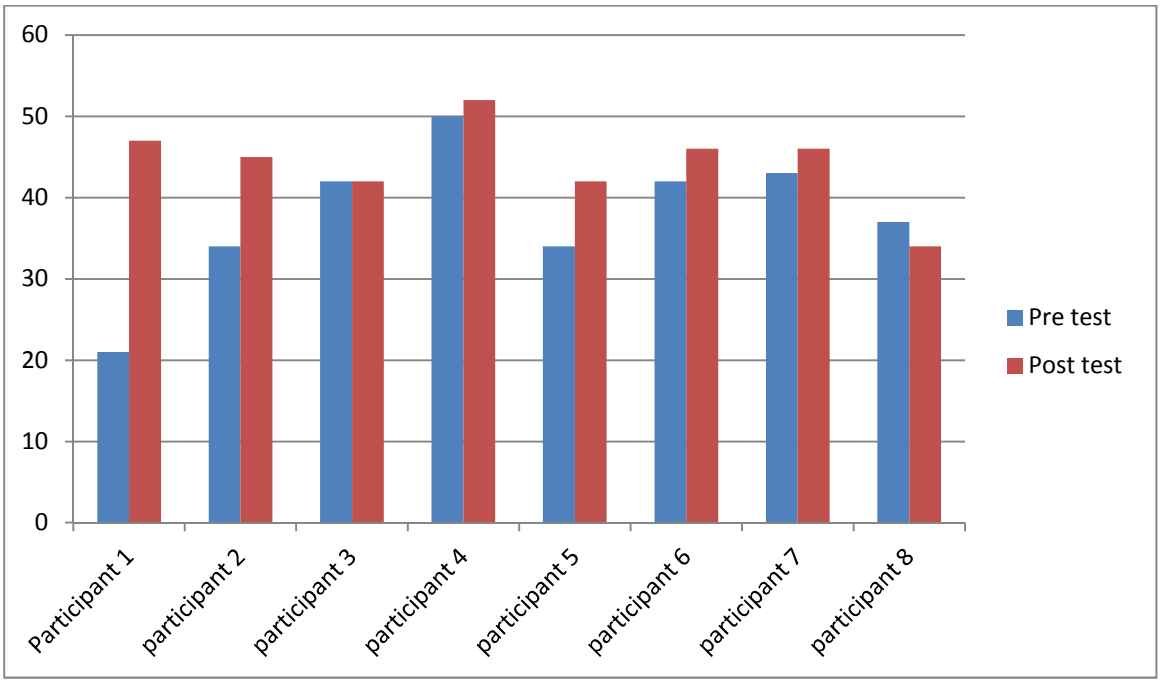
Bar graph 1 that compares the raw scores from the pre- and post-test results of the Phonetic Analysis sub-test of the Stanford Diagnostic Reading Tests series



X axis shows the learner participants

Y axis shows the raw scores from the Phonetics Analysis sub-tests (out of 30)

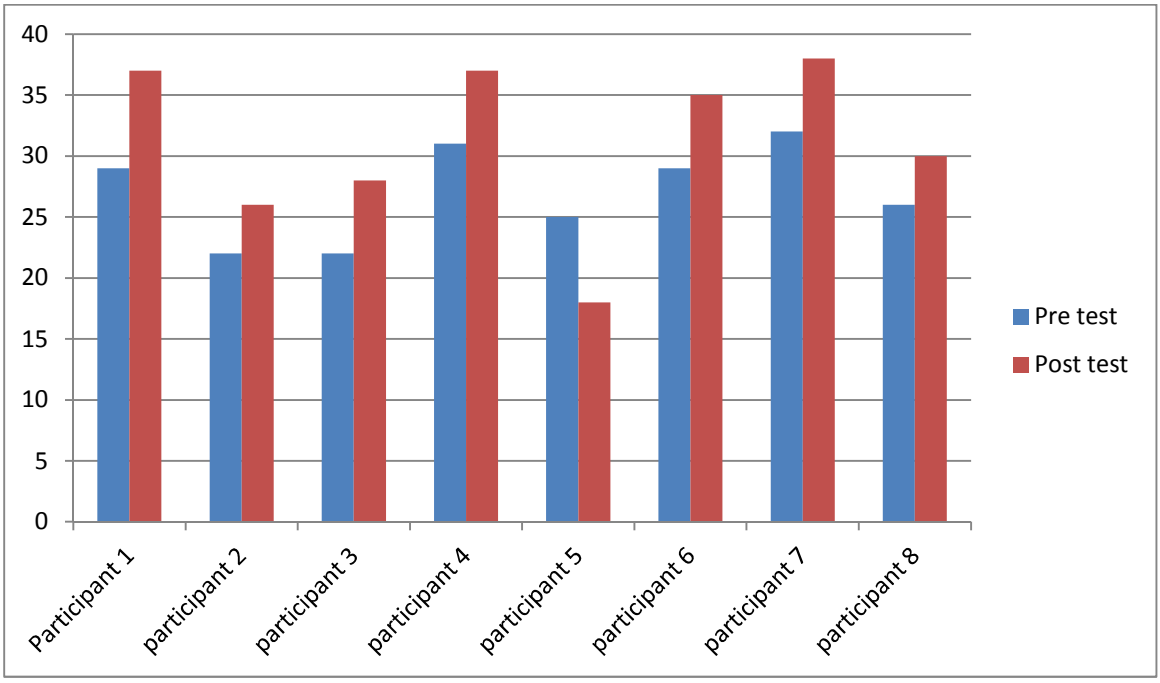
Bar graph 2 that compares the raw scores from the pre- and post-test results of the Reading Comprehension sub-test of the Stanford Diagnostic Reading tests series.



X axis shows the learner participants on the programme

Y axis shows the raw scores form the Reading Comprehension sub-test (out of 60)

Bar graph 3 that compares the raw scores from the pre- and post-test results of the Auditory Vocabulary sub-test of the Stanford Diagnostic Reading tests series



X axis shows the learner participants on the programme

Y axis shows the raw scores from the Auditory Vocabulary sub-test out of 40

4.6 Analysis of results

This sub-section provided a detailed analysis of the results of this study by considering each research question of the project with the corresponding interview data. Each research question was presented, with the relevant data from the quantitative data analysis of the SDRT pre- and post-tests and the qualitative data from the semi-structured teacher interviews considered through an ethnographic narrative process. All evidence was then consolidated from the data sources in order for a reliable and credible argument to emerge. This discussion takes place in chapter five. (For interview questions, see Appendix 10).

Teachers' perceptions about the progress of a learner or their opinion of the critical success factors of an aspect of the mediated learning support programme cannot be regarded as a statement of objective certainty. As with observations recorded in the researcher's journal there existed the possibility that the teachers' comments were subjective opinions and in some cases the reliability of the information needed to be questioned. This is an observation that needed to be taken very seriously as the teachers' opinions could have been influenced by their own bias for their teaching methodology, relationship with the participant learners and mental constructs. Existing professional relationships that existed between the researcher and the teachers also needed to be considered. These limitations of the reliability of the data were why teacher comments were triangulated with other data sources that were gathered.

4.6.1 The first research sub-question stated: Will educators and the mediator observe an improvement in literacy skills reflected in the learners' class activities over a six month period?

In order to critically evaluate this question I have presented and discussed evidence from the semi-structured interviews with the teacher participants that were conducted at the conclusion of the study. McMillan and Schumacher (2010) describe the process of how coding from the analysis of this data reveals categories and then relevant themes that discuss and comment on the individual participants and also the whole group in general. I have selected various relevant and specific excerpts from this coding process of the transcribed recordings of the interviews which both support observed literacy skill development attributed to the mediated programme and those that do not. Where an individual learner participant was discussed by a teacher participant I have triangulated evidence from other data sources to provide a more rigorous and thorough analysis of the critical success factors commented upon, in line with Yin's (2003) explanation of the 'converging lines of enquiry'. The main supporting data that

I have utilized in this discussion comes from the results of the quantitative analysis of the pre- and post-test scores from the standardized tests of the SDRT, (see graphs 1, 2, and 3).

Theme four: Critical success factors linked to literacy ability improvements directly linked to the IATLI.

This theme was directly relevant and of critical importance to this case-study project. The main objective of the IATLI mediated programme and the critical outcomes defined in the IATLI curriculum was the improvement of literacy ability which included; reading comprehension skills, phonetic analysis, auditory vocabulary, tracking ability, vocabulary, creative writing skills and the meaning of words integrated into the learners known schema on a cognitive level (Harcombe, 2001).

This project investigated whether the IATLI could be successfully integrated into the independent school environment. If the integration of the IATLI achieved any of the critical success factors then the analysis of the results needed to show that there was a significant improvement in the literacy ability of the learners who participated in this study. The children who were selected for the programme were all evaluated through the process of educational and psychological testing, which also included parent and learner interviews using the EGO. This was necessary to select suitable learner participants who were struggling with the academic demands at school as a result of barriers to learning directly associated with weaknesses in cognitive functioning and literacy ability.

The information gathered through the EGO process becomes significant when trying to ascertain the merit and reliability of a claim related to the success of the IATLI programme. The results from testing, the commentary from the semi-structured interviews and the information from the researcher's journal cannot be viewed in isolation from the individual learners' environmental circumstances and internal dynamics that include temperament, personality and self-esteem. (See appendices 1 through 8)

Sub-theme one: Observed literary improvements

The teachers who participated in this study were asked in the semi-structured interviews about their observations regarding literacy improvements in the children who participated in the mediated IATLI programme. The teachers were asked at the inception of the project to observe the participants' class tests, creative writing exercises, speech writing, reading, prepared and unprepared speaking, written content in projects and use of language and

meaningful adjectives when speaking and writing. Comments by the teachers on the improvements, or lack thereof, in these defined, concrete areas associated with use of literacy skills have been used as part of the evaluation of the literacy development of the learner participants.

> *T1:"I definitely have. I mean, again I use (P7), I don't know why he sticks in my mind, he's not coping like Einstein, but he's coping, we've seen that progression. We've seen it. I mean I don't think, if it hadn't been for you, he would ever have been able to stay here."*

The EGO data indicated that P7 had attended a remedial school and that he had been receiving learning support since he was in grade one. (See appendix 7). This excerpt indicated that he was coping with the academic demands in class and that progression had been noted. According to T1, P7's ability to cope with the academic programme was directly related to his participation in the IATLI programme. It needs to be considered that he was a diligent learner with a very supportive family, which meant that independent variables could not be discounted. These included natural maturation, the teacher's ability to differentiate lesson content and teaching styles in accordance with his simultaneous processing ability, and the support he had received from his home environment. P7 was a learner who had conscientiously attended the learning support sessions and displayed steady progress. He always displayed a positive attitude when attending the sessions and was eager to develop skills and apply them in the class.

P7 showed a statistically significant improvement between his pre- and post-test scores for Reading Comprehension (43 to 46), in the Auditory Vocabulary sub-test (24 to 29 raw score) and in the Phonetic Analysis sub-test (16 to 29, raw score). These scores indicate that according to the SDRT standardised tests P7 was functioning at the correct age and grade level. The ability to have phonetic processing skills and auditory vocabulary ability levels that are appropriate according to the learner's chronological age indicated that he was able to effectively decode information that was text based, or that was presented verbally for his grade level. This SDRT sub-test quantitative data supported the feedback from T1 who indicated that P7 had made progress with his literacy skills.

As mentioned, the EGO analysis showed that P7 had simultaneous processing strengths and weak successive processing ability. This learning barrier was evident when he had to attempt work that required attention to detail, good tracking skills and summarisation skills, as he would not perform adequately in these tasks. However this particular teacher made her

lessons and the lesson content meaning-based, and effectively linked new content to information and vocabulary already internalised in this learner's known schema. It was reported and recorded in the researcher's journal that her lessons were usually topical and appealed to the interests of the learners. This set of observations indicates that the teaching environment and the teacher's input cannot be discounted as contributing factors/causal variables that led to the literacy skill improvements observed in the data.

> *T5: "He has moved from being a kind of mid-30s to 40%-type of kid, to somebody who is now getting in the 50's to 60's quite regularly and on one or two occasions has got into the 70's. The big difference in his work is the comprehension value that he is now pulling out of it rather than straight regurgitation."*

T5 was referring to the progress of P2 who had a supportive family conducive to effective learning. (See appendix 2). What was significant from this excerpt was the comment which stated that the big difference observed was in the learner's comprehension ability which indicated that he was able to express more meaning through his interaction with text. This literacy skill improvement was supported by the quantitative results from the pre- and post-testing results from the Reading Comprehension sub-test of the SDRT. The results showed a statistically significant improvement in P2's scores; 34 to 45, raw scores for the Reading Comprehension sub-test; 14 to 14, raw scores for the Phonetic Analysis sub-test; and 22 to 26, raw scores for the Auditory Vocabulary sub-test. This excerpt supports Skuy's (1996) description of the cognitive learning strategy of 'transcendence' of elaboration of literacy skills of 'accurate definition of a problem', ability to use inferential-hypothetical thinking and output literacy skills of mature communication modalities have possibly been internalised.

Both these sets of data support the fact that P2 had improved his literacy ability and could access some of the comprehension content of his lessons, where previously EGO analysis suggested that he could not. However, we also need to consider the ecosystemic factors from the EGO analysis as mitigating evidence that supports this learner's academic improvement. The EGO analysis showed that this learner came from a very caring and stable home where both parents contributed to his upbringing. He had a balanced lifestyle that included exercise and cultural activities. P2 was also a member of the chess club which pointed to an enjoyment for thinking and strategising, linked to active metacognition. His parents were financially secure; P2 was sociable, with a good general knowledge, an easy-going temperament and a strong group of friends, although he did take some time to develop these friendships. (See appendix 2). All these independent variables are factors that needed to be

considered as having played a positive, causal role in the improvement of this learner's literacy ability. It is also necessary to mention that T5 had developed a strong working relationship with P2 and that she was experienced and committed to differentiation and 'goodness of fit' practices.

> *T6: "Um…I think I have noticed a difference in (P2) in terms of literacy, (P8), I think he still struggles but I think it might be a whole lot more than just literacy."*

In T6's opinion P8 was struggling to cope with the academic demands and that the barriers to learning were more than just based on poor literacy skills. T6's response was supported by the results from the EGO analysis which indicated that this learner had a background history of receiving learning support in primary school and was acting out with disruptive behaviour in class as a result of frustration and a reaction to low self-esteem. (See appendix 8). Psychological assessment reports (provided in the EGO analysis) revealed that P8 had barriers to learning associated with cognitive processing and working memory ability. Results from the pre- and post-assessment on the SDRT showed mixed results; Phonetic Analysis assessment raw scores improved from 12 to 17, Auditory Vocabulary improved from 20 to 23 and results from the Reading Comprehension tests revealed that participant eight's scores decreased (37 to 34, raw scores) in the sub-test assessments. However the scores did indicate that P8 was functioning at and above grade eight level. It was also noted that P8 had successive processing weaknesses which were evident when he was attempting 'tracking exercises' during IATLI sessions. Although there had been evidence from the researcher's journal that suggested that this learner enjoyed the mediated sessions where the content targeted his simultaneous learning style, no interview evidence pointed directly to transference of literacy skills learned on the programme to the classroom setting.

> *T7: "I can give you P4 in grade eight. His work, from someone who would barely answer and was giving me small amounts in Grade 7, that skill now is at a point where he is comfortable with what he has to write in his cycle tests."*

T7 had seen some improvement in the academic improvement and participation of this learner, as noted when she said that he had gone from someone who could barely answer questions to being able to be comfortable when writing cycle tests. This excerpt indicated that in this particular teacher's opinion there had been an improvement in P4's literacy ability, however this progress cannot be viewed in isolation from the ecosystemic factors that play such a vital role in school performance. P4's background history from the EGO highlighted that the mainstream school environment intimidated him when he joined the

school. It had been noted that he was lacking in confidence, his temperament showed him to be slow to warm, was withdrawn in class and battled to make friends. (See appendix 4). This information gathered from the EGO was supported by observations from the researcher's journal which indicated that progress was only evident in the mediated one-on-one sessions once a secure and trusting (goodness of fit) bond between the mediator and P4 had been established. This emotional security then allowed for the development and mediation of critical cognitive processing and literacy skills. This is supported by Daniels (2002) and Bruner (1966) who describe the mediated environment as an active and dynamic process, where a goodness of fit relationship is established and the necessity of this type of learning relationship in the scaffolding and internalization of cognitive learning strategies into the learner's schema.

It needs to be considered that P4's development in class participation could be linked to this learner's feeling of security and familiarity in the learning class environment mentioned above.

Quantitative scores from the pre- and post-testing data-set showed that P4 had improved in his test scores and was functioning at a grade- and age-appropriate level on the SDRT. Auditory Vocabulary scores improved from a raw score of 31 to a raw score of 37 between the pre- and post-tests on the SDRT. This indicated that his ability to process and understand the meaning of words in context had improved; this was a skill that was necessary when receiving written and aural cues, which included class discussions and explanations by the teacher, and also the reading of meaning-based, content relevant exercises.

> *T3: "I would say that generally we have seen an improvement in the kids, but it has so much to do with what is going on at home as well and I think we can only do so much as therapists and counsellors and teachers and the rest lies with the child and the parents."*

This excerpt pointed to the fact that although an improvement in academic development had been noticed as manifested by some of the learners it was far from conclusive that the progress could be directly linked to the IATLI programme. T3's opinion could be interpreted as saying that the learner participants' attitudes and temperament styles had a strong bearing on their ability to make progress at school. P3, for example, was taught by T3 and although evidence showed that he had made marginal progress he presented as a diligent learner, with a strong work ethic and a self-esteem that was very dependent on the situation or environment he found himself in. (See appendix 3). He also had concerned, educated and

supportive parents as evident in the EGO. This excerpt indicated that in T3's opinion the whole school-based support structure, including the school's efforts by providing dedicated teachers and the IATLI programme all played a critical role in the development of the literacy ability of these learners.

This discussion is further supported by the same teacher who goes on to say:

> *T3: "I have seen incredible results from children who have been on this programme, I have also seen appalling results, but this is just where the family is not there or the emotional trauma is too great so that outweighs what you are doing."*

T3 is referring specifically to the fact that one of the participants, P4 had no real contact based relationship with his father and his mother was not a part of his life for much of his primary school years. (See appendix 4). P4 had not achieved adequately as far as literacy and academic progress was concerned in T3's classes. P4 had not engaged actively with most aspects of the school's support structures. During learning support sessions he completed all activities and showed progress during the mediated sessions, although there was minimal evidence of him translating any of his performance in mediated sessions into the classroom learning environment, (with the exception of T7). These two excerpts from T3 both indicate that in her opinion the independent variables that include inter- and intra-psychological aspects including motivation, self-worth and temperament, and external factors that include home support structures and nature of relationships need to be considered when coming to conclusions about the critical success factor of literacy improvements ascribed to the running of the IATLI programme. This argument is supported by Bronfenbrenner (1977) who described how the different interacting systems, particularly microsystems and exosystems have a profound positive and negative effect on a learner's development.

T5 also indicated that she had not really seen any change in the literacy ability of the learners on the programme.

> *T5: "...very honestly, very minimal change. It almost appears as though what the kids are learning on the support programme is stuff which they are keeping separate and divorced from applying in the subjects that I am teaching."*

According to T5 the literacy skills learned on the programme had not been transcended or bridged from the mediated sessions into the classroom. Evidence showed that the children referred to by T5 in this excerpt had all shown certain amounts of progress during mediated sessions. However, they had not used the literacy strategies learned in the mediated sessions in the classroom setting. All the learner participants were taught by this teacher (refer to

table 2) but in her opinion none of them had been able to transcend or bridge their difficulties and transfer this improved literacy skill-set into the analysis of content-based tasks in the Life Orientation lessons.

Sub-theme two: Application of literacy ability

The second sub-theme investigated evidence of the actual application of literacy ability in the academic curriculum. The application of literacy skills in authentic settings was necessary when evaluating whether the participant learners' literacy ability had improved. The concept of academic performance was also discussed with reference to inclusive education later in this chapter.

This sub-theme was very similar to sub-theme one discussed previously in this chapter, but focussed more closely on the application of the skills by the learner participants in the academic curriculum. The critical success of the IATLI programme from the school's perspective was whether the literacy skills that were mediated to the participants translated into some level of academic success in the short term. A possible further study might incorporate a longitudinal aspect on a larger time frame, where a cohort of learners together with a control group could have their literacy development tracked over a four-year period. This was beyond the scope of this study. However, in the six months that the researcher conducted the participatory action research it can be argued that there was sufficient time to identify whether any of the skills mediated to the learners were used in authentic curriculum based studies.

Orientating information:

In the semi-structured, taped interviews with the participant teachers they were asked to discuss whether the improved literacy skills (if any) were actually applied to academic pursuits in their teaching subject/learning area. The interviews were conducted at the conclusion of this participatory action research project.

> *T6: "For me it's difficult to monitor the reading, but with the writing which is one of the outcomes, I have seen an improvement (in P1)".*

This teacher observed an improvement in the writing ability of P1. In this particular context the teacher was referring to this learner's improved ability to express himself through writing. This included improved logical processing skill showing story development in creative

writing, use of vocabulary, meaningful adjectives and the use of more complex graphemes and syntax.

P1 displayed an improvement in his scores from the pre- and post-testing data from the SDRT. His scores from the Auditory Vocabulary sub-test showed that he improved from 29/40 to 37/40. These results indicated that P1 was functioning above his age and grade level for this particular sub-test test. The Auditory Vocabulary sub-test provided us with an indication of a learner's ability to complete sentences coherently, understand and apply vocabulary in a meaningful way, express ideas effectively and articulate meaning through written tasks. The results from the Reading Comprehension sub-test of the SDRT also correlated positively with this excerpt that noted an observed reading improvement. Raw scores from the SDRT Reading Comprehension sub-test improved from 21/60 to 47/60 which indicated that over the six month period this learner progressed from being below grade and age-level to being age- and grade-appropriate. An improvement in comprehension ability translated to a better understanding of the meaning in text and made written responses to questions more logical and relevant. Better understanding of an aspect of the curriculum led to meaningful responses and better inferential interpretations in narrative and descriptive written tasks, which formed a large part of the body of work done in this teacher's History class.

Observations from the mediated support sessions, recorded in the researcher's journal confirmed this observation made in this excerpt as progress was noted in 'top-down', meaning-based tasks, particularly the progress recorded from the theme-based 'book writing and publishing' task.

The EGO analysis revealed that this learner came from a very disciplined home where structures were in place that enabled him to apply what he had learned through structured mediated activities. P1's mother was always very proactive in replicating IATLI style tasks at home with her child and this needed to be considered as a factor that had a direct influence on the observed writing improvements. It needs to be mentioned that the home environment was not always conducive to effective learning. The EGO revealed that P1's father was verbally abusive and dictatorial, which had a negative effect on P1's ability to enjoy the home part of his educational experience. This negative power relation was further compounded by the learner's 'slow to warm' temperament and his observed and reported high levels of anxiety. (See Appendix 1).

Although the data indicated that P1 had shown literacy development and learning skill development over the six month period, it cannot be assumed that the IATLI programme was predominantly responsible for this observed improvement. One assumption from the data that can be made was that P1's participation on the programme was an enjoyable experience (as indicated directly by the learner in the researcher's journal). According to Feuerstein (1980), a mediated learning environment needed to be reciprocal where both the mediator and the participant needed to share an equal power relationship between each other. This was essential when developing a child's self-esteem and enjoyment for learning. When the teaching environment was not balanced and reciprocal, or there was a negative parental attitude towards learning, or poor 'best fit' to a temperament type, as in the case of P1's relationship with his father, these negative adult pressures negated all of the fundamental psychological values that teaching should provide for children.

P1 was also evaluated and taught by T8 who was interviewed at the conclusion of the programme. She commented in response to being asked by the researcher "if she had observed or recorded any improvements in literacy ability over the six months that P1 was on the IATLI programme" by stating:

> *T8: "Yes I can, the one child (P1) started the year off getting in the 20s (%) for his tests and has upped it by about 20%. He is getting in the 40's (%) now and he is much more confident and I do think it is directly related to the programme."*

T8 had used class and cycle tests as a basis to evaluate the literacy and academic improvements made by P1. The fact that P1 was now passing tests whereas earlier in the year he had been well below the grade level was an indication that the IATLI programme was directly responsible for the observed improvement. T8's observation of class test score improvements can be positively linked to P1's improvements in the Reading Comprehension Test (SDRT) (mentioned in the previous extract discussion) which showed a significant positive improvement from 21/60 in the pre-test to 47/60 in the post-test. Results tables in the SDRT indicate that 47/60 was performing at ninth grade level, which was above the accepted norm.

P1's comments were transcribed into the researcher's journal and it was noted that he found the IATLI sessions interesting, enjoyable and fun and that he had a better understanding of the meaning in context when reading than before he came onto the programme. It was also noted that P1 came to see the researcher frequently, even when a therapy session was not scheduled, which indicated that the emotional component was a very important factor as he

thrived on the positive reinforcement which ameliorated the situational low self-esteem resulting from his relationship with his father.

Kagan, in Izard, Kagan and Zajonk (1984) explained how considerable research had shown that developmental changes in emotional states were directly related to interpersonal interactions. Research also indicates that there is a cognitive component in emotional development; emotions develop as the maturation of cognitive processes occurs with age and the acquisition of new knowledge. Knowledge is acquired directly from mediation from adults. This is supported by Engelbrecht, Kriegler and Booysen (1996) who state that cognitive development is dependent on the quality of the mediated learning experience. Mediation can only be effective if a 'goodness of fit' exists between the adult and the child. The EGO analysis indicated that this was not the case between P1 and his father. The data from the researcher's journal, however, indicated that there was a 'goodness of fit' and a reciprocal mediated learning environment between the researcher and this learner. It could therefore be argued that the IATLI had a direct, although possibly not exclusive, positive effect on the literacy improvement observed in the data presented here.

T10 was referring to P4 in this excerpt and was responding to the question: "Have you seen any improvements in the literacy ability of any of the learners on my programme that you teach?"

> *T10: (commenting on P4) "...so I must admit I haven't really seen any major change."*

P4 did not show any significant improvements between the pre- and post-test scores on the SDRT. Scores on the Phonetics Analysis sub-test showed that in the post-test P4 scored the same as the pre-test (26/30 to 26/30*)* and his scores in the Reading Comprehension sub-test showed some improvement between the pre- and post-tests (50/60 to 52/60. However all these scores indicated that this learner was functioning within and above the grade norms for these sub-tests. According to the SDRT test data alone P4 should have been able to access the literary content of the lessons however no evidence of progress was seen by T10 as described in this excerpt.

It was noted in the researcher's journal that P4 "*often felt tired and depressed, and felt that he did not fit in, and had no friends"*. P4 was very competent when engaging in the activities presented in the IATLI support sessions. (Researcher's journal indicated competence in reading with minimal hesitations, substitutions and word omissions. Story-writing showed

good use of learning strategies like 'self-monitoring' and 'transcendence' when engaging with thematic, meaning-based topics, and creative writing skills developed well in the 'book writing' activity. Tracking ability also showed development.)

Analysis of the EGO data revealed that P4 had emotional and social concerns, and a lack of active engagement in lesson situations that could have contributed to T10 reporting that he had not shown any noticeable improvements in literacy ability. (See Appendix 4). P4 came from a divorced home and his father was absent from his life most of the time; he was also an only child with a tendency to be withdrawn. He had seen a psychologist who diagnosed that he was depressed and unable to cope with his inter- and intrapersonal relationships. On Chess and Thomas's (1984) Temperament Clustering Table 'Personal/Social Flexibility:' P4 was noted as withdrawn and was reported as being extremely anxious, unable to adapt to new stimuli and he had a low 'Positive Aspect of Mood'. This temperament type is often associated with learners who struggle to cope in educational settings and develop meaningful relationships with teachers. P4's inability to develop a 'goodness of fit' relationship with T10 could have influenced her ability to be impartial and objective when commenting on P4's progress.

What emerged from the interview data discussed here was that there was conflicting evidence that both supported and rejected the proposed notion that the mediated IATLI programme was effective in improving the literacy ability of the eight participants. Nor was reliable data elicited from the interviewees that provided the researcher with conclusive and supportive evidence regarding the literacy skill improvements of all eight learners who participated on the programme.

4.6.2 Discussion of the data with regard to sub-question two which asked: is the IATLI programme enhancing the self-esteem of the target audience, in this case the participating grade eight learners?

Samuels (1977) refers to many studies in her book, *Enhancing Self-Concept in Early Childhood,* that all indicate that poor self-esteem and poor self-concept are directly related to low academic achievement. Campbell and Lavalee (1993) describe how self-esteem has a powerful and pervasive impact on human cognition, emotion and motivation. Skuy and Solomon's (1980) study shows that mediation of activities that enhance self-esteem in one-on-one mediated sessions proved to be successful in improving learner self-concept. The discussion that follows aims to critically analyse the data collected from this study according

to the critical success factors of the mediation of the IATLI and conclude whether improvements in self-esteem or confidence in the participants, if any, can be directly attributed to the mediated programme. This discussion will examine selected participants individually as the temperament and resilience of each learner as recorded in the EGO analysis for each learner, needs to be considered and contextualised for each piece of data analysed.

This discussion triangulates excerpts from the semi-structured interviews with the participant teachers, excerpts from the researcher's journal and information gathered from the EGO and parent feedback to show whether any evidence suggested that there had been an improvement in the self-esteem of any of the eight participant learners.

Theme one: Integration of learners on the programme into the mainstream classroom

This theme emerged from the semi-structured interviews with the teachers and was directly related to the ability of the eight learners to integrate subject matter and participate in their lessons. Children who develop their coping strategies and who find it more comfortable to interact socially generally find the classroom situation and the lesson content less stressful. The learners who were participating in the programme had been identified through an ecosystemic process. The information from school history, temperament, educational and psychological testing and parent interviews were all put together and analysed. This information often revealed that children who needed support found the mainstream classroom situation daunting and, depending on their temperament type, they either withdrew from the lessons or became distracted and acted out (Chess & Thomas, 1984). Such children were often those individuals who were in conflict with institutional systems most of the time, or were sent to psychiatrists who recommended medication like Ritalin, Conserta or Stratera.

What came through strongly from the literature and the observations recorded in the researcher's journal was that as learners developed the necessary cognitive learning strategies and literacy abilities, they demonstrated enhanced integration, both socially and academically into the classroom learning environment. If the learners from the IATLI programme, who were previously not integrating into the classroom setting started to feel more confident in class I could infer a positive link to the IATLI programme. There were mitigating limitations to this assumption though, as general increasing maturity, temperament type, individual teaching styles, teacher attention and other interventions could also have an influence on the integration of an individual learner into a classroom environment.

Sub theme one: Learner's self-esteem and confidence

If children develop their self-confidence, self-efficacy and self-esteem they often find that the classroom is a safe place to be, and an enriching and positively stimulating environment, where previously it could have been threatening, eliciting feelings of anxiety, where they felt alienated from the learning process. Studies have shown that high self-esteem of children is directly linked to positive academic performance (Phan, 2010; Campbell & Lavallee, 1993). The following excerpts were taken from undirected speech and quotes from the semi-structured interviews linked directly to the question of whether any direct improvements in self-esteem could be noted in learners who participated in the programme.

> *T7 "…so I think the programme has probably taught them (P2). I'm assuming it's the programme, to ask if they don't understand. So they participate and put up their hand and say "Please will you do that again Ma'am". Or whatever, which is very nice.*

T7 was referring directly to P2 in this excerpt, who was very withdrawn and unsure of himself in the learning environment at the beginning of the year. (See Appendix 2). He had never had the confidence to ask questions and he often became depressed and anxious at school. This was recorded by the researcher in the EGO analysis and the researcher's journal where P2 reported that he felt insecure and 'scared' to participate in lessons. The EGO analysis also showed that this learner had a 'slow to warm' temperament, withdrew from confrontational situations and had a nervous disposition. He had also attended a Montessori primary school where he had been in a class with only three other learners.

P2 became dependent on the mediated support programme for reinforcement and skill development. He was a very conscientious learner who became attached to the mediator for the positive reinforcement and reciprocity that the IATLI provided. This was evident and recorded in the researcher's journal where he said how much he enjoyed the work and the one-on-one sessions. The EGO also noted how involved and positive P2's mother was in his emotional and academic development; however, his mother reported (recorded in the researcher's journal) that the programme, in her opinion, had had the most significant influence on his self-esteem development over the duration of the mediated intervention.

T5 observations correlated with T7's opinions of P2, who, in her opinion, showed improved confidence and self-esteem:

> *T5: "P2 is one of these examples. He has just come together so beautifully and has developed hugely, and I do think it does contribute to what you have done so far."*

The EGO implied that P2 presented initially with a low self-esteem and the data presented infers that the mediated IATLI support programme could be linked to the improved self-confidence of this learner. It must be noted that other factors like the positive learning environment and his mother's positive input were also contributing factors.

In the excerpt below T8 was referring directly to P5 who initially gave up when attempting tasks. This excerpt indicated that P5 was more in control of his emotions and had developed confidence and more understanding of the meaning attached to tasks.

> *T8: "…the programme, maybe, it helps them to show them, you know what, it's not the end of the world, and, as I said earlier, they actually tend to push through and like just aim, kind of, for what they can achieve which is very good."*

Analysis of the EGO showed that intrapersonal factors were significant causal variables that needed to be considered for P5. (See Appendix 5). Although he was an extrovert and came across as confident and friendly, he was compensating for his fear of failure and his low self-esteem. P5 had been receiving remedial education since grade one, and spent grade two and three at a remedial school. It was revealed in the EGO that he gave up on tasks easily in grade seven when he felt that he could not understand or complete the tasks. P5 commented that he really enjoyed his mediated sessions and that he felt that what he had learned in his therapy sessions was helping him in class (recorded in the researcher's journal). T8's excerpt displayed a positive correlative relationship between the IATLI programme and improved self-efficacy. People with high self-efficacy goals and high self-esteem tend to adopt 'mastery' and 'performance approach' goals whereas learners with low perceived competence tend to adopt 'performance-avoidance goals' (Bandura, 1997; Elliott & Harackiewicz, 1996). This statement from the literature was supported by T8 who inferred that P5 would tend to "push through" and aim for "what they (he) can achieve." This was clear evidence of a development of 'performance approach goals' rather than 'performance avoidance goals'.

> *T10: Commenting on levels of confidence: "Yes, I think so. Because then at least you can see where they are at and they've probably got more confidence talking to one person than in front of a whole class. So I think that that (IATLI programme) definitely does help."*

T10 is referring to more than one of the learners (P1, P3 andP7). This general comment explains how these participants who have had the one-on-one mediation have developed their communication skills and felt more confident in social learning settings.

T10 had seen a general improvement in the confidence of the learners on my programme. This could be corroborated by the evidence collected in the researcher's journal, P7 was initially quiet and passive during IATLI support sessions, but as the programme progressed he became confident and self-assured when completing tasks and was also proactive in dictating the structure and activities of the sessions.

This observed improvement in the confidence and self-esteem of these learner participants could not be solely attributed to their participation on the IATLI programme; for many children the first term of grade eight was emotionally challenging but as they developed familiarity with the system and began to develop peer relationships they gained confidence. What was significant was that the EGO indicated that P1 and P3 had a history of having low self-esteem in primary school, and they were withdrawn and unengaged during lessons.

> *T12:* "*Gradually he changed (P8). He is a different person now*"
>
> *T12: "…Absolutely. And I think that self-esteem is so much more important than any kind of assessment mark that you might get in school. So I think that if you can build up their self esteem, I really believe it's the key to success."*

These two excerpts referred to P8 who was initially seen by his teachers as a discipline problem as he compensated for his fear of academic failure and alienation from the lessons due to not understanding the content delivered by acting out. This learner communicated well, but would distract the class and get aggressive with the teachers when they challenged him on work-related questions, with his behaviour or conduct with the other learners. This data was revealed through the EGO analysis where his discipline record at school, his confrontational nature, his 'quick to anger' temperament and his low self-esteem were all recorded as pathological intrapersonal attributes. (See Appendix 8).

After the six-month mediated IATLI programme it was observed that P8 felt more confident and self-assured in class, and had transferred his newly found self-confidence into classroom situations. The researcher's journal reported: "*P8 said he enjoyed the sessions and felt that he could actually do the work that was asked of him in class"*. It can be assumed that there was a direct relationship between the mediated programme and the improvement in P8's behaviour and self-esteem.

T10 responded to being asked in the interviews whether she could comment on any evidence of the participants fitting in and coping with lessons as a result of their participation on the programme.

T10: "It seems to be (P3) I mean he is very attentive. So that's the only thing that I can see. He tries his hardest, he tries his best.

Donald et al. (2011) describes the relationship between improved self-confidence and an improved sense of 'agency' in a learner where he is personally and actively engaged, where he takes initiative and control. This was evident in this excerpt as T10 described the improved application and determination that she had witnessed in P3. This observation correlated with the observations recorded in the researcher's journal that described how P3 showed that he was task-orientated and determined to complete his activities. This observed "agency' and self-efficacy in P3's approach to class activities illustrated that there was a positive causal relationship between the reinforcement of P3's self-esteem conducted during IATLI sessions and the evidence of self-esteem enhancement in the classroom.

T6 made a general comment regarding the entire sample group when asked by the researcher if she saw a relationship between self-esteem and educational needs of the learners with regard to the necessity of mediated support programmes.

T6: "There is no two ways about it. They know they are not coping and they react either by not behaving properly or by not completing work because they feel insecure."

This comment implied that some level of support was necessary for learners who had a low self-esteem, because depending on their personality or temperament type they would usually have a negative reaction in learning situations that would have an adverse effect on their performance. This excerpt highlighted the need for mediated intervention programmes or other structures in place that addressed the concerns of low self-esteem in children. Her view supports the literature that implies that negative behaviour exhibited in class settings has a causal link to insecurity and an inability to cope with the academic demands of the lesson. Donald et al. (2011) describe how low-self-esteem has a negative impact on the development of positive 'agency'. This excerpt directly linked the IATLI support programme to a general improvement of the self-esteem, as noticed in class, of the participant learners.

Inclusion and exclusion linked to self-esteem

The researcher asked the teachers: "Do you see any relationship between special educational needs and support and a learner's self-esteem or personal self-image".

T1 responded: "... So it's difficult because it's in school (IATLI support) it's in-house so the other kids know they are going to (the researcher) ...so they try and down-play

it and sometimes they'll compensate with silly behaviour in class and messing around being the 'main man' ...I think they find it a challenge."

T1 later responded: "I have no negatives except their self-esteem and their embarrassment because it's teenagers..."

These two excerpts raised the issue of the benefits of the IATLI programme (cognitive and literacy benefits) and its method of integration into the school programmes against the concern that as the programme attempted to enhance inclusive education by making learning skills more accessible, it was actually excluding learners and singling them out for 'special attention.' This concern of exclusion and 'labelling' was seen by T1 to be further compounded by the fact that this research study was focussed on teenagers. Teenagers, depending on temperament and other related environmental and social issues, are usually more sensitive and concerned with how they are perceived by their peers.

As a result, the differentiated treatment that was directed their way through the programme's delivery method could have increased their anxiety and actually had a negative effect on the development of their self-esteem. Lund and Norwich (2002) described the tensions that exist between the individuals and the agencies when they aimed to increase participation in mainstream settings as the 'dilemmas of difference.' This is where the desire to include learners into programmes to support them to help facilitate their inclusion in the mainstream classroom could actually alienate them further. Fleming (2010) argued that participatory support programmes have been shown to have a positive impact on learners' self-esteem, particularly if that research leads to positive change. It can be argued that the very nature of a support programme would always be perceived by some in a negative way, but research indicates that if positive changes occur (literacy and cognitive learning skill enhancement) then improvements in a learner's self-esteem are possible.

Sub-theme two: Social interaction and integration

Learners who were integrated easily with their peers and interacted with the teacher and the other students in a relaxed and confident manner usually found that the learning experience was less stressful and learning then became more accessible and enjoyable. Learners who had barriers to learning often felt alienated, defensive and anxious in mainstream settings. The learners on this programme all admitted in their initial interview to feeling stressed and concerned with the social and academic challenges presented at school. Some participants

even went so far as to say that they hated being at school because they felt that they had no control over what could happen on any given day.

Orientating information:

All these comments/excerpts came from the semi-structured interview process. The responses from teacher participants resulted from the discussion around the question of whether they had observed the children (participants) on my programme integrating and interacting more effectively since they had been attending mediated support sessions.

> *T11: "I have seen an improvement in him (P7). I have seen an improvement in P1 as well."*

This excerpt from T11 referred to class participation of P7 and P1. An improvement in a learner's participation in class is an indication of an increased feeling of confidence and ability to succeed. This excerpt indicated that both P1 and P7 initially felt alienated from the education process in T11's lessons, but the improvement noted showed that there was a contributing factor that assisted in developing the participation levels of these learners and this could be directly linked to an improvement in self-esteem. P1 and P7 both responded positively to the mediated IATLI sessions and it could be argued that a positive correlation existed between the mediated experience and the noted improvement discussed here.

> *T1: "The other children I'm finding fine. Um, very shy and reserved at first just in general or as a whole. I just found that that was the rule for all of them, but they are coming out of their space now, they are starting, in my subject anyway, starting to feel confident".*

T1 was referring to learners P3 and P7, (See Appendix 3 and 7). Evidence suggested that both of these participants entered the IATLI programme with low self-confidence, this was made evident in the parent and learner interview. The EGO analysis also reflected that they had few friends, remained quiet in class and did not engage with other learners voluntarily in group-work activities. It was clear that their tendency to withdraw from social interactions was a result of temperament style, previous negative experiences and lack of confidence in classroom settings. A combination of these factors resulted in their lesson participation being minimal. T1 reported that they *"were starting to feel confident"* This excerpt indicated that a positive change had been noted in the participation and integration of these two learners in class contexts.

It is significant that both of these learners had similar temperaments and both showed progress in terms of self-confidence and participation. (See Appendices 3 and7). Daniels (2002) discussed how the 'scaffolding' put in place by a mediated learning environment, as was provided for P3 and P7 in the IATLI programme, plays a critical role in developing a learner's self-esteem. The mediated relationship also allows for a positive environment in which the learner interacts and gains confidence in interactive circumstances. In this case it could be assumed that the one-on-one mediated sessions conducted as part of this study had a positive role to play in the bridging and internalization of intrapersonal aspects like the feelings of confidence reported here. However the IATLI programme cannot be seen to be exclusively responsible for these improvements discussed. T1 had been trained in remedial education and was very supportive of inclusive education practices. She had also developed an exceptional rapport 'goodness of fit' with both of the learners referred to here. P3 and P7 both had very supportive parent role models in their lives whose impact as a positive agent of change was also a contributing causal variable that could not be discounted.

In the following excerpt T6 was responding to the question of whether she noticed any link between the mediated programme and self-esteem. Her comment was forthcoming from her observations of P4.

> *T6: "I think again with (P4) he was very withdrawn and insecure (initially at the beginning of the year) so I have definitely noticed an improvement in his confidence which always results in better outcomes".*

What T6 was referring to in this excerpt supports the results from the EGO analysis which indicated prior to the inception of the IATLI programme that P4 had not been able to establish a 'goodness of fit' relationship with his teachers. He was also insecure and felt alienated from the school and the classroom environment. However in T6's class, evidence of his confidence improving was described as a positive outcome of his participation on the mediated IATLI programme. This observation by T6 needed to be seen in the context of other variables that could have resulted in this observed positive outcome of improved confidence. T6 had worked at developing a positive working relationship with P4 and had ensured that his simultaneous processing style of learning was accommodated in class (through discussion with the mediator).

There was little other evidence from the semi-structured interviews to suggest that P4 had improved his confidence and self-esteem as a result of his participation on the programme

and this could be linked to the wider ecosystemic factors that were contributing to him not participating in class and engaging actively in activities. (See Appendix 4). These included his diagnosis of depression, his temperament type and his difficult family situation. However when a 'goodness of fit' relationship was established with a teacher, a different outcome was evident, as appeared to be the case with T6. This explained how the improvements in self-esteem or a confidence displayed cannot be totally allied to the IATLI programme in isolation of other causal variables..

> *T11: "I don't know how you work with them (P1) but when they come back (from a mediated session) they are able to ask questions."*

This extract directly linked the work done on the IATLI sessions to an improvement in the participation and interaction of P1 in the classroom by him asking more questions. T11 saw a direct transfer of the mediated cognitive learning skill described by Skuy (1996) as 'competence', if a learner is to succeed in an academic environment they need a tangible reason to feel that that success is possible. The mediated cognitive learning strategies were not internalised in isolation, a person cannot feel confident and competent if they cannot see, and experience an improvement in their ability to learn and process the content of what they are being taught. Evidence showed that P1 entered the programme with a low self-confidence and often withdrew from participating in classroom interactions. (See Appendix 1).

> *T2: "… I think we can only do so much as therapists and counsellors and teachers and the rest lies with the child and their parents." (Comment directed to P4's progress).*

As discussed previously in this chapter, the EGO analysis revealed that P4 had an absent father whose company and input were vital to his emotional wellbeing. (See Appendix 4). This learner did not have close, established friendships and had a history of being reclusive and withdrawn at home and at school. Socio-economic factors meant that this learner had to move from the remedial school in Cape Town where it was reported that he was relatively happy and secure as a result of the stability provided. He had not adjusted to the move to Johannesburg. The EGO analysis supported the excerpt provided by T2 who believed that the development of a learner's self-esteem or confidence was multifaceted and relied on more than school-based interventions or potential revealed through testing. Development of self-esteem is also dependent on intrapersonal and interpersonal characteristics that can hinder or promote progress.

T3: "Socially, I would say they do do well because it's like integrating them into a group where they don't feel pressurised if it's that sort of situation, so we are not putting them on the spot, where they suddenly have got to speak with everybody else. They get given their bit and they are contributing. Ja, I think they do well socially …. It is effective…"

Leading up to this interview T3 was very interested in collaborative learning as a key to inclusive education practice in the classroom. This excerpt described how T3 saw a critical success factor of the programme to be how the improved confidence and language-use ability had led to the learner participants in general becoming more involved in the lessons. T3 was referring specifically to P1, P2 and P6, and in her opinion the literacy improvements noted from the IATLI programme for each of these learners (See graphs of pre- and post-SDRT sub-test scores) had given these learners the confidence to make more meaningful contributions to group-work scenarios with their peers. However she still felt it was essential that the educator's teaching style needed to complement the learning style of the individual and as they gained in confidence the level of challenge could be increased in classroom settings. This was evident in T3's response where she referred to the teacher considering how to approach these learners by not placing them in pressurized situations that could raise their anxiety.

T7: "But then I've got someone like P3, who just loves interacting with the class. He is very comfortable with the fact that he's got to put in some input and often he is quite a talker unless I have to keep reminding him that someone else has to have a turn. So I think what you do, contributes a huge amount."

P3, who was referred to in the above excerpt, was very withdrawn from his peers in classroom settings in grade seven as revealed in the EGO. (See Appendix 3). As his confidence improved he started to express himself in class; this turn-around in attitude and participation could be attributed to many reasons, one of them being the confidence obtained from the one-on-one mediated IATLI sessions. Vygotsky, in Daniels (2002) described how every aspect of a learner's development appears twice; firstly at a social level through positive interactions and relationships with people and secondly on an intrapsychological level (metacognitive).

T11: "Yes I have I can think of P2 he used to be very passive and now he works hard, he asks questions and as I have said, self-confidence is very important, it does improve."

The EGO analysis indicated that although P2 had excellent parental support he still felt insecure about participation in mainstream class activities. (See Appendix 2). He had spent his primary school years in a small remedial school and was overwhelmed by the challenges that this school (research site) placed on him. His temperament type according to the Temperament Clustering Table developed by Chess and Thomas (1994) indicated that he had a tendency to withdraw from threats and was slow to warm in social circumstances. T11 indicated that she had witnessed a transformation in his integration and participation; she alluded to him no longer being a passive participant but rather someone who was involved in the dynamics and social aspects of her lessons. T11 also mentioned that he had developed an acceptable work ethic that was directed by his own internal locus of control. This could be linked directly to Feuerstein's (1980) mediated cognitive strategies of 'competence' and 'self-change'. These observations infer, that it can be argued, that the mediated IATLI programme had a positive influence on this learning skill development.

These responses showed that in some examples the learners on the programme were beginning to feel that they belonged in the classroom environment and could make a positive contribution. This could be deduced from the answers given by T1 who noted that the learners were finding their space. T2 described how, in her opinion, the IATLI programme developed the social interactional abilities of some of the learners.

> *T11: "Yes I can, every time you've (researcher) worked with them (participants) before the cycle test, their marks were even better than if they haven't been with you. I can always tell that they haven't been with you."*

In this excerpt T11 was relaying her observations that as each participant attended the mediated IATLI sessions there was an immediate and observable positive change in their performance ability in test situations. This excerpt implied that the one-on-one mediated sessions provided the participants with the confidence and self-belief required to perform in test circumstances. Research has shown that high anxiety levels can have a negative effect on test performance, whereas positive self-confidence and self-esteem allow for improved logical processing and improved achievement (Phan, 2010). T11's comment was only an observation and therefore this excerpt cannot imply that the mediated IATLI programme was solely responsible for the development of confidence in these learners. However it can be argued that the individual attention provided and the skill development implicit in the design of the mediated IATLI programme had a positive impact, to varying degrees on all eight participants who participated in this case study.

Before the mediated sessions were put in place some of the participants felt alienated from the education process and, depending on their temperament, some of them just withdrew from the lessons, while others (P8) acted out negatively as a defence mechanism to avoid being singled out or have their weaknesses focussed upon. For some learners their cognitive barriers to learning meant that the lesson content and the literacy components in particular were inaccessible. Their lack of integration, either by being disruptive and subsequently ignored or shunned by the other learners, or by being withdrawn and then appearing to be 'day-dreaming', inattentive or unfocused on the given task meant that these participants were often diagnosed as having medical conditions diagnosed on a deficit model. The EGO analysis revealed that in all cases the learners on the programme had been referred to psychiatrists, psychologists or remedial therapists for assessment and in some cases Ritalin and other psychotropic medication had been prescribed or suggested for the participants. The aim was to improve concentration and other diagnosed conditions including ADD and ADHD. (For EGO information see Appendices 1 – 8).

The excerpts that were presented here show that the majority of the participants, to some extent, who participated on the mediated IATLI programme, had grown in self-esteem, confidence and their ability to socially integrate into classroom learning situations had improved. They were more willing to partake in discussion and to interact with their peers. Improvements in confidence, self-esteem and self-efficacy were not noted for all the learners who participated on the programme, P4 was one notable example of a participant whose withdrawn and passive approach and apparent lack of self-esteem remained constant.

4.6.3 Research sub-question three asked: Will quantitative and qualitative evidence show that the participant learners on the programme internalised the cognitive learning strategies outlined by the outcomes of the IATLI programme?

Wong, in McKeough and Lupart (1991) found that metacognitive learning strategies are intricately involved in literacy acquisition, particularly the writing process. Wong argues that strategies used most often by competent writers are decision making, planning, self-regulation and revision. Feuerstein (1980) describes the acquisition of the cognitive learning strategies, outlined in the MLE, of transcendence, self-monitoring/regulation and bridging of meaning between known and unknown schema as necessary tools that need to be internalised and transferred to the concrete learning experiences for effective learning/creative writing development to take place. The metacognitive learning strategy of prediction is linked to

integrated 'top-down' methods of literacy instruction utilised in the IATLI instruction where thematic, meaning-based tasks allow for information bridging, transcendence of information into mental schema when completing creative writing activities (text-based activity). When a person has the ability to make predictions and use contextual cues when writing or reading this is a clear reflection that a learner has a cognitive understanding of what is presented.

This discussion clearly indicated that learners who display the above mentioned metacognitive learning strategies in formal and informal learning environments had the ability to be active learners who could be effective, lifelong learners who gained from educational experiences.

The EGO information collected at the inception of the case study revealed that all the learners who were admitted onto the IATLI programme presented to some degree as having poorly developed metacognitive learning strategies as described by Skuy (1996). This was revealed through information presented by teachers, parents, informal reading and writing assessments, and from analysis of the scores of the answers to the inferential-type questions in the Reading Comprehension sub-test of the SDRT and also the Auditory Vocabulary sub-test. Weaknesses included poor successive and simultaneous processing abilities, self-monitoring, organisational and self-regulation skills, bridging of meaning, and planning strategies relating to both the writing process and general organisational skills. (The EGO analysis revealed a link between underdeveloped metacognitive learning strategies in literacy development and other aspects of the learners' functioning).

The aim of this section was to present the evidence from the data collected through the semi-structured interviews with the teachers and triangulate it with data from the formal testing from the SDRT and the researcher's journal, to ascertain whether any of the metacognitive learning strategies described as outcomes of the IATLI process had been internalised by any of the eight learners who participated in this case study. (Where possible I have focused on teacher responses to individual learners, as generalisations are difficult to quantify with this small sample group, and each learner had a different experience from their participation on the IATLI programme. However, in the context of the research question, commentary on the general perceptions of the level to which the programme was seen to be directly responsible for development or lack of development of cognitive learning strategies cannot be ignored).

Theme five: Critical success factors of acquired mediated learning strategies

As mentioned in the literature, (Harcombe, 2001), the IATLI aims to simultaneously integrate the development of literacy skills with cognitive learning strategies in line with the learning strategies mediated as part of Feuerstein's MLE in Skuy (1996). These cognitive learning strategies include transcendence of learned material from one domain to another, or from one learning situation to another, self-regulation and control of behaviour, meaning, self-change, competence, intentionality and reciprocity, sharing, goal planning, individuation and the bridging of information from being unknown information into known cognitive schema. Even if the learner participants are not necessarily improving their academic grades, is there any evidence to indicate that the above mentioned skills are used in other educational settings? It needs to be mentioned that the researcher/programme facilitator conducted orientation sessions with the teachers at the inception of the programme to familiarise them with Feuerstein's MLE, and metacognitive learning strategies.

The teachers were asked whether they had seen any concrete evidence in the form of academic work, including formal and informal activities, or class participation that indicated application of learning strategies; this also incorporated any evidence of applied skills that included tracking or evidence of planning when writing essays, as this could indicate improved self-regulatory strategies.

Sub-theme one: Evidence of acquired learning strategies transcended by the participant (learner) from the mediated support sessions into the classroom setting

> *T2: "I would say that I think the biggest thing from your programme that does help is helping them to be more organised."*

This teacher had teaching interactions with all the learners on the programme during the academic week, as she taught History which was a compulsory subject in the IEB curriculum at grade eight' level. Her comment was a general observation based on her experiences related to improved understanding of the meaning of content in the subject, and her observations of general organization (goal planning) and self-regulatory ability of the learners. T2 was of the opinion that there was a direct link between the development of organizational skills and learners' participation on the IATLI programme, however this could also be the result of other related causal variables including a natural maturation and a 'settling down' as the grade eight year progressed.

T3: "Yes, I have. I think it's very effective. Like P7 He's becoming a lot more organised which is helping him".

This teacher had had eleven years of experience dealing with children who had barriers to learning and who subsequently struggled to succeed in her class. She taught Biology and the syllabus was very demanding, and assumed that certain skills and subject specific vocabulary were in place. She mentioned that one of the saddest things that she had noticed over the years was the large amount of children who dropped out of the educational system altogether. In her opinion my programme offered learning skills that, in some cases, provided learners with the opportunity to achieve academically at school.

The EGO revealed that P7 had a history of being disorganized with his school work, and he showed very little evidence of any self-monitoring, intentionality, or goal planning when developing an essay plan or executing a written piece. (See Appendix 7). P7 was also a weak successive processor who did not attempt to examine the detail when summarising the information of a comprehension activity, and thoughts and meaning were not portrayed in a logical sequence, nor was this sequence checked clearly indicating that self-regulation strategies were not in place. (This information was made available by P7's father during the parent/mediator interview, pre-testing from the SDRT Reading Comprehension sub-test, and the informal, 20 minute creative writing exercise).

This excerpt showed that T3 had observed an improvement in P7's organizational ability. This was a direct reference to his organisation of thoughts and ideas when attempting written tasks, and general organisation through the evidence of P7's use of a homework diary and study plans for cycle tests. These observations could be linked to an improvement in the cognitive learning strategies of competence, self-regulation, goal planning and self-change (Skuy, 1996; Feuerstein, 1980).

Although evidence from the IATLI sessions did reveal that P7 had shown more attention to detail when attempting meaning-driven tasks as a result of actively linking unknown words to vocabulary in his known schema and the SDRT Reading Comprehension sub-test revealed that he improved (43 to 46) in the post test, I cannot discount other independent variables that could also have contributed to this improvement in cognitive strategy development. P7 had a very close relationship with his father who was committed to his son's development and spent time mentoring him every day. P7's father ran a successful business and was an expert communicator who was very open-minded to new ideas and methods that might facilitate

improvements in his child's ability to learn. P7's temperament was also conducive to the school learning environment, and his high 'positive aspect of mood' on Chess and Thomas's (1984) Temperament Clustering Table meant that he was positive and approachable which made his intrapersonal ability to learn new skills very accessible to teachers and anyone who mentored or mediated cognitive learning skills to him.

The following excerpt refers to P5's skill development where writing and speech planning is concerned. T6 taught this learner Life Orientation and had observed positive improvements in written and oral exercises.

> *T6: "I think (P5) is more aware of what his issues are and maybe he is a little bit more mature in terms of how he copes with his issues, but he is a little bit more aware of his own….that he's got to be involved in his own learning."*
>
> *"I have. I mean I've seen that they've taken stuff that they have had to learn or work with and they have specific ways in which they have obviously been shown how to do things, so I have seen an improvement. Maybe in approach and obviously it's a long-term process, but I have definitely seen an improvement, yes."*

T6 reported that P5 was demonstrating that he was more aware of his learning, and how he coped with his school work related issues and that he had shown specific ways of planning and self-regulating his work as he progressed with an activity. This indicated that P5 was aware of the methods and skills that were necessary for him to progress on literary tasks and that evidence existed that he was applying them. This ability to plan and self-regulate his progress while working were cognitive learning skills that were mediated to him while completing the activities prescribed by the IATLI learning support sessions. The fact that T6 observed this change in approach to P5's approach to writing tasks indicated to me that there was a successful bridging of mediated learning strategies from the one-on-one mediated IATLI sessions into classroom learning situations. T6 mentioned a sense of maturity and involvement in his own learning, this indicated that to some degree he had internalized the learning strategies of 'competence' and 'self-change' (Skuy, 1996).

The EGO analysis revealed that P5 was impulsive and hyperactive and it was reported by his father and mother that his biggest area of weakness was his compulsive nature and inability to stay focused on school-based tasks. (See Appendix 5). It is now evident that he was using mediated planning and self-regulatory strategies to stay on task in his English lessons, and T6 complimented the mediated IATLI programme as being directly responsible for this learning skill development.

T7: "(P4)….I think he's getting better and better at understanding the importance of organization. I think that that is attributed to your feeding into him and making him understand what's required."

"...which has been very effective and I mean, obviously, in Life Orientation, we teach that but they are the kind of kids that will kind of carry it through consistently and I think that's because they are coming to you and you are feeding that into them on a consistent basis and showing them that it is important to have that order. So those are the improvements I have seen in a way that they approach things in a different way to other kids. They understand the importance of making sure that things get done on time."

The EGO analysis showed that P4 was a passive and generally disinterested learner who displayed trends of depression and a lack of engagement socially and where learning was concerned. He was described as an anxious and withdrawn child who failed to engage with written tasks. (See Appendix 4). This feedback from T7 who taught P4 Life Orientation showed that the teacher had seen an improvement in self-monitoring and planning skills through the quality of work completed and those tasks were finished on time and that pre-planning was then in place to ensure that those tasks were completed within defined parameters. This excerpt supported the accretion that P4 had acquired and internalised Feuerstein's cognitive learning strategies of 'self-change', 'goal planning' and 'competence' to some level higher than what was previously evident before his participation in the mediated IATLI programme.

Further data from the EGO analysis described P4's temperament type. Chess and Thomas (1984) developed a system that provided for 'temperament clustering' for school application. Three clusters have been identified and included the learners' 'task orientation', which include a child's persistence and attention, levels of distractibility, and activity. Secondly, 'personal social flexibility', which includes the child's approach and withdrawal with regard to initial responses to new stimuli and people, adaptability and positive aspects of mood. The third cluster examines 'reactivity', which identified the child's negative aspects of mood, i.e. the amount of unpleasant behaviour or mood displayed by the child, intensity, which focuses on the energy levels displayed, and finally the sensory threshold, which is the amount of stimulation necessary to evoke a discernable response in the child.

Harcombe (1993) explains how there is insignificant evidence on the effect that a learner's temperament can have on school performance and cognitive development, however, there is enough evidence to suggest that teachers, mentors, mediators (like the researcher) and parents

needed to be aware that differences in temperament, and subsequent behaviour can have a profound impact on school performance. This argument suggests that if these role-players in education accommodate the temperaments of learners in their care and adjust their lessons and approach accordingly they could achieve a 'goodness of fit' with that particular learner and some barriers to learning would be less likely to develop (Harcombe, 2001).

The mediator of the IATLI programme needed to consider the 'goodness of fit' relationship carefully where each participant was concerned. The integrated nature of the programme, particularly the 'top-down' meaning-based approach aimed to develop a friendly reciprocal relationship that also allowed the learner to understand and become cognisant of his own behaviour traits and characteristics.

Key characteristics of P4's temperament indicated that as far as task orientation was concerned he was low on persistence and attention and low on activity. (See Appendix 4). The 'personal flexibility' cluster indicated that he was withdrawn and scored low on adaptability. The 'reactivity' cluster indicated that his intensity (when attempting tasks) was very low. This excerpt described how P4 followed through and completed tasks on time and organised thoughts better than earlier in the academic year. Considering his temperament analysis as per the EGO, the interaction on the IATLI programme had had a positive effect on P4's metacognitive learning strategy acquisition. It is also important to recognise that a clear 'goodness of fit' relationship was established gradually as the year progressed between the P4 and T7.

> *T9:"I think it's more specifically the ability to look at the question, formalise an answer within the time constraints, whereas before, one or two of them just totally bombed out and didn't do the last question because they haven't managed their time. So there I have seen an improvement."*
>
> *"Yes, in the case of, like I come back to my main point of them being able to read and get it done in time. Whereas, before, they would go right through, so they're also processing being aware of their deadlines."*

These excerpts were general observations from T9 who taught all the participants aspects of Biology/Life Sciences and mathematics; in her opinion she had observed a general improvement in the time management techniques employed by the learners. This improvement had been attributed partially to the mediated IATLI programme, however, it is worth noting that they had also began to settle down and 'come to grips' with the demands of high school, particularly the focus on intrinsic time management ability. It is worth noting

that P2 had attended a remedial school which did not place any emphasis on timed activities or tests, and for him to be observed coping with organisation and time management issues was significant. Time management ability relates directly to Feuerstein's (1980) cognitive learning strategy of 'self-regulation'.

> *T11: "Yes, it has worked well especially with studying for the test when they do the mind maps which I haven't showed them but every time they've done the mind map, they show it to me, they come and show it to me and their marks are different. They improve and every time they haven't used that, they tend to get lower marks or fail."*

Using cognitive mind-maps as a tool to access the thinking processes in learners who are strong simultaneous processors but weak successive processors (learning style) has been shown to be very effective in visually organising information. These cognitive mind-maps are utilised in the thematic, meaning-driven, top-down approach to literacy acquisition integrated into the mediated sessions. Mind-maps are used when planning creative writing activities and this activity is directly linked to Feuerstein's (1980) MLE where the congnitve learning strategy of 'Intentionality and reciprocity' is mediated through direct interaction between the mediator and the mediatee.

The fact that P7 (discussed by T11) was using this mind mapping technique to help him stay organised and to help him with his logical organization of content presented in class in line with his simultaneous learning strength was significant. Harcombe (2001) explains how effective literacy acquisition is only possible if literacy skills are incorporated simultaneously with mediated, cognitive learning tools. This response indicates clearly that P7 was using techniques to facilitate his self-regulation and planning skills as discussed here.

> *T7: I can give you (P4), his work, from someone who would barely answer and was giving me small amounts (of effort and work). That skill in now at a point where he is comfortable with what he has to write in cycle tests."*

> *T7: "Yes I have seen in (P4). I think he is getting better and better at understanding the importance of organisation."*

(The first excerpt transcribed from the interview with T7 was cited in the discussion on sub-question one that examined literacy improvements of the IATLI programme. It was seen as also being a relevant excerpt where cognitive learning skills were concerned as there was a direct relationship between literacy skill ability and application, and cognitive learning strategy acquisition.)

T7's comment described how P4 was not engaged in his academic progress or lesson participation. P4's contributions to class tasks, those being verbal participation and written tasks were reported to be minimal at best. T7 indicated that a visible change had occurred over the six month period that included P4's participation on the mediated IATLI programme. To have the confidence and ability to engage in the writing and completing of class tests when this was not previously happening for a particular learner indicated that a change had occurred. Feuerstein's cognitive mediated learning strategies of 'self-change', 'competence', 'self-regulation', 'transcendence' and 'meaning' are acquired cognitive learning skills that are essential for achieving the desired outcomes when writing tests. In T7's opinion and from her direct observations P4 has developed these cognitive learning skills and was applying them (bridging) them into authentic test writing circumstances.

The second excerpt from T7 was in response to being asked by the researcher whether she had observed any application of cognitive learning strategies in classroom learning situations. Her response indicated to the researcher that P4 had demonstrated the cognitive learning strategies of 'planning' and 'self-regulation' which are described by Feuerstein (1980) and by Harcombe (2001) as essential learning tools that need to be developed and transcended into work-based literary tasks in order that learning progress can be achieved. What was of importance in this excerpt was T7's reference to change ("*...he is getting better...")* this implies that some independent variable or factor was responsible for this change. The EGO did indicate at the beginning of this study that P4 was a passive learner who did not finish tasks and was not active in his own learning, i.e. he did not display any real sense of 'agency' where he took an active control in his life or learning (Donald, 2011). The planning and self-regulation described above was evidence that internalization of learning skills had taken place and that the IATLI programme was a contributing factor to this observed internalization of skills.

T9 responded when asked about the relationship between the IATLI programme and the development of cognitive learning skills to cope in her class. Part of her response was a general comment regarding all eight of the participant learners and was a broad observation of her opinion on the merits of the mediated programme to develop learning skills.

> *T9: "Yes I do. I think more specifically it teaches them time management and (to) actually weigh up what they have to do (in lesson activities) and when they have to do it, in those certain time frames."*

T9 regarded time management skill as a very important learning strategy for success in the academic environment. In her view she had seen evidence of this skill development in the eight learners who participated on the programme. Other evidence pointed to generalisations of the whole cohort's performance as problematic as each learner presented with unique emotional, social and educational issues that played a significant interactive role in their development. However becoming more organized did indicate a level of active participation, responsibility and agency within in a person's life. The researcher's journal indicated that P1, P2, P4, P6 and P7 improved on their application of time management skill when working within time frames to complete tasks outlined in the IATLI curriculum, notably creative writing planning and organization of activities within the sessions. Skuy (1996) describe the internalisation of Feuerstein's cognitive learning skills of 'planning', 'intentionality' and 'self-change' as necessary learning skills that are needed by children to be successful learners. This is also in line with the critical success factor of this study as it provides evidence of cognitive learning skill development.

Analytic commentary

T2 commented; *"I would say that I think the biggest thing from your programme that does help is helping them to be more organised."* This type of comment was repeated by T3 who said: *I think it's very effective. Example: (P6). He's becoming a lot more organised which is helping him"*. These excerpts indicated that for these learners the mediated cognitive learning skills of 'self-regulation' and 'goal-planning' were being applied to organisation. What was commonly mentioned during the EGO analysis of the historical background of learners who had barriers to learning was that they were extremely disorganised individuals. This study did not investigate the causes of a lack of organization, but it was relevant to the study when a mediated learning strategy made a significant difference to a learner's general organisational skills. Improved organization has positive ramifications that include an improvement in self-confidence and lowering of anxiety for some children with a nervous temperament.

4.6.4 Research sub-question four: Does this method of programme mediation enhance the school's ability to provide an inclusive learning environment?

The literature review referred to White Paper 6, Department of Education (2001) that stated as an "urgent priority the overhauling and transformation of practices related to the identification and assessment in general with a view to achieving enabling mechanisms to support our learners who experience barriers to learning in the most appropriate way" (Education White Paper 6, p. 7). This statement from the National Educational Policy, discussed in the introduction chapter needed to be investigated and integrated into this study. As this was a site-based, participatory, action research project it was very significant that the researcher analysed the critical success factors of the IATLI programme at this particular independent school as the programme has been integrated into the school's academic programme after a collaborative initiative to enhance and develop the criteria and stipulations outlined in the National Policy regarding inclusive education.

In grade eight the pace of the delivery of the lessons was quite fast, the curriculum was very demanding and although teachers often tried to be creative with their lesson design and differentiate their teaching to try to make the lessons and the content accessible to all learners, the children with cognitive barriers to learning struggled to cope and keep up with the teaching pace.

As mentioned, the IATLI support programme was an integrated system that not only focused on literacy skills but also on developing coping strategies and learning tools to enable the child to cope in class. As discussed in the literature review, the IATLI programme was developed to incorporate the principles of Feuerstein's (1980) MLE. The MLE is based on constructivist theory and cognitive modifiability theories that look at the mediation of cognitive functioning skills, examples of which include 'transcendence', 'goal planning' and 'self-regulation'. The intention was that these mediated learning strategies would then be applied by the learner into his/her everyday life, particularly into the classroom setting. These skills could be directly applied to literacy processes like self-regulating and planning the construction of a speech or essay and also in terms of improving organisational skills which could then be applied to time management and studying. Having this type of support on offer to learners who required it, as part of the school day where it was fully integrated into the school academic programme, was an attempt to accommodate all learners regardless of their barriers.

The data that follows represents the mixed responses as to whether the mediated IATLI programme positively facilitated and enhanced inclusive education at this school site.

Theme two: Perspectives of the effectiveness of the IATLI programme linked to an inclusive education setting

Sub-theme one: The IATLI as an effective learning support mechanism facilitating inclusive education.

Excerpts from the teachers that perceived the IATLI intervention programme as having had a positive impact on inclusive education at this site.	Excerpts from the teachers who did not see any positive effects from the IATLI intervention programme, or those who believed that the programme actually had a negative impact on the learner participants.
T1: *"If the school is going to take in children with problems who want to be in an inclusive school, you've got to have a support mechanism and that's what your programme offers. So I think it's important."*	T1: *"It's tough on the children in terms that they don't like being pulled out…"*
T3: *"But (P2) and (P4) and definitely (P1) is coping a lot better." (Since being on your programme)*	T5: *Difficult to say, um, because typically when the grade eight's start…they are all very nervous and all very timid to start with. As the year progresses they all as a group become more relaxed and more confident in themselves as the year progresses."* *"I don't see any of the chaps having gone from being extremely timid and very different and very shy (compared) to the rest of the group to suddenly being over the course of six months to date suddenly being more extrovert."*
T3: *"Absolutely, those children would be totally lost, even worse off if they didn't have you to encourage them……. It's brilliant and we want inclusive education."*	T5: *"...the second thing is that I think it actually disadvantages them because the majority of these sessions take place during teaching time when they are out of class, then they have the added hurdle of having to catch up missed work…but it also disadvantages them in that they are then on the back foot and have to try to catch up work."* T5: *"I'm (also) not familiar enough with the content of the programme."*

	T5: "I haven't seen any of them using the techniques (mediated in sessions) in my classes."
T4: *"…but I think in the junior years they are given help, assistance and whatever, it gives them a better start for the senior years, definitely."* *T4: "I think it definitely is, because we are an academically mainstream school and there are children who are part of our community and financially can come to our school and obviously cannot succeed under the standard we are putting together and I think there are a lot of children who benefit from it. Perhaps in the junior years, maybe not in the senior years, because it's probably not cool…but I think in the junior years they are given help or assistance or whatever, it gives them a better start for the senior years, definitely."*	T6: *"…maybe they would, they rely a little bit too much on coming to you and if they need to deal with an issue, then maybe it would actually have been a bit more independent, they come to you, but not hugely so."*
T7: *"So, if we as a school have people like you coming into our staff and being able to offer services like this, then to me it makes sense for us to run a programme like this in a mainstream school because it assists the kids to become more integrated into society."* *T8:"…yes I do think so, mainly because I dread to think what these kids would be like without it…so I think that if they don't have it (IATLI) it would not be beneficial to them."*	
T9: *"I think it is effective. Is it necessary? I think that depends on the nature, again, of the children and whatever disabilities they have. So, I think it will go from year to year but I think there is definitely value if you look at the kids who have been through it."*	T9: *"The only concern would be those kids who are lazy and whose parents would want them to be on it, but it's more a case of the kids begin lazy than a case of them needing to be on it, but again I think it's an individual basis."*
T10: *"Ja, I think it's necessary because we don't want to just let every child go to another school or whatever, and I think we need to support as much as we can. So, ja, I think it is effective if it's run properly and there's communication, Ja I agree…"*	T10: (own experience) *"Okay, so I have only got one (P8) so I must admit I haven't seen any major change. I haven't noticed a major change."*
T11: *"It is very, very necessary and we've*	T11: *"…my only criticism is the fact that you*

got….actually I believe that we should have more students coming to you…"	*do this during lesson times and it does exclude these children from my lessons so when they come back they must now catch up which becomes harder. That's my only negative aspect of it."*
T12: *"I think there is a place for it, yes. And I would worry if schools didn't offer it (the programme)."*	T12 *"Perhaps some of them might ride on the back that they need help, and that's why I emphasized the junior levels because I think they do need to realize they've got to grow out of it and grow out of needing support, but you have got to cope on your own eventually."*

Discussion on the excerpts from the table

Teachers who saw the IATLI programme as having enhanced inclusive education at this site

T1 supported the programme as a contributing mechanism at this school to inclusive education in light of the fact that this school did not have a strict academic assessment policy when admitting learners; this was not the norm at the independent schools in the catchment area. T2 and T3 had a very positive view of the IATLI programme's ability of contributing to making the school a more inclusive environment. T2 was more specific and she attributed the IATLI programme to having a direct positive influence on the integration and measure of success shown by P1, P2 and P4.

Like T1, T2 and T3, in T4's opinion the IATLI programme was seen as a necessity in the mainstream school environment. She was of the opinion that the academic rigour of the IEB curriculum at high school and the pace of the academic work place learners with certain special educational barriers at a disadvantage in a mainstream school. Her comments needed to be placed in the context of the high dropout rate of children in grade eight and nine who had been identified with barriers to learning and received minimal or no extra support. In her opinion teacher input alone in a mainstream school was not adequate for some learners when presented with learning issues and cognitive barriers that needed more specialised attention. T4 also believed that any type of intervention along the lines of the IATLI programme was more effective in the junior years, as in her opinion there was more resistance from learners when they progressed into the senior grades, where she stated that *"it's not cool"* for learners

to attend specialized support. Another reason for T4's belief that interventions were more effective in the junior grades was that once learners reached grade ten or eleven on a condoned pass, or a promotion due to their age, the input needed to regain their confidence and bridge the foundation blocks that were not in place became a much bigger and more challenging task.

T7 supported the IATLI programme at this site and saw that it played a positive role in contributing to the school's commitment to inclusive education practice as described in the National Policy Document (White Paper 6 on Inclusive Education, 2001). She postulated that schools had to be flexible and take advantage of the services that were available at any particular moment. As schools progress they have a turnover of academic staff and specialists who contribute to inclusive education so in her opinion inclusive education was a dynamic process that varied in effectiveness as a result of accessible services and the attitudes and actions of teachers employed on the staff at any given time. The mediated IATLI programme specifically evaluated in this case study was seen as enhancing inclusive education presently at this site.

T7 and T9 referred to the need to take advantage of all available resources at any one time in a school. T7 was of the opinion that what the researcher was doing as the mediator and facilitator of the IATLI programme was of benefit to the children who had been identified as needing specific help with their literacy development. T9 did, however, believe that the ability to provide effective inclusive education was also dependent on the nature and type of barriers to education that each individual learner presented with. She had also observed that this programme has been perceived to have had a positive impact on the integration of learners who had attended it into the school environment.

T10 was of the opinion that the programme was necessary to enhance and add to an environment where all learners could access quality education. T10 also referred to the perceived notion that support programmes had a positive influence in stemming the dropout rate of learners who could not cope with the demands of the pace and content of the IEB curriculum which was externally prescribed and evaluated. T10 also mentioned the issue of communication; it was reported in the semi-structured interview process that in nearly every incidence teachers noted a lack of communication between other staff members as an issue that limited the effectiveness of inclusive education at this site.

T11 and T12 responded positively to the need for programmes that specifically targeted the barriers to education that existed in any learner population and proactively attempted to provide support. T11 had felt that the IATLI programme had achieved its stated outcomes and that the IATLI was very necessary and it would benefit more learners at the school.

Lund and Norwich (2002) in their discussion on school effectiveness and children with special educational needs describe how inclusive education policy has seen school effectiveness research turn to focus on the environmental factors in the form of school processes and characteristics as providing a welcome model to the individual deficit models that focus on the child thus negating the responsibility of the school. This means that when learners experience difficulties/barriers when learning it means calling for a reform of the school, its policies methods of curriculum design and delivery rather than changing the deficit only.

Taking Lund and Norwich's discussion into the context of this research project, it could be argued that the ten teacher excerpts discussed above indicated that the methodology behind how this case study was designed and the IATLI programme implemented, suggest that to some extent the mediated IATLI programme achieved some level of success in contributing to the effectiveness of this independent school as meeting the criteria of effective inclusive education.

A discussion of the negative aspects and concerns of the IATLI intervention as seen by the educators involved in this study

Although T1 saw the positive contributions to inclusive education that the IATLI programme offered, she saw the isolation and removal of children from class as socially and emotionally damaging for some individuals. In the literature review Lund and Norwich (2002) describe the tensions that exist between the individuals and the agencies (school systems and stakeholders) when they aim to increase participation in mainstream settings as the 'dilemmas of difference'. This tension is evident when we inadvertently 'include to further exclude'. By providing a support structure that required learners to participate in one-on-one mediated sessions, during the normal school day, to provide them with the skills to cope and integrate effectively into the class environment we inadvertently excluded them as well, by removing them from class. The other aspect to consider was the self-image and fragile ego of a young teenager (temperament type depending), even with the EGO analysis we can never make the

assumption that the value we placed on the support programmes was seen in the same light as the learner who had to participate in an externally organized and prescriptive process.

The power relations were also sometimes unbalanced, as no matter how the facilitator tried to create an environment of equality and reciprocal respect, the adult is still in control of the programme. The social and emotional implications of removing a teenager from class could have a negative and stigmatising effect on the learner and his peer relationships.

The issue of an unequal power relation struggle was of concern to the mediated relationship as described by Feuerstein (1980). The mediator or facilitator needed to constantly be aware of this situation and adopt strategies and practices that challenged the unequal power relations that existed between the learners and the mediator. Nixon, Martin, McKeown and Ranson (1997) describe how in the new era of professionalism and education management there has to be a premium placed on agreement-making practices between the learner and the teacher, joint planning sessions where the learner makes decisions about the direction and management of his own education thus having power to direct his own skill development. Nixon et al. (1997) goes on to describe how negotiated learning involves learner/mediator consultation in designing the materials and topics addressed during learner support sessions. From within such pedagogy professionalism and mentoring have to manifest itself as a particular value orientation around the skills of enabling and empowering the understanding of understanding itself. The mediator/professional need to recognize their own needs as learners in their own right. Daniels (2002) describes how in the instructional conversation approach (between learner and mediator) parents and teachers with the power advantage are asked to engage in meaningful instructional dialogue with the child and to help connect their understanding with the knowledge that needs to be taught.

This paradigm of thought was central to and needed to be considered when initiating this case-study type of research project. By the very fact that the mediated IALTI support programme was implemented in a school, and that parents and teachers put learners forward as participants there existed an unequal power relation between the facilitator/mediator and the child, as there was less ultimate choice as to where and when support sessions would happen from the child's perspective regardless of the conscious efforts on behalf of the mediator to make the support sessions a reciprocal, interactive and negotiated event.

T5 had a different type of concern from what has been reported so far. In his opinion it was difficult to ascertain the relative success or failure of the IATLI programme as he had no in

depth understanding of the structure of the IATLI. He was also unaware of the confidential information revealed in the EGO interviews and he had no information of their progress in grade seven so he had nothing to compare their progress to. T5 also saw that improvement of a participant's confidence and self-esteem could not be totally credited to the IATLI intervention programme as he had noticed a gradual improvement in the confidence and integration of the whole grade cohort as they got used to their teachers, peers and the demands of high school. Basically T5 argued that his opinion as to the success or failure of the programme at enhancing inclusive education at this school was largely a subjective view and not based on quantifiable data.

T5 further suggested that the programme was actually more of a disadvantage to the learner participants' academic progress as they missed out on lesson time when they went for one-on-one sessions with the mediator. They then had to catch up work without his guidance and input (T5). T5's views on the negative impact of removing learners from class to attend mediated therapy was supported by T11 who was also of the opinion that removing learners from school-based activities (academic lessons or extra-mural activities in the afternoons) was not conducive to effective inclusive education.

T5 and T10 also commented that they did not visibly notice any transcendence or bridging of mediated learning skills from the IATLI sessions, by any of the learner participants, into their lessons (T10 *"…did not see any visible change…").*

T6 raised an interesting issue when she stated in her excerpt *"…maybe they would, they rely a little bit too much on coming to you…"* She was concerned that the participants became too reliant on the programme. In other words, they started to use the support and one-on-one relationship with the mediator as a 'safety net' or 'crutch'. In her opinion there was a slight danger of the programme actually having the reverse effect on the participants where they could start to believe that they could only cope and progress academically with the support of the mediated IATLI programme, and that they are perceived by themselves as 'different' from the rest of the learners because they had been placed onto the support programme. This raised the issue discussed earlier with T1's excerpt where the notion of Lund and Norwich (2002) 'Dilemmas of difference' was explored (see 2.8 in the literature review). Even if the intentions of the school and the researcher were that extra support programmes be put in place to enhance the inclusive education ability of the school by facilitating access to

education, there existed the danger that emotionally and socially the good intentions of the support programme might actually contribute to further exclusion.

T12 raised a similar concern when she stated in her excerpt; *"Perhaps some of them might ride on the back that they need help…"* There was a real danger that the learners would actually regressed cognitively and emotionally as they felt alienated from their own success as they subconsciously equated their progress to the mediator and the programme rather than to their own development and skill acquisition.

T9 was concerned that, besides what the parent interview and the EGO analysis concluded, some of the learners were actually capable, with the correct motivation, of succeeding without any type of intervention. T9 stated *"The only concern would be those kids who are lazy and whose parents would want them to be on it (the programme)"* In her opinion the nature of evaluation and acceptance onto the programme was flawed in that it was subjective and coul be manipulated. She commented (researcher's journal) that in a private school the parents were the customers and paid school fees, so if they believed that their child should get the extra support then they were in a powerful position to motivate for it. In T9's opinion a poorly motivated, inattentive, impulsive (poor internal locus of control) learner could be incorrectly identified as having cognitive barriers to learning and literacy and should maybe not be on the programme in the first place.

Summary of the discussion on whether the IATLI is effective in enhancing inclusive education at this site

When asked the question on whether this school environment was having a negative effect on learners with cognitive barriers to learning T1 stated *"Like in class tests and things knowing they (the participants) are panicking and there is lots of anxiety that goes with that…so the written and the formal testing are particularly huge (concerns) and they battle to concentrate."* T1 was referring to the raised anxiety levels that she had observed in some of the learners caused by the weekly and sometimes daily formal testing that these learners were exposed to. The concern was that this type of pressure was inevitable in this school and unless the entire system of teaching and assessing changed the learning support programme would have a minimal positive impact on the school's desired and stated outcomes of inclusive education.

The concerns raised by T1 are contradicted by T2 who commented: *"I would say that on the whole the kids (learners on the programme) we deal with (at this school) fit pretty well into the classroom dynamic"*. Her view concluded that the learners who participated on the programme had fitted well into the classroom learning environment. In the researcher's opinion fitting (assimilating) into the classroom dynamic involved evidence of examples of peer interaction, socialisation and academic competence displayed by the learners. It can be surmised that in T1's opinion the cognitive learning strategies and the literacy skills mediated had enabled the participants to cope in classroom learning situations. However there was no mention of the school embracing the pedagogy of the IATLI mediated programme which was seen as fundamental to integrated inclusion rather than external support services described as an inclusive education initiative. If inclusion was only seen as involving extra support then it can be argued that it was basically 'window dressing' and not a fundamental agent of change.

T2's opinion of the programme's effectiveness at enhancing learning opportunities and inclusive education in general was positive. In response to the researcher's question on whether the IATLI programme was effective and necessary in a school like this she responded: *"I think as private schools if we are going to get inclusion right (the programme) it's essential"*. This excerpt indicated that the IATLI support programme was having a positive and necessary impact on the school's ability to be a more inclusive learning environment. In her statement she also referred to the fact that this site was a private school (which can be interpreted as a school without some of the challenges of less well funded schools with bigger class sizes and fewer teachers). So in her opinion there was almost the luxury of being able to ensure that inclusive education policy was considered and implemented at all levels.

T2's opinions discussed here were supported by T3 who responded to the question asked in the interview of whether the learners with underdeveloped learning strategies coped in her class with the following excerpt: *"If I think about the beginning of the year until now, they (participants) are coping a lot better. They have got used to the system, but for P5 he is still not coping the level is beyond him"*. T3 believed that there had been a noticeable improvement in the general coping ability of the learners who had been part of the IATLI programme and having the programme at the school had enabled these learners to better access the academic demands placed upon them. T3 however did imply that this observed success had not been noticed for all the participants and that P5 was still struggling to cope and was therefore alienated from the aspects of positive reward associated with the school

environment. Her argument was that the value of the programme could not be generalised for all participants and one had to consider individual ecosystemic factors and the degree of severity of the encountered learning barriers when one tried to evaluate the overall success of the ability of this programme to deliver on its specific outcomes.

T3 contributed a further statement in the interview in response to being asked whether these learners should be in a mainstream school or an environment with a modified curriculum. Her response was: *"How does the social stuff affect the child who gets up every morning and in fact by the end of the day has not achieved anything but has failed in the mainstream school environment? That child would be better off in an environment that was much more nurturing."* This response outlined her concerns that even with support structures and programmes in place some of the learners with cognitive barriers still had to cope with their inability to achieve a level of success that would have a positive effect on their self-esteem. Her response outlined the complexity involved in ensuring that inclusive education was effective. She argued that the programme had a positive impact (as outlined in the previous excerpt) and was a necessary tool in promoting better inclusion and opportunity for learners. However, it was not enough and the negative emotional impact on the learner's self-esteem was a very significant factor that needed consideration when attempting to include learners in mainstream schools.

Sub-theme two: Programme and academic success

Analytic point

From the school's point of view the IATLI was incorporated into the school's daily functioning structure for the very reason that it was seen to be of value in developing academic success for children who were being failed by the education system on offer in an independent high school. The school, the children's parents, and the children who participated on the programme all mentioned that they would measure success on how the academic results improved for each learner.

Academic success could only be achieved in the high school environment if the child in question managed to integrate learned cognitive processing skills and improved literacy ability into what was being presented in class. For this reason a measurement of the IATLI's success had to partially lie with the academic improvement of the children who were attending the mediated sessions.

Excerpts from the teachers that perceived the IATLI intervention programme as having had a positive impact on inclusive education at this site by specifically observing academic improvements.	Excerpts from the teachers who did not see any positive effects from the IATLI intervention programme on academic performance, or those who believed that the programme actually had a negative impact on the learner participants' academic performance.
T2: *"Absolutely. There is a whole lot of room for it. It allows children with slight learning disabilities or with learning disabilities, personality disabilities, to be able to integrate into a normal school. Absolutely. No doubt in my mind."*	*T5: "I haven't seen any of them using the techniques (mediated in sessions) in my classes."*

These two excerpts from T2 and T5 were contradictory, T2 was of the opinion that the IATLI programme could provide that extra support that was necessary to allow for learners with certain barriers to learning (as identified for these eight participants) to succeed academically in a mainstream school, while T5 could not provide any example of a clear case where the IATLI intervention had led to a direct, positive academic improvement in any of the participants she taught. T5's excerpt raised up an interesting argument: as no improvement or minimal improvement had resulted, was the programme really worth the stigmatising risk it carried for minimal reward in light of the programme being part of the school's inclusive education policy plans? No clear evidence emerged from the data to suggest that the addition of the IATLI programme as an inclusive education initiative was directly linked to clear academic results.

This set of contradictory experiences or viewpoints were significant for this study. One needs to be cautious when ascribing relevance or fact to the teacher participants' comments in the semi-structured interviews, as many of the comments might be emotional responses about individuals or even themselves. In some cases some teachers might even go as far as to believe that if they did not see any improvement or success in a participant and other teachers or the facilitator did, then it could be a poor reflection on their teaching ability.

Concluding comments: Is this model of intervention enhancing the school's policy objectives of being an inclusive education environment?

Lund and Norwich (2002) state that inclusion can be justified as an educational means if it enhanced access and opportunities for learning, and then functions as a goal, where through learning it collaborates with others and enhances a sense of belonging and self-respect. The discussions and comments that have been discussed here in this chapter only highlight the dilemma that is faced in all educational institutions when dealing with the complex problem of providing effective inclusion but at the same time not highlighting difference, or promoting 'exclusion' for those children targeted as needing assistance.

Lund and Norwich (2002) have suggested four models of inclusion that can be utilized at all levels of education. The first version, 'full non-exclusionary inclusion' involves the full integration of all learners without additional or different support systems. Adaptive responses to diversity (learning barriers) would be solely located at classroom level. In the second version, 'focus on participating in the same place', inclusion depends on the acceptance of some additional and different systems to support participation in mainstream schools. This version shares with the full non-exclusionary model a commitment to full participation in mainstream settings. The third and fourth models suggested by Lund and Norwich (2002), those being the 'focus on individual needs model' and the 'choice limited inclusion model' both limit parental choice and justify the interventions at different settings and separate special schools for some children.

All these inclusive education models suggested here have areas of weakness and risk to the individual. The first model, 'full non-exclusionary inclusion' runs the risk of being over prescriptive and individual needs of the learners not always being met. At the other end of the spectrum model four, the 'choice limited inclusion model' carries the risk of restricted social experiences in distinct limited settings (home schools or special needs schools) and stigma for those in distinct settings. The evidence from this case study has indicated that this school fits most closely with the second of Lund and Norwich's (2002) model, 'focus on participating in the same place'. Learners participate fully in the school's systems without discrimination; however, they still attend specialised and targeted individual support. Although what this school is doing fits with this model, the research indicates that the risks of some levels of stigmatisation and exclusion do exist.

4.6.5 Sub-question five: Have the stated outcomes of the IATLI programme been achieved?

The above discussions have explored the critical success factors of the IATLI programme and its implementation at this site by evaluating it as a case-study. The final sub-question generalises the overall success of the programme. The one area that has not been explored in any detail so far, and was so important to this study, was the actual one-on-one mediated relationship between the learner and the mediator. The discussion below examines the relationship between the learners and the mediator of the programme.

Theme three: Critical success of the one-on-one mediated sessions with the participant learners

This theme was directly linked to the main question of this study. The complexity of integrating a programme of this size into an already full academic programme of a very large secondary school was very challenging. As previously mentioned, some of the critical success factors (sub-questions of this project) of the IATLI had previously been investigated and researched in controlled clinical settings, but what needed to be explored was whether one-on-one interaction could be successfully incorporated into a school day.

Sub theme one: One-on-one mediation and confidence

Mediating learning skills to a learner in a one-on-one situation provides an intense learning environment that is unique and intensive. Feuerstein's (1980) MLE provides the mechanism for the success of the integration and internalisation of learning tools into a learner's cognitive processing skill set. The mediated learning environment is unique in as far as the power relations are concerned; the mediated relationship is seen as one that is a partnership of mutual learning and respect. The mediated learning experience is an interactive relationship that is reciprocal in its functioning. Each learner has a unique temperament, cognitive processing strength, interests, cultural identity and barriers to learning that needed to be considered. Each mediated session with a particular learner is unique and tailored to be a partnership that aims to make the child feel part of a genuine and real process that contained material and experiences that are authentic and meaningful.

Feuerstein (1980) explains how the relationship between the mediator and the learner is so important to the success of the intervention. When a learner is able to participate in a genuine and productive mediated set of learning support sessions there will usually be a positive

relationship between successful mediation and the development of self-confidence and self-esteem.

The teachers who participated in this research project were asked whether they had noticed an improvement in the confidence of any of the learners participating on the programme. They were asked to discuss if they saw this improvement in confidence of the participant learners as being directly attributed to the one-on-one mediated learning support sessions.

> *T1: "I think you've got to take it child for child so I've taught a child like (P6), who just was flying on the programme…"*

P6 came from a very supportive family environment and the researcher's journal indicated that he was very comfortable with the one-on-one mediated relationship formed with the mediator. (See Appendix 6.) The EGO analysis revealed that his temperament was very conducive to personal interactions. It was determined that his 'personal flexibility' cluster showed him displaying a high 'positive aspects of mood', and high adaptability to stimuli. The temperament analysis did however reveal that P6 often withdrew from people and situations when he felt unconfident about his abilities. At the beginning of the academic year it was reported that he was insecure and withdrawn during lessons, and it could be argued that the confidence he had gained from the one-on-one mediated sessions had a direct influence in the resultant positive change in his participation. However his positive temperament characteristics, strong family support and excellent support structures at home could all be contributing factors or variables to this apparent positive progress.

> *T5: "Ja, I mean, I think that working one-on-one with you encourages them to practise their work more regularly and enforces it because they're bad at organizing themselves and disciplining themselves..."*

T5 saw value in the mediated sessions as she had observed that the learners on the programme self-monitored their work to a higher degree than before the one-on-one intervention and the 'bottom-up' skill techniques that require practice of newly acquired work had been seen in practice in actual class activities. This view was a generalisation of all the participants, and it cannot be discounted that these organisational skills were related to continued familiarization with the academic requirements of secondary school. However the EGO analysis did reveal that all eight learners' organisational skills and attention to detail were initially weaknesses or barriers to effective learning.

T5: "I think they are beneficial if they are focused and if they are directed and if the kids participate in them fully."

T5's comment referred to the fact that participation by the learners on the programme would only be beneficial if the process was sustained and there was full commitment by the learner to attend. This raised two points for discussion: Firstly, if learners were forced by the school or by their parents to attend the learning support programme and they did not really want to attend voluntarily, then the concept of a reciprocal and equal relationship in terms of the balance of power did not exist. Feuerstein (1980) explains how the relationship between the mediator and the child has to be reciprocal and equal. If the balance of power in the relationship is not equal then a 'goodness of fit' relationship cannot be achieved, and as a result the process cannot be viewed as a successful intervention, no matter what the results. This raised the question of replicating this study at a different site, as the personality and skill of the mediator of the IATLI had to be considered. This limitation has been outlined in the methodology section as one that needs to be considered in any case study intervention that is site-based and participatory in design.

What also had to be considered was the future participants who were admitted onto the IATLI programme. They could present with set barriers to learning, temperament styles or personalities that did not fit with the mediator, so there was no guarantee that the results or observations of progress could be guaranteed to be replicated into the future. The second point that deserved due consideration was the ability of the learners to have the resilience or perseverance to finish the programme, (in this study all the eight participants finished) and for them to continue to apply what they had internalized. Whether the long term outcomes of the programme were achieved or not can only be verified in a longitudinal study that is beyond the scope of this exploratory research project.

T6: "Absolutely, there is no two ways. Some kids really, really need that one-on-one and in the bigger class we can't give the one-on-one teaching that is needed, especially with these young boys, so yes."

T7: "Yes they are. I have actually watched the kids. They need to go and see you. They would rather miss my subject or any other subject so that they can make time with you."

T6 had observed educational value in one-on-one mediation as the classroom learning environment could not always provide the necessary cognitive skills and attention that were required by these participants. T6 taught and referred to P4 who had been identified as

having a temperament that was not conducive to gaining full reward or benefit from classroom settings, especially if he was uncomfortable or felt anxious. T7's excerpt was an indication of the reciprocal and positive relationships that she had seen develop between the learners and the mediator over the six month period. T7's excerpt also indicated that there was a voluntary element to the one-on-one interactions with the mediator, which illustrated that the uneven power relationship that existed between the learners and the mediator was minimized through this type of observed behaviour where they needed to go and see the mediator. Observed enjoyment and engagement by learners in the learning process or in educational initiatives, where once it was absent was evidence of the internalization of the mediated learning strategies of 'self-change', 'challenge' and 'competence' (Feuerstein, 1980). This type of observed active involvement and initiative taking could also be linked to increased self-esteem and confidence.

> *T8; "They kind of tend to think 'I'm not important' and someone else will ask the question and I think this one-on-one thing teaches them that you know what, you are important and if you don't understand, no one else is going to sort it out. You've got to do it. So ja, I think it helps a lot."*

This excerpt implied that the one-on-one mediated sessions allowed the learners the opportunity to receive individual, focused attention which meant that they felt part of the education process, not removed and alienated from education, as was often the case if the learner could not understand or contribute to mainstream class settings. This response was a generalized comment that summed up her opinions on the merits of the IATLI programme.

> *T9: "Oh definitely. I think it's that step by step and almost holding hand approach but not baby, but it's definitely that one-on-one assistance definitely makes a difference."*

> *T11: "Yes they are. There are some children that really, really need one-on-one. I've got P5 now in grade eight. Whenever he's been to you and he comes to me, it makes such a great difference in his performance."*

T9 and T11 both responded that they observed the one-on-one assistance provided by the programme as being of benefit to their learners' cognitive and emotional development within the context of what the mediated IATLI programme set out to achieve. T11 mentioned P5 who was identified by the EGO analysis as having given up on achieving academic success after a history of academic failure and prolonged attendance at remedial schools affected his confidence. (See Appendix 5.) The EGO analysis also revealed that he had been diagnosed

with ADHD when in grade three. One of the reasons he was put forward as a candidate in the first place was because of his inability to foster effective relationships with his peers and his teachers in classroom settings; his academic performance was also a cause for great concern. The fact that T11 had seen a positive difference in his performance was significant as this change was noted and directly related to the mediated IATLI sessions.

General conclusive comments

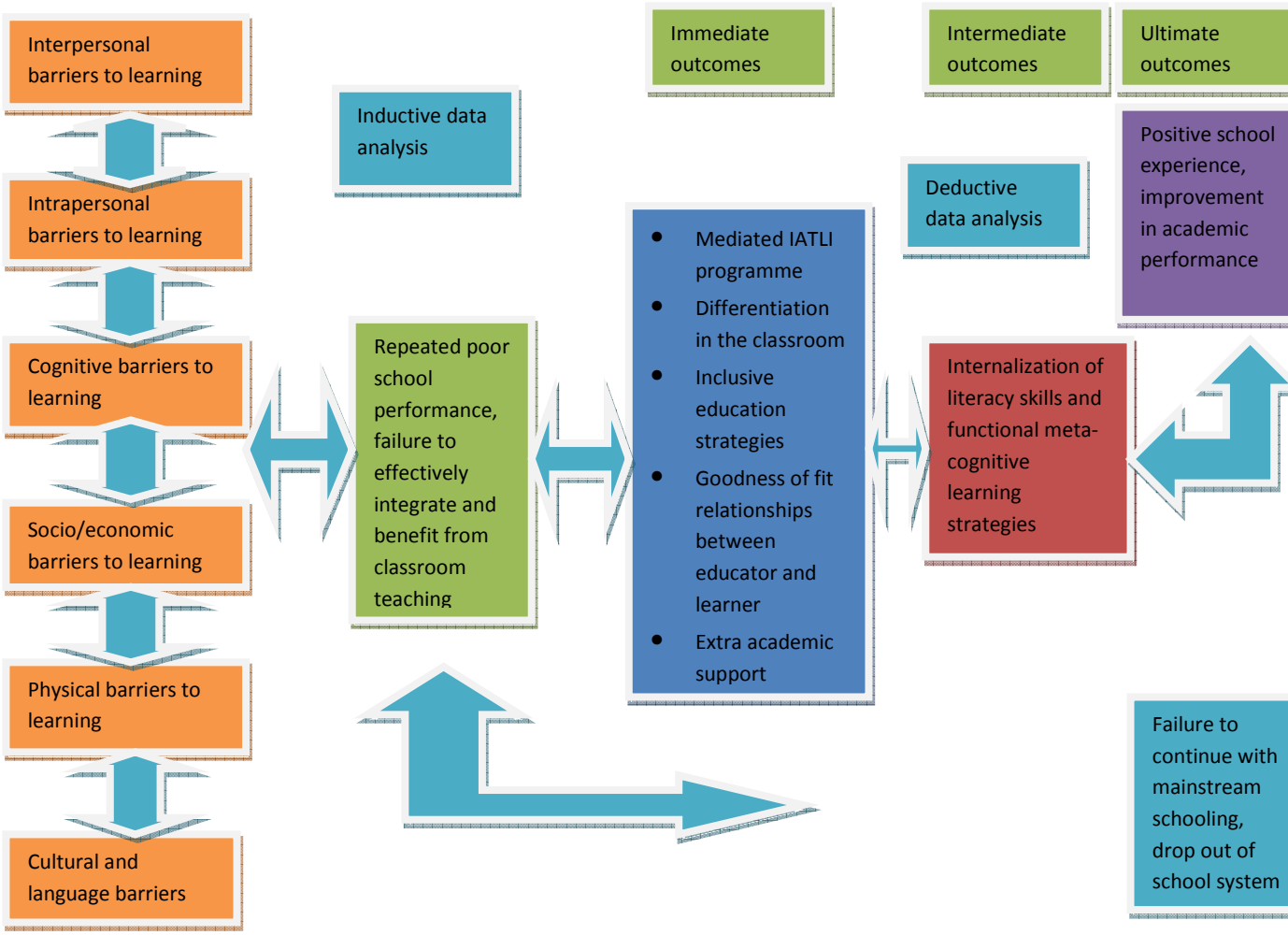
Responses to this question and subsequent discussion received positive feedback from a majority of the teachers who participated in the interview process. The other teacher participants were not able to directly attribute any improvement in learners' confidence to the programme. Some of the teachers were not able to say with any conviction that the children that they taught had displayed an improvement in confidence or self-esteem at all.

As mentioned, the majority of the teachers were of the opinion that the mediated learning support programme was directly responsible for the improvement in the confidence of the learners. T8 postulated *"They kind of tend to think 'I'm not important' and someone else will ask the question and I think this one-on-one thing teaches them that you know what, you are important..."* This response showed how T8's opinion supported the argument that the participants needed the one-on-one support in order to feel valued and of importance. Depending on a child's temperament, personality, and other contributing factors like socio-economic circumstances, marginalisation and failure to achieve academically at school can have a detrimental effect with regard to identity formation and self-esteem.

4.7 Logic model

Yin (2003) describes the use of a logic model as an analytic technique that consists of matching empirically observed events to theoretically predicted events. The logic model that I have used here has been adapted from Wholey's (1979) framework (*individual-level logic model*), this model illustrates the complex causal relationships between the different variables that need to be considered when analysing the data collected from this case study. What this framework illustrates is the complex relationship between the ecosytemic factors that manifest in poor school performance in the learners selected as participants for the IATLI mediated programme, and the various contributing factors or variables that cannot be ignored when evaluating the relative success or failure of the programme in light of the critical success factors described in this research study's questions.

Diagram one: Causal, Logic Model. (Representing the relationship between variables related to development of effective cognitive learning and literacy skills in learners)



The causal relationships that exist between the independent and dependent variables that are represented diagrammatically in this model can be supported and corroborated by excerpts from the semi-structured interviews with the participant teachers.

The researcher asked the question: "Does your curriculum give you the time and space to reconceptualise or differentiate your curriculum delivery?"

> T2: *"I must say generally, I think the senior school curriculum is tight. We have to move quickly through the year, but I think that's where our extra maths classes for an hour after school is very, very good and the kids who attend those are definitely reaping the rewards. You can see a marked difference in their marks."*

T2 has described how the interaction in lessons and the time available in class for the effective teaching of maths was inadequate for learners with cognitive barriers to learning (this excerpt is directly linked to the eight participants in the programme). T2 stated how

these extra interventions were necessary to link the content from lessons to the learner, in this case one-on-one extra maths lessons that she directly linked to an improvement in the learner participant's maths marks.

This extract could be interpreted in two ways: firstly extra interventions were seen as being necessary for the learners (those identified with specific learning barriers) who needed the extra interventions to internalise and create meaning from the material taught in class. Secondly the extra interventions, in this case the one-on-one maths lessons, were seen as part of the multi-dimensional support that could bridge the knowledge into the cognitive schema of the learner.

The diagrammatical model that was shown here referred to the necessity of a 'goodness of fit' relationship as a contributing factor to the learner internalizing learning skills or literacy ability. This type of relationship was seen as important to the success of the IATLI mediation process. The research also indicated that teachers saw this as equally important. The researcher posed the following question in the interviews: "Should these learners be at a mainstream school or should they be in an environment with a modified curriculum or teaching environment, especially the kids on my programme".

> T2 responded: "*See I still believe that I am a firm believer in inclusive education. I don't think we are doing it right yet in this country, but I honestly believe that as a teacher you can make the necessary changes in your classroom and in your teaching style so that you can accommodate these learners, so that they don't have to feel like 'I'm less than, I'm more stupid than' I really feel that we can manage that."*

This excerpt explained this teacher's opinion of how the relationship that a teacher managed to establish with learners was vital to their ability to effectively teach them and enable them to gain value from the lessons and classroom interactions. The premise was that cognitive development and active integration and participation of the learner into the class environment was dependent on the 'goodness of fit' relationship that they could establish with the child with barriers to learning. This view fits with the interactive model that was shown in diagram 1. The results from the semi-structured interviews had shown that there was a strong indication from the interviewees that many variables that had a positive influence on cognitive and academic development needed to be in place and readily available to the learner if we were to maximise the chance that cognitive barriers to learning could be coped with or even overcome. This was an important consideration as although there was considerable evidence that suggested that the mediated IATLI programme was an important

contributing variable that could take credit for the positive improvements in some of the learners on the programme, this evidence was usually placed within the context of the other contributing variables as explained here.

It could therefore be argued that any success that could be claimed from the mediated IATLI programme cannot be viewed in isolation from the contribution of other influences. This statement posed an important question of whether any observed or recorded critical success factors of this case-study would have been as obvious or notable had the environment not been as conducive and accepting of extra forms of support. Another consideration was the fact that this site had allocated its most qualified and experienced teaching staff to the grade eight group. Many of these teachers spent an inordinate amount of time focussing and planning their lesson differentiation and evaluation of the learners that they were responsible for. This was very significant as a percentage of the teachers interviewed were striving to achieve exactly what the mediator was trying to achieve though the one-on-one 'goodness of fit relationships' that were established with the learners.

4.8 Conclusion

The teaching staff at this independent school was very passionate and committed to providing the best possible standards of education to the learners of the school. All of these teachers were extremely happy and motivated to be part of my study. They all had a specific interest and desire to see this programme succeed. All the teachers were willing to be part of workshops that outlined the details of how this study would be conducted, and sessions that highlighted the content and methodology of the IATLI programme and how it would be incorporated into the school's general day/organisational planner. The teachers gave me responses to the questions that were very detailed and meaningful. The general consensus was that the IATLI programme was very necessary for grade eight learners who found that they could not cope with the demands of the academic curriculum in grade eight, specifically if the reason they were not succeeding was directly related to barriers to learning associated with poor literacy skills and poor development of cognitive learning tools as outlined in Feuerstein's (1980) MLE.

Generally the teachers (stakeholders) who were part of this study were very optimistic about the programme, and all teachers noticed some improvement, related to the critical success factors of this study, in the eight learners over the six month period when the programme was running. These improvements included: confidence, self-esteem, improved literacy skills and

evidence of cognitive learning tools seen through the achievement of lesson-specific outcomes and assessment standards.

This chapter discussed the data that was collected for this research study. Both the quantitative and the qualitative data that the researcher collected was presented and the results were analysed. The discussion on the qualitative data was represented as an ethnographic narrative. In the discussions and conclusion chapter that follows, the data discussed in this chapter is triangulated, and resulting inferences are made to the research question and the sub-questions of the study. The conclusion chapter also makes inferences to studies and theories outlined in the literature review where my results support or refute their claims. The evidence from the data is firstly discussed generally and then in relation to each individual learner participant's ecosystemic circumstances.

CHAPTER FIVE

CONCLUSIONS AND DISCUSSIONS

South Africa's education structures are in crisis. Both state-run schools and schools operating in the private sector are under pressure to deliver a standard of education that provides all South Africans with opportunities to be successful. As Harcombe (2001) outlines in the literature review we cannot examine the crisis in South African education in isolation, we have to examine all the various mitigating factors from an ecosystemic perspective. Research indicates that South African school literacy levels are below international standards; also, no one feature stands out as the main contributor to this literacy crisis. The poor national literacy rates need to be seen in terms of a multidimensional framework which includes poor educational standards, socio-economic factors, political factors, cognitive learning barriers experienced by some learners, poor management and utilisation of funds and a legacy of exclusive education practices.

This research project aimed to take the IATLI Programme, which has had some exposure in clinical settings, and integrate the programme into a mainstream school environment as part of the internal school structures and curriculum. As outlined in the literature review, Harcombe's (2001) IATLI programme was designed to address the development of literacy skills in conjunction with cognitive learning strategies that make learning and thinking possible. These cognitive learning tools and the accompanying literacy skills could only be successfully integrated into a person's cognitive pathways and known schema if the IATLI was tailored to the processing strengths of the individual, which included both the successive and simultaneous processing abilities of the learner.

The effectiveness of the IATLI extrapolated from research in clinical settings had focussed on the mediated learning strategies in line with constructivism and Feuerstein's (MLE). That research found that the IATLI showed positive results in one-on-one clinical settings. However, it was the opinion of the researcher that this method of delivery was exclusive and only available to a very small and select group of learners fortunate enough to have access to clinical settings, and availability of therapists. Examining whether the IATLI could be an effective facilitator of inclusive education that significantly improved literacy ability when used in real educational settings was the main objective of this study.

5.1 Summative conclusion: The chapters comprising this study that investigated the critical success factors related to mediating the IATLI programme to grade eight learners at an independent school.

5.1.1 Chapter One: Introduction

The central argument of this research project was to ascertain whether there was any substantiated evidence to support my claim that a one-on-one mediated programme was of benefit to the overall development of a pre-selected cohort of learners who were failing to achieve in a mainstream independent school for certain ecosystemic reasons including poor literacy skills and underdeveloped cognitive learning strategies.

In my experience as an educator and a remedial therapist and from the reported crises in the South African education system, inclusive education has not delivered on its promises at the time when this study was conducted. From my own observations and from reports from other educators there existed a small group of learners in most year groups at grade eight level who, for various reasons could not cope with the academic demands of the curriculum. It was also established that the most vulnerable learners in this group consisted of those who had a history of cognitive learning barriers that had a negative impact on their ability to read, interpret meaning from text, articulate their thoughts in written form and successfully decipher comprehension-type activities. As a result, testing and anecdotal reports indicated that these literacy skills were below age and grade level.

I observed that there was a critical need to research real, practical methods that could improve education delivery in South Africa, particularly the delivery of the national curriculum to vulnerable learners with special educational needs. This observation clearly highlighted the need to contribute research findings and data that reported on a practical, authentic case-study that could contribute to the body of knowledge that could ultimately serve as a possible solution to the crippling problems of education delivery at the grass roots level.

My argument was that it was necessary to work one-on-one with learners in a structured mediator and learner relationship over an extended period of time if any of the targeted barriers to learning were to be overcome. I proposed that although differentiation in the classroom and the undeniable impact of experienced and dedicated teachers do make a positive difference to a learner's academic progress, exposure to one-on-one mediated learning support sessions can have a profoundly positive impact. In some cases the

'scaffolding' of a learner with the necessary learning/literacy skills and self-belief would enable him to be a productive, self fulfilled and successful person with a lifelong passion for learning.

In the introduction I provided a detailed synopsis of how I intended to implement the mediated IATLI programme as part of the participatory action research study. I also highlighted the process of learner identification through teacher referrals, parent interviews and educational testing done as a prerequisite to participation. This conclusion chapter reflects the complexity of the stated research questions and validates the necessity to argue the process of the IATLI's implementation as a programme and its influence on each of the eight individual learners.

The introduction chapter also highlighted the ethical motivations and constitutional policies of the education act where the Department of Education White Paper 6 of 2001 which stated as an urgent priority the overhauling and transformation of practices related to the identification and assessment in general, with a view to achieving enabling mechanisms for the purposes of supporting our learners who experience barriers to learning in the most appropriate way. (Department of Education White Paper 6, of 2001, p.7).

This research study came to the conclusion that the mediated IATLI programme could become part of the solution to the stated urgent priority of investigating enabling mechanisms that could support learners with barriers to learning. The research outcomes planned and described were carried out accordingly and data was elicited that provided reliable and valid conclusions.

5.1.2 Chapter Two: Literature Review

The review of the literature was developed to provide the reader with a multi-dimensional perspective of the project that was described in this dissertation. Chapter two investigated the theoretical underpinnings of both the seminal theory that supported the IATLI programme and the theories that directed its implementation. This included unpacking the constructivist theory that underpinned the IALTI programme, an examination of the theory behind the methods used when implementing the IATLI, the cognitive processes of speech and literacy, programme implementation and design, naturalistic and participant orientated evaluation models, a deconstruction of the theory behind inclusive education theory and a review of

other studies that have investigated similar types of constructivist type programmes that have been implemented in comparative authentic school settings.

The first aim was to unpack the seminal theories from which the IATLI was conceptualized. Vygotsky (1982) describes his constructivist theories that supported his research as the 'zone of proximal development'. According to Vygotsky the development of psychic tools, which include systems of motivation, written language, schemata, diagrams, maps and systems of notation are those which can only be developed within the zone of proximal development. Hedegaard (1989) was referred to in the literature review with his statement that mediators need to be aware of the developmental stages of individual learners, this linked to the emphasis that I placed into the construction of exhaustive ecosystemic evaluations of the eight learners on the study.

The second major influence behind the IATLI programme was the constructivist designs and theories supporting the cognitive learning tools developed by the Psychologist Feuerstein. In the literature review I described how Feuerstein's (1980) (MLE) was a programme designed to bridge cognitive learning skills into the schemata of learners who experienced MLE on a one-on-one mediated format. Feuerstein describes the MLE as the dynamic interactive relationship that facilitated cognitive development. In working with learners it operated both implicitly and explicitly to interpret and elaborate the learner's direct experiences with the world. This theory of the mediated learning of cognitive learning tools formed the core outcome of the IATLI programme and was instrumental in this project. As the discussion of the results showed, the success of this project was linked directly to evidence of cognitive learning tools being transcended from the mediated sessions into the classroom by the participant learners. I was able to effectively deliver the IATLI sessions to the learners and work through the designed curriculum structures over the six month duration of the study.

The literature review continued with a description of the details behind the IATLI programme as referred to by Harcombe (2001). I described how identification of a learner's cognitive processing strengths and weaknesses was essential to developing a 'goodness of fit' scenario with the learning material used in sessions. This diagnosis was seen as essential when directing the focus of each learner's experience. The ecosystemic processes that I described in chapter four that were conducted for each of the eight participant learners ensured that I as the mediator was fully prepared to target the design of the IATLI sessions to every learner's individual needs. As the conclusions drawn in this chapter (that follow this introduction)

argue the effectiveness of the IATLI intervention for each of the eight individuals, it was necessary to outline the details of the pedagogy of the IATLI as this allows the reader to contextualize each of the learners' experiences as a participant on the programme.

I continued by unpacking the theories of Sternberg (2009) who investigates the cognitive processes and neurological relationships between cognition and learning. Sternberg describes language and reading as an extremely complex, cognitive process which at minimum involves memory, language, thinking, intelligence and perception. This discussion was important to my study as it was necessary to understand the complexity behind the learning process and thus the complexity of what I intended to research. This complexity was evident in my discussion of results that described the causal relationships between the intrinsic and extrinsic factors that had an influence on the learning process.

As this project explored the critical success factors associated with the integration of the mediated IATLI programme into a mainstream school as part of a participatory action research design, it was necessary to examine the literature of the theories of programme evaluation. Smith (1989) defines a programme as a set of planned processes and activities directed at bringing about specified changes in an identified and identifiable audience. Owen (2007) provides a description of the levels that programmes operate in society, this research fitting the 'micro' level of programme inception. From the outset my case-study project followed the direction and methodical steps outlined by Smith and Owen first with the ecosystemic evaluation followed by the planning and implementation of the programme over a six month period. These theories of programme evaluation proved useful to me as the researcher over the duration of this study as they provided me with objective structure allowing for a 'platform' to elicit data which is analysed in the conclusions aligned with the research questions that follow.

The literature review also investigated the work of Worthen and Sanders (1987) who describes the concept of a participatory naturalistic enquiry. This lens of my study saw a naturalistic enquiry as one that records multiple rather than single realities. Worthen and Sanders also describes how naturalistic enquiries see the evaluation process evolve as the participants gain experience in the activity. Naturalistic enquiries are subsequently described as being inductive in nature which rely on a process of evaluation that stems from grass roots evaluation and discovery and depend on a multiplicity of data. The paradigm of a naturalistic

enquiry as explained here by Worthen and Sanders accurately described the nature of the research project that was implemented and evaluated in my study.

One key area that was investigated in this study was the critical success factors linked to the programme's ability to integrate into the school as part of its inclusive education mechanisms and policy. The literature review explored the complex and contradictory questions that arise from the inclusive education debate. This included Lund and Norwich (2002) who describe the tensions that existed between the individuals and the agencies (schools) when they intended to increase learner participation in mainstream settings as the *dilemmas of difference* which implied that often the more you try to include learners you often create more opportunities to exclude them. Slee (2002) and Knight (2000) describe the fundamental tensions that exist when there is a demand for the need to institute changes for educational inclusion and how inclusive education policy needs to be incorporated into the broader educational theory where the ends and the means were inseparable. Chapter four (discussion of results) showed how the programme did contribute to the inclusion policies outlined in the Department of Education White Paper 6 describing inclusive education policy. However, the results need to be evaluated within the framework of the contradictory and cautionary arguments that I described in the literature section. The unpacking of inclusive education theory was useful as it allowed the researcher to make comparative references to the elicited data as to how effective the IATLI was in enhancing inclusive education at the research site. A fuller analysis follows in the conclusion linked to research question four.

Finally the literature review chapter compared and evaluated similar and contradictory studies with the aim of placing this research project within the body of research that already exists.

Many studies were examined and represented in the literature, Scott and Teale's (2009) study reviewed literacy programmes introduced into Hispanic schools in California. Calhoon's (2005) study evaluated the 'Peer Assisted Literacy Strategies' programme a reading comprehension programme designed to assist middle school children with learning disabilities. Leyden and Stackhouse's (2011) study addressed the need for a programme that focussed on a 'Whole School Approach' (WSA) targeting speech, language and communication skills for all learners. Yaden's and Stackhouse's research then examined a decentralised system where access to literacy enrichment and development was conducted in classrooms. In Phan's (2010) study into the 'academic performance and various cognitive

processes of learning: an integrated framework and empirical analysis' he investigated the hypothesised relationships between self-esteem and self-efficacy and the positive effects that these had on deep cognitive processing and learning in students. Finally Au and Carroll's (1997) study of implementing a literacy programme called the Kamehameha Elementary Education Programme (KEEP) which was a research and development programme aimed at improving the literacy achievement of native elementary students.

All these studies shared similar characteristics of methodology, paradigm of thought and types of data collected to my study, meaning that the conclusions reached from the results discussed here could be compared to, and in turn, support similar studies in an effort to detect causal links between them. This was done as these studies added to the debates that I examined regarding the causal relationships between the independent variables that I highlighted in my causal relationship model adapted from Wholey's (1979) 'individual level-logic model'.

Rival hypotheses were also investigated as it was deemed necessary to strive for an objective and balanced standpoint that considered other views on the impact of mediated literacy programmes and the argument that I put forward that states that mediation is so essential to development of cognitive learning strategies in children with cognitive learning barriers.

5.1.3 Chapter Three: Methodology and Research Design

In chapter three I outlined the methodology that I used in the design of my study. This project was done as a mixed research design. Firstly this project was conducted as a case-study. McMillan and Schumacher (2010) describe the case-study as a bounded system, or a case, over time, employing multiple sources of data. This case-study research design plan was followed from the beginning of the project and each of the eight learners investigated was considered as an individual case-study.

I also explained how this study was operated as an action research project that was non-experimental in design. Cohen and Manion (1989) describe action research as situational in nature as it is concerned with diagnosing a problem in a specific context and then attempting to solve it in that context. It was also discussed how 'context sensitivity' was very important as it was based on the belief that human actions and behaviour are strongly influenced by the environmental setting in which they interact. This action research plan was followed closely and methodically throughout the project. Every interaction that I had with the learner

participants and the teachers was situationally bound to the independent school and all problems, interviews, learning support sessions, surveys and testing were contextually bound. I was able to successfully execute this method of research and reveal credible results.

The data gathering procedures and format of the study followed the outline described in chapters one and three. In chapter three I described the linear format that I employed in gathering my data. This step-by-step process was organized as follows: educator surveys, selection of candidates for the programme, gaining of permission to undertake the research from all stakeholders including learners, parents, teachers and the school, pre-testing of the learner participants, implementation of the project for a six month period of time while gathering data for the researcher's journal, post-programme testing, semi-structured interviews with the twelve teachers who were actively involved in the study.

Chapter three continued with a description of how my project employed a triangulation approach to data collection and analysis. Cohen and Manion (1989) define triangulation as the use of two or more methods of data collection or data types. It is explained how the more comparative sets of data available at the end of a study the greater the researchers confidence in his conclusions. This was evident throughout my study as I used, compared and discussed data that was quantitative and qualitative in nature, and from different collection settings and types.

Chapter three described the techniques that I used to analyse my qualitative data. McMillan and Schumacher (2010) describe qualitative analysis as a systematic process of coding, categorising and interpreting data to come up with explanations around a single phenomenon or interest. This process was done exhaustively with the data from the semi-structured interviews with the teachers and with the data from the anecdotal process of recording information for the researcher's journal.

Chapter three also unpacked the concept of the researcher as an ethnographer. I referred to the theories of Emerson, Fretz and Shaw (1995) who describe the theoretical underpinnings of compiling ethnographic field notes and creating an ethnographic text. Emerson, Fretz and Shaw's description of the 'grounded theory approach' that was inductive in nature, emphasising the discovery of theory in field notes or interviews was followed extensively when conducting the research project. The ethnographic approach allowed the researcher to provide a fuller, richer analysis of the real experiences of the eight learners, thus leading to a more reliable set of arguments emerging in the rest of the conclusions reached in this chapter.

I also discussed the issues and factors associated with the reliability and validity of my study. Firstly I considered the causal links between the variables implicit in the study. Secondly McMillan and Schumacher (2010) described 'history', 'selection threats' and 'attrition' and 'maturation' as factors that needed to be considered and described in my findings chapter and discussion sections. This was done extensively as any study done over time with people in real grounded settings and without stringent controls of the environment needed to be considered to make reliable arguments and conclusions.

This research design outlined here proved useful when answering the stated research questions, because the grounded, participatory approach in a realistic setting allowed for a richer understanding of the case study. This ultimately allowed for a deeper understanding to emerge from analysis of the data, and subsequent conclusions, to the research questions argued in this chapter.

5.1.4 Chapter Four: Findings and Discussion of Results

This chapter consisted of a discussion of the results from the data collected over the duration of this study. As mentioned in the methodology chapter, this research focussed on triangulation of data as described by Cohen and Manion (1989). This chapter informed the researcher of the nature and details of the results from the various types of data collected.

The first section of the chapter referred the reader to appendices 1-8 that included the details of the ecosystemic backgrounds of each of the eight learner participants who participated in the research study. This background history that detailed the cognitive, emotional, socio-economic and schooling history of each learner was essential within the context of the results from the collected data. All references to quantitative and qualitative data that included pre- and post-testing scores, interview analysis and information from the anecdotal notes of the researcher's journal needed to be viewed within the context of the individual circumstances of each learner's reality. Each of the participants followed a similar series of interventions, however they were regarded as individual case-studies as each learner presented with highly specific individual circumstances which made general references to the whole cohort difficult.

The second section of chapter four discussed the results from the Likert-Type questionnaire carried out with the general teaching population at my study site. These results contextualised the opinions of the teachers at the school regarding inclusive education policies, the IATLI

programme and its results and issues relating to integrating support programmes into the demanding Grade Eight schooling programme.

The third section of chapter four discussed the results from the interpretations of the researcher's journal. This journal was constructed of observations and commentary collected from my interactions and reflections of the intervention. This was possible as I was both the researcher and an active participant in the participatory action research. I described how this set of data was subjective in nature as it was my own interpretation of my experiences. However it was inductive in nature as it was a discovery process and the data collected was compared to other data sets including the pre- and post-test data and the teacher interview data as a means of supporting or refuting conclusions.

Section four of the discussion chapter provided the reader with a statistical interpretation of the pre- and post-test scores from the eight learner participants. Although the results were subjected to statistical tests, the conclusions were used as a contextual basis to more substantial data as the sample size of eight learners was too small to be seen as a representation of the whole population. The individual scores of each learner however were important in the final analysis as each learner was viewed as an individual case-study with the test score results linked to other data sources and cross-referenced between the other participants.

The final section of the discussion chapter examined the semi-structured interviews conducted with the twelve teachers who taught the eight participant learners. All the interview sessions were recorded and comprehensively transcribed, the qualitative data was then coded and categorized, this process allowed for themes to emerge. The format of this section presented each research sub-question of this study and then compared the emerging themes to each question to develop arguments from the data to support or refute the questions posed in this study.

The discussion of the semi-structured interviews revealed complex results that could not easily be generalised. The results did indicate that the mediated IATLI programme showed some levels of success in certain areas. It could be argued that the participant learners did develop their self esteem and belief in their ability to be successful in their academic pursuits. The data also indicated that for the majority of the learners there was evidence that they internalised and applied cognitive learning tools to class activities. In light of this evidence

emerging an argument can be made that supports the emergence of critical success factors in support of the IATLI intervention.

The above mentioned variety of methods of data collection proved to be extremely relevant and necessary when reaching conclusions to the research questions. The triangulation of the data sources discussed in chapter four prefigure the fuller analysis of the conclusions to the research questions and the subsequent individual learner experiences unpacked in the arguments that follow in this chapter.

The final section of the discussion of the results chapter examined a logic model described by Yin (2003). I designed a logic model that illustrated the complex and causal relationships between the variables that were contributing influences to the progress of the participants and ultimately the results generated.

The next part of this conclusion chapter will go into detail regarding the arguments and results that emerged from the discussion chapter.

The concluding discussion considered the objectives of the research study by examining the research question through an investigation into whether the data gathered provided credible answers to the sub-questions. Each part of this concluding discussion evaluated the evidence described in the discussion of results chapter in conjunction with the relevant literature that was examined in chapter two (literature review).

5.2 The main research question of this study asked: 'What are the critical success factors of mediating the Integrated Approach to Literacy Instruction to grade eight learners in an independent school?'

To provide a comprehensive answer to this question I examined and drew conclusions from the data in line with the sub-questions asked of this study. The question was complex in its design and multidimensional in make-up. Each sub-question unpacked in this conclusion explored a critical aspect of this case study that was a desired outcome for the overall success of the research intervention study. As this research question was exploratory in design this conclusion aimed to identify and describe any critical success factors of mediating the IATLI to the eight grade eight learners that emerged from the available data.

5.2.1 Sub-question one: Will educators and the mediator observe an improvement in literacy skills reflected in the learner's class activities over a six month period?

This was a critical question that needed to be considered for this project. The reason that these eight learners were considered as participants for this study was that they were not coping with the academic demands of the grade eight academic programme as a result of underdeveloped literacy ability. Ecosystemic evidence showed that all of the learners on the IATLI programme had a complex and very different sets of intra- and interpersonal, social and cognitive functioning barriers that were limiting them from being successful in mainstream classroom learning settings. One baseline set of ecosystemic evidence was consistent to varying degrees; all of the learners were recorded as having either scores from the SDRT testing or from informal reading and writing assessments that indicated that they were below their age and grade level in educational testing for literacy ability. Poor literacy skills were a significant contributing factor resulting in these children not accessing the content of the academic work taught in class.

It is also worth considering that as these learners progress through the secondary school programme (particularly when they move into the FET phase of their education) the written content of the curriculum increases, and the skills needed to interpret the content with inferential interpretations increases dramatically. If these learners did not develop their literacy ability they would find that they would not be able to cope with the demands of the senior curriculum. Another concern was the amount of class work and the pace at which the senior teachers were expected to teach, as prescribed by the curricula, which translated into an increasingly difficult environment for teachers to differentiate their teaching in order to accommodate learners who were struggling to cope with literacy related barriers to learning.

From the Likert-Type Questionnaire 87% of the teachers commented that an additional programme was necessary to provide support and development of literacy skills and strategies for learners who clearly were not coping with the academic demands. This data does indicate that support programmes are encouraged by teachers as they see the value in the focussed additional support, however, this data could also be interpreted as being the result of a lack of confidence in their own ability to deliver the necessary support to the learners who are not coping in their class. The pace of the curriculum, and the demands placed on teachers at this private school to deliver academic results, placed them under significant pressure and stress. The reason that 87% of the teachers surveyed indicated that they are in favour of extra

support could be because learners placed onto a programme alleviate some of the pressure placed on them to deliver results.

The quantitative analysis of the pre- and post-test scores in formal education testing on the SDRT conducted with the participant learners revealed that for both Auditory Vocabulary and Reading Comprehension statistically significant improvements were noted, and in the Phonetic Analysis tests a positive correlation resulted from the *Pearsons Product-Momentum Correlation Coefficient* test. This information was of supporting and interest value only to this research, as eight pre-selected participants did not qualify as a significantly large population where generalised statistical conclusions relating to a larger population could be made.

It was observed that for some learners a significant improvement was recorded between the results from the pre- and post-test scores on the SDRT that exceeded the expectations of the expected longitudinal developmental curve in the case where no intervention was implemented. This was the case for P1, P6, and P7 all of whom made improvements in their post-test scores across all three literacy ability areas tested in the SDRT after the six-month period.

The majority of the eight learners however only showed improvement in some of the areas tested through the SDRT. P2 and P4 improved only in the Reading Comprehension sub-test and the Auditory Vocabulary sub-test of the SDRT, and P8 showed improvements in the Phonetic Analysis sub-test and the Auditory Vocabulary sub-test. P3 and P5 only showed significant improvement in one area of testing respectively, and P5 and P3 also showed significant deterioration in their Phonetic Analysis post-test scores. It was significant that all the participant learners' results, with the notable exception of P5, on the Auditory Vocabulary sub-test showed some improvement above the expected norm-referenced curve. P1's improvement in the Reading Comprehension sub-test was worth noting as the score difference alone indicates that he had improved his comprehension ability by three grades. P7's Phonetic Analysis post-test score also indicated a noteworthy improvement of two grades. SDRT Auditory Vocabulary sub-test scores also revealed that all participants scored at or above grade eight level in the post-test analysis.

Although on the merits the SDRT testing alone there were mixed results indicating overall literacy improvement there existed the possibility that the improvements observed were linked to the meaning-driven and vocabulary-rich activities provided in the IATLI sessions that were prescribed in the integrated 'top-down' and 'bottom-up' structure/curriculum of the programme.

It also needed to be considered that the secondary school experience would normally expose a learner to a greater amount of 'rich text' and content-based material than they would have experienced at primary school, particularly remedial primary schools where the focus was on the core curriculum of subjects. Then there were also the causal variables of other additional input (extra lessons), incidental learning and maturational language development for these children that took place at school and in the home environment that could have been responsible for language ability development, comprehension activity improvement, expansion of vocabulary and their sight-word pool.

Conclusions based on the evidence from the semi-structured interviews with participant teachers

The analysis of the qualitative data from the semi-structured interviews with the teachers directly involved with the learners, who participated in the mediated programme, shows that evidence points to varied levels of critical success of the IATLI programme in developing isolated literacy skills.

Selected excerpts from 'Theme Four' that emerged from the coding of the qualitative data indicate literacy improvements were evident in the classroom by some of the learner participants.

Theme four: Critical success factors linked to literacy ability improvements directly linked to the Integrated Approach to Literacy Instruction

Chapter four presented and discussed excerpts from teachers regarding their impressions of the ability of the IATLI programme to foster literacy skills in the eight learners who participated on the case study. The results were mixed with regard to the levels of success noted; some teachers indicated that they had observed direct improvements in the literacy abilities of the participants with the criteria for those teachers being a significant improvement in test scores. *T5: "He (P2) has moved from being a kind of mid-30s to 40%-type of kid, to somebody who is now getting in the 50s to 60s quite regularly and on one or*

two occasions has got into the 70s. The big difference in his work is the comprehension value that he is now pulling out of it rather than straight regurgitation." T7: "P2 improved tremendously. I think that (P2) is starting to come together nicely and one is seeing him formulating his answers in a beautiful way. Ja, I think, yes, there has been an improvement." T6 had also responded during the interview process that there had been a noted improvement in the writing ability of P2.

These positive responses were not evident from all the participating teachers, it was recorded that some teachers did not observe any significant improvement in literacy ability at all in the learners who were on the programme. T5 and T10 for example, commented on the IATLI programme as having a minimal or no discernable effect on literacy skill acquisition for the learners. It needs to be considered that for some learners the ecosystemic variables identified through their background history and parent interviews were factors that had the capacity to hinder their development and acquisition of learning skills, despite demonstrating progress in mediated one-on-one settings. Teachers comments on the literacy improvements of P4 were mixed, it was reported (T3 and T10) that he had not demonstrated any direct literacy skill improvement in class, while another teacher (T7) reported a level of application of learned writing skills.

However, these excerpts do illustrate that some of the teachers observed improvements in these learners' literacy skills and their subsequent ability to transfer these learned skills into academic success from the mediated IATLI programme.

As discussed in the literature review, Scott and Teale's (2009) research with inner city school children in California indicated that this meaning-driven approach to literacy teaching had to tailor-make literacy instruction to the grounded realities and cognitive learning strategies of each individual. Scott and Teale's study concluded that the intervention was successful.

My findings supported this study by Scott and Teale which showed through the analyzed data that the IATLI programme had a positive influence in improving the literacy ability of some of the learners who participated in this programme.

There was clear evidence from the semi-structured interview process with the teachers that showed that P1, P2 and P7 had demonstrated an improvement in their literacy ability over the duration of the IATLI programme. There was also commentary recorded from the teachers that were general in nature and not specific in identifying the progress of individual learners.

It was important to note however, that there were teachers who responded to other questions in the semi-structured interview where the excerpts showed that they did not see any noticeable or significant improvement in the literacy, or subsequent academic performance by any of the participant learners. T3 for example believed that ecosystemic factors were more influential than the mediated IATLI, and singled out P5 as a learner who was not coping with the academic demands of grade eight. These contradictory comments were in the minority however, but need to be mentioned as not all the teachers who participated in this study saw it as having a direct and positive impact on literacy development.

This information supported the observations recorded in the researcher's journal that showed for some of the participants' literacy skill improvement was evident. These observations included improved tracking ability, sight-word pool, auditory vocabulary, meaning, grammar, comprehension ability, application of structuring and planning when completing creative writing tasks and fluent reading with less hesitations, word omissions or substitutions.

A limitation of the study also needed to be considered. This study was a single, site-based case-study which has not been replicated. The school that I used for my research study was very accommodating and conducive to the careful monitoring of the learners and inclusive education was part of the integrated school policy, besides its implementation difficulties. Considering other independent variables, triangulated evidence did suggest, that to varying degrees for each learner the mediated IATLI programme had a positive causal effect on literacy development for the eight learners who were part of this case study.

5.2.2 Sub-question two: Is the IATLI programme enhancing the self-esteem of its target audience, in this case the participating grade eight learners?

Hedegaard (1989) describes how learners can only operate and make proper learning progress within Vygotsky's ZPD if their temperament, self-esteem, type of processing style, speed and social circumstances are properly considered. Vygotsky argues that learning can only take place effectively if these conditions are accommodated effectively by mediators and teachers. Hedegaard goes on to explain how learning cannot be effective if the participant learner does not function within the ZPD.

The results from the Likert-Type survey conducted at the inception of the programme indicated that 52.2% of the respondents (teachers) were of the opinion that the learning support programme would be an integral component necessary in developing confidence in

the participants. It can be argued that if the mediated IATLI programme improved the self-esteem of the eight learners who participated in the programme and enabled them to become more confident in their abilities then the teacher would have a greater opportunity of accessing the ZPD of his/her learners in mainstream educational settings (Vygotsky, 1982).

Campor and Barnett in Izard, Kagan and Zajonk (1984) explain how there exists a close link between a child's cognitive development and his emotional state. Harcombe (2001) describes how a learner's self-esteem has very close links to the intrapersonal support that they receive. Self-esteem can also vary from one environment to another. For example a child might have excellent motivation and emotional support at home and be very confident and outgoing in those comfortable and non-threatening surroundings, while they might experience extreme anxiety at school if 'goodness of fit' relationships are not established. This would subsequently have an extremely negative impact on their ability to acquire knowledge and learning skills effectively or at all.

The results from teachers' comments and the parent interviews that were conducted as part of the ecosystemic evidence, gathered for each of the eight participants before the mediated programme was initiated, showed that to varying degrees all of these children had a low self-esteem as well as having other emotional barriers that manifested as a result of low self-esteem. It was observed that low self-esteem was linked to poor self-efficacy and a lack of confidence and a causal relationship existed between them.

The research question asked whether any of the data represented and analysed in this study, indicated that for any of the learners who participated in the programme there had been any evidence that suggested that there had been a directly positive improvement in self-esteem, self-efficacy and confidence. Evidence from the semi-structured interviews with the teachers who participated showed that for P1, P2, P3, P5, P6 and P8 an observed improvement in self-esteem or confidence was noted from the data. This data supports the findings of Skuy and Solomon (1980) who found that mediated strategies that enhanced self-concept in students with learning problems improved their general self-confidence. In P4's case specifically teacher responses from the data were mixed, T6 commented on an observed improvement in self confidence, while in T2's opinion, P4 made no observable progress in developing his self-esteem or confidence over the duration of the IATLI intervention. T2 implied in an excerpt from her interview that in P4's case school interventions only have limited influence on self-esteem or emotional development.

These results show that the majority of the participant learners' self-esteem improved and this was attributed to the mediated IATLI programme and its input over the designated six month period. As a positive change in self-esteem was not seen in all the participants it can only be stated with confidence that the IATLI was effective with the majority of the learners and not all of the learners for this critical success factor. These improvements in self-esteem cannot be seen in isolation from the possible contributions from other variables. These variables include learner maturity and the 'goodness of fit' relationships that were established with various educators.

As mentioned, analysis of the available data indicated that a strong argument can be made to positively corroborate the one-on-one mediated relationship provided through the IATLI and the content of the IATLI programme to an enhancement in self-esteem in the learners who participated. The reason that self-esteem had been identified by the researcher as an important critical success factor was that research had shown that the development of positive self-esteem in learners has a positive causal effect on other aspects of learning that includes improved agency, ability to function in the ZPD and acquisition of cognitive learning strategies (Vygotsky, 1982; Phan, 2010 and Bandura 1997; Campbell & Lavallee, 1993).

According to Baron, Branscombe and Byrne, (2009) and Phan (2010) self-esteem is responsive to life events, for example if people have a constant reminder of their short-falls or areas of weakness their self-esteem is affected negatively. If a learner already has a low self-esteem negative feedback from environmental stimuli can have serious and far reaching effects that include depression and depending on temperament type social withdrawal or antisocial behaviour. This was observed through the EGO analysis in the case where learners were already emotionally vulnerable as a result of their conscious negative perception of their learning barriers, and a history of negative feedback from teachers and parents.

Baron, Branscombe and Byrne, (2009) explain how teenagers in particular are vulnerable to a concept called 'self-evaluation maintenance' where we categorize the self at a personal level and we compare ourselves as an individual to another individual and social identity theory applies when we categorize ourselves at the group level. In the case of the learners on the programme there was a comparison between themselves and their peers, and the general achievements and performance of the grade eight group in general. This was particularly evident when these learners could not participate effectively in the mainstream learning

environment and were constantly reminded of their inability to grasp the concepts that their peers could manage.

The evidence presented in chapter four (researcher's journal) indicated that to some extent all of the participant learners (with the notable exception of P4) achieved a noticeable improvement in their self-esteem. The evidence also indicated that the relationship between self-esteem development and the mediated IATLI programme was not one-directional and linear, but causal, multi-faceted and reciprocal in nature. As the one-on-one sessions provided support and positive motivation, the content on the IATLI provided a varied (learner to learner) amount of transferable, acquired literacy ability and metacognitve learning skills. This in turn had the positive effect of developing confidence and coping ability in authentic learning settings (that included the classroom environment and the social environment).

In turn the data presented in chapter four (semi-structured interviews, SDRT post-test scores and the researcher's journal) showed that improvements in the participant learners' test scores enhanced their capacity to understand the cognitive aspects of learning. Also transcendence of cognitive skills, a noticeable, improvement in academic results and improved participation and enjoyment of lesson activities had a profound impact on their desire to actively participate in their own learning. The evidence showed that as the learners began to feel less alienated from the education structures and processes around them, their self-esteem improved. This argument demonstrated the causal positive links that ultimately lead to effective learning as highlighted by Yin's (2003) adapted logic model.

It can be argued that the evidence presented in the findings represented in chapter four indicate that self-esteem development had taken place for the participants which was a critical success factor of this study. It can also be argued that evidence of self-esteem development has a positive causal effect on the other identified critical success factors of the study. Phan (2010) explains how self-esteem and self-efficacy has a positive effect on a learner's deep cognitive processing. Empirical findings from Phan's study indicate that a learner who develops 'performance approach goals' linked to improved self-esteem sees the necessity to place more time and effort and persistence into their academic learning. Donald (2011) describe how the development of a positive self-esteem leads to improved personal 'agency' which is when a learner takes an active control of his own destiny and success through resilience, confidence and active application of his skills. Campbell and Lavallee

(1993) show through their research how self-esteem has been shown to have a pervasive and powerful impact on cognition and motivation.

The evidence discussed here was significant, despite some evidence in the data indicating that the removal of learners from their social environment and placing more demands on learners who were already finding the pace of the grade eight subject curricula and the subsequent workload difficult to cope with had a negative and possibly detrimental effect on self-esteem development. Although it was determined from evidence from the semi-structured teacher interviews that a minority of the learners felt discomfort and some stress as a result of having to catch up missing work, this was negligible when compared to the data that indicated the positive effects of the IATLI programme on self-esteem enhancement. What was also significant was the fact that participation was never forced and in all cases there was never a reported or recorded incident where a learner indicated that he felt uncomfortable or was made to feel different from his peers as a result of coming to see the researcher for mediated IATLI sessions.

5.2.3 Sub-question three: Will quantitative and qualitative evidence show that the participant learners on the programme internalised the cognitive learning strategies outlined by the outcomes of the IATLI programme?

Triangulation of the various different data sources show that over the six month period that the mediated IATLI programme was implemented, certain cognitive learning strategies were internalised by the majority of the participant learners. From the Likert-Type questionnaire 82.6% of the teachers who participated in the survey indicated that, in their opinion, improved learning skills led directly to improved grades in their subject. This was not a general observation as their opinions were based on experience of this programme's results with previous learners which instilled a confidence in the outcomes of the mediated experience with my sample group. When the teachers were asked if the learners would effectively use strategies learned in the mediated sessions 56.5% agreed they could and only 13.1% disagreed. This response indicated a confidence in the mediated IATLI to bridge learning strategies into authentic learning settings. (From previous mediation of the IATLI done before this study began, it needs to be noted that this study had taken a small cohort of learners and analysed their progress as a case-study but teacher opinions have been formed from previous experience of the programme operating in the school and their confidence in the sample group of this study to deliver similar results.)

The IATLI was designed to build interventions on the results of the EGO's analysis of the learners' processing style and cognitive barriers to learning associated with underdeveloped cognitive learning strategies. Harcombe (2001) (see literature review) describes how the mediation of literacy ability and skills are developed simultaneously with the development of cognitive learning strategies outlined in Feuerstein's (1980) MLE.

A significant body of evidence existed from the semi-structured interview process with the teachers who taught the learners directly, and who attended briefing sessions to know what to look for as far as cognitive learning skills were concerned, that cognitive learning skills were successfully internalised and applied in class by a majority of the learner participants. One excerpt from the interview process stated: T3: *"...but I think what you did with them or do with them, it gives them that confidence, it gives them skills, it gives them tools and they go out there."* Information from the researcher's journal provided the researcher with the learners' perspectives on whether they felt that they had developed cognitive learning skills from the programme, and whether they had been able to apply them in practical sessions, either while participating in the mediated IATLI sessions, or into the classroom setting. The researcher observed: *"This was a very productive session. He (P6) improved his times and made fewer errors, which indicated to me that the MLE learning skill of self-regulation and competence is improving."*

All the data sources used to gather evidence for this project illustrated that evidence existed that cognitive learning strategies were successfully mediated to varying degrees to most of the learners during the course of this case study project, and interview and researcher's journal data indicate that these cognitive learning strategies were internalised and used in authentic learning situations. In the literature review I referred to the study done by Leyden and Stackhouse (2011), *The Primary Talk* (I CAN, 2007) programme. This programme concluded that language and communication skills linked to literacy ability were essential to academic success at school. Leyden and Stackhouse's study had two similarities to my mediated programme; firstly, the *Primary Talk* (I CAN, 2007) programme was also initiated in real, authentic settings as a case study and participatory project. Secondly, Leyden's programme examined the real life situations of learners who are not able to effectively access the curriculum as a result of poor literacy and communication skills.

My research project supported Leyden and Stackhouse (2011) *Primary Talk* (I CAN, 2007) programme even though the two programmes differed in their actual delivery techniques.

The most important similarity is that Leyden's case-study project was conducted in real settings, as part of schools' inclusive education initiatives. One of the biggest limitations of my case-study was that it was difficult to accurately replicate the study at another site, as every school would have different learners, a different culture or school/learning environment, different degrees of willingness in teachers to participate in the programme and the different learner-mediator relationships that need to be developed. All of these independent variables would always be extremely significant when trying to replicate this participatory study, making it limited in generalisability.

One of the main objectives of the IATLI was to develop and put in place constructive metacognitive learning strategies that were internalized in the schema of the learner and then utilized effectively in real learning settings and applied to tasks: like essay writing, summarization, reading, logical thinking etc. The evidence from the semi-structured interviews with the teachers revealed that P2, P4, P6, and P7 had displayed an improvement, or the acquisition of new metacognitive learning strategies through observed application of these strategies by the learners in classroom settings. Various teachers reported generally on observed cognitive skill acquisition, or aspects of progress by the entire cohort on the programme. What emerged from the comments made in the semi-structured interviews was evidence that for these participants, that supported the argument that the cognitive learning strategies described by Skuy (1996) of 'self-regulation', 'planning', 'self-change', 'competence', 'transcendence' and 'challenge' had been internalised to some extent and bridged into classroom lessons. T2 and T3 specifically identified improved organizational skills displayed by P6 and P7 as the most observable cognitive learning strategy bridged from IATLI sessions.

The evidence from the SDRT (pre- and post-tests) indicated that in both inferential and literal components of the Reading Comprehension sub-tests there was an improvement in a large majority of the participants' scores between the pre-testing and the post-testing done as part of the research project design. These results indicate that to some degree there was internalisation of the cognitive learning strategies as described by Skuy (1996) of 'meaning', 'self-change' and 'transcendence', which are all necessary skills when attempting comprehension-type exercises.

This evidence correlated positively with the observations that I made and recorded in the researcher's journal, where I observed the internalisation of cognitive learning strategies in

the participants as the programme progressed over the six month period. These included improved tracking, self-regulation, bridging, transcendence of information, planning and self-correcting, together with more specific literacy skills that included effective summarisation skills and creative writing skills.

It needs to be noted, however, that contradictory evidence did exist that showed that internalization of metacognitive learning strategies were not internalised for all learners who participated on the IATLI and in some cases teachers reported that they had not seen any significant improvement at all in the way that these learners approached their work. This was significant as it cannot then be argued that this outcome of the IATLI was successful for all the participants, but only partially successful for some of the children. As mentioned previously I cannot discount the influence, both positive and negative, that independent variables that include extra lessons, teacher input, 'goodness of fit' relationships and maturity had a partial role to play in any skill acquisition.

5.2.4 Sub-question Four: Does this method of programme mediation enhance the school's ability to provide an inclusive learning environment?

The Likert-Type survey that was administered to the teaching staff put forward the question as to whether, in their opinion, the learning support programme fostering enhanced inclusive education in our school?" (Although the Likert-Type survey was administered at the beginning of this particular research project, the IATLI programme had been functioning with other learners and the feedback was based on the recent history of the programme and general opinion.)

Results from this question illustrated that 60.9% of the teachers believed that the mediated support system was effective in this school and was contributing to the school's adherence to inclusive education policy with regard to national educational policy as constituted in the White Paper.

When responding to this question the teachers answered according to the evidence that had been presented to them, including improvements in confidence and literacy ability in the learners who were participating, and levels of disruption to the daily teaching curriculum and extra-mural programme. Teachers also considered the perceptions that other children had to the IATLI programme, whether the programme was perceived as one that excluded the

participating children from regular education structures, which would leave one to question the extent to which the IATLI programme was enhancing inclusive education at this school.

It also needs to be mentioned that a sizable minority, 39.1% of the teachers had their doubts about the viability or necessity of the IATLI programme as a necessary component of the school's inclusive education plans. One main concern that constantly became apparent in discussion was the issue of these children missing out on their normal school lesson time. They argued that for the majority of the children who were invited to participate on the programme, time management and exposure to lessons were critical, and these children in particular could not cope with the demands of having to catch up work they missed, especially without the relative support from teachers. They also argued that having the learners miss extramural activities or attend IATLI sessions after school was far from ideal as the work overload could be overbearing and create other pathological issues that included teenage depression, anxiety and other burnout related conditions.

This line of reasoning suggests that the implication and integration of the IATLI programme was not a seamless process that could be regarded as being totally successful or effective in achieving the stated outcome of being an effective integrated programme functioning in this mainstream school.

Taking these critical limitations into account, further evidence from the researcher's journal data indicated that the learners did not feel stressed or overworked by being part of the IATLI programme. 87% of the teacher participants also indicated that the programme was necessary as an option for grade eight learners at this school. The majority of the teacher participants indicated through this response that the mediated IATLI programme was necessary and effective as a support structure to inclusive education policy at this school.

Data from the semi-structured interview process with the teachers produced mixed arguments as to the relative merit of the need for, and the extent to which, the mediated IATLI programme enhanced the school's inclusive education delivery capacity.

Certain excerpts elicited from the data point clearly to a positive response to the mediated IATLI's effectiveness. T1 mentioned the need for the support system. T3 indicated that the children would be lost without the support. T4 was of the opinion that the support programme gave them a better start to high school and that the participants would ultimately benefit from the support. T7 described how the mediated programme assisted the participants

in becoming more integrated into the school society as they could feel competent and more confident cognitively, emotionally and socially. T9 described how there was value (academic and self-esteem) if you looked at the children who had been through the programme. T10 described how the programme was effective if run properly, this pointed to effective management and dealing with exclusion concerns. T11 felt confident by what she had witnessed as she stated that in her opinion more students should be attending learning support sessions, and T12 alluded to the fact that the programme was so necessary and effective in achieving its outcomes that she would worry if the school did not offer it. This data alone can be offered as proof that in the opinions of the majority of the educators interviewed the mediated IATLI had achieved the critical success factor of enhancing inclusive education at this site. However, reservations were also raised.

Many of the teachers interviewed also raised legitimate concerns that contradicted the positive arguments and points raised in this conclusive discussion. T1 described how for some of the learners it was tough emotionally as they did not like being removed from class. T5 explained how the extra learning support was disruptive and disadvantageous, as the learners then had to catch up missed work, that the outcomes of the programme were too ambitious and that change in their abilities or confidence could seldom be seen, or accurately measured, by teachers and the learners over the duration of the programme. T11 also commented on the danger of learners missing lessons and subsequently having to catch up missed work T6 and T12 were concerned that the programme actually created a situation where the learners became too reliant on the support and 'rode on the back of the system' becoming less self sufficient than before and the support programme created a negative self fulfilling prophecy. T9 was concerned that there was always the danger of a misdiagnosis of the learning barrier which could see all the effort and input misplaced to a greater detriment of the learner and T10 was concerned about the balance between all the lessons missed and real measureable change that the programme could justify.

What was worth noting from these excerpts was that T1, T10 and T12 had mixed opinions about the legitimate worth of the programme in terms of it being a contributor to effective inclusive education at this site.

Knight (2000) examines the need for schools to integrate inclusive education into the school programme to such an extent that the ends and the means are indiscernible from one another. Although this study showed that the IATLI was working and reaching its target audience at

this particular site it was also evident that there was still resistance to inclusive education from some role-players. Some people were of the opinion that the programme could only be accommodated in grade eight and that it would not be effective in the FET phase of the school as barriers to literacy were seen as a 'bridge too far' when the work became too difficult and the pace of curriculum delivery too fast.

This view was supported by the argument that the resistance by certain teachers to mediated support was based on real concerns that had been formulated through experience. In their opinion a programme could not be counted as a success if children who needed lesson time miss out on vital components and learning experiences that were not repeated or that formed the foundation for further work. Lund and Norwich (2002) describe these tensions that exist as the 'Dilemmas of difference' where in our efforts to increase inclusion to all we can create situations where we further exclude learners.

Considering the views of Knight (2000) on effective inclusive education, and the triangulated responses and results from the interviews, the survey and researcher's journal this study reached the 'target audience' (the eight learner participants), but concerns existed as to how much teaching they missed as a result of missing lessons, and to what extent this might have affected their progress.

This aspect of the project was site-specific, and the results will be difficult to replicate with any certainty at another site. The conclusion to this question shows mixed results, often linked to educators' emotional conclusions and opinions around the topic of inclusive education.

5.2.5 Sub-question five: Have the stated outcomes of the programme been achieved?

The programme's outcomes were discussed in detail in the literature review section of the project (Harcombe, 2001). The basic specific outcomes of the IATLI stated that through the mediated learning experience, simultaneously using top-down and bottom-up methods of delivery the child would achieve improved literacy skills including phonetic analysis skills, reading comprehension skills, auditory vocabulary skills, creative writing skills, expressive language ability and reading ability.

The specific outcomes of the IATLI also aimed to develop the cognitive learning tools or strategies associated with Feuerstein's (1980) MLE. These included self-regulation,

bridging, transcendence, competence, intentionality and reciprocity, planning, acquisition of meaning and self-change.

Through the triangulation of data, including the quantitative pre- and post-testing scores from the educational assessments conducted with the participant learners and the semi-structured interviews with the participant teachers, I can conclude that this mediated IATLI programme partially achieved the stated outcomes highlighted above. What also needs to be mentioned is that the achievement of the outcomes was not uniformly evident in all the learners, but that there was evidence of literacy skill development and cognitive learning strategy acquisition to greater, and in some cases lesser, extent in all the learners.

This is supported by the statistically significant results of the analysis of the pre-and post-test data from the formal educational testing that was administered to the participant learners. The phonetic analysis (sub-test of the SDRT) pre- and post-test scores showed a positive correlation on the *Pearsons Product-Momentum Correlation Coefficient. T-tests* showed a statistically significant improvement in the test scores for the 'reading comprehension' and the 'auditory vocabulary' sub-tests of the SDRT.

From an individual point of view all the learners showed improvement in most of their scores on the SDRT post-test analysis with some learners testing resulting in limited improvement: where P3 and P5 obtained a lower score in the post-test Phonetic Analysis sub-test and P3 showed no improvement in the Reading Comprehension sub-test, P2 and P4 not showing an improvement in the Phonetic Analysis sub-test, P8 received a lower score in the Reading Comprehension post programme sub-test and P5's results deteriorated in the post-test of the Auditory Vocabulary sub-test. Besides these exceptions the improvements noted in the evidence were all significant indicators that the mediated IATLI programme had had a positive effect on the literacy skills and coping ability of the participant learners.

As mentioned previously in this conclusion the successful mediation of the cognitive learning strategies was supported by excerpts from the teacher participant semi-structured interviews and excerpts from comments made by the participant learners in the researcher's journal.

The critical success factor that was examined by this question was whether the IATLI programme managed to be integrated successfully into this independent school. This school was very determined and committed to implementing inclusive education policy. The senior management team and the governing body took the official inclusive education policy

seriously and made it a focus of the school ethos. Historically this independent school was known for its dedication and commitment to facilitating the academic, social, spiritual and emotional development of every learner. Teachers were contractually obliged to offer extra lessons for their subjects when requested by the learners or their parents.

When the researcher approached the headmaster and the directorship of the school with the IATLI support programme on the grounds that extra lessons in subjects did not actually equip certain learners with the cognitive functioning skills needed to be successful with academic work, and that the IATLI integrated both the mediation of literacy skills with the cognitive learning strategies first described by Feuerstein (1980), they were very interested, and gave the researcher the school's full support.

The main reason that this sub-question was so important for this study was that this was an action research, participatory, case-study intervention that was based at one particular site. The IATLI has been researched in clinical settings and has been seen to show aspects of success, but this critical success factor aimed to see if the programme could achieve the outcomes of improved literacy ability and cognitive learning skills in a real-world setting at the micro-level as described by Owen, (2007).

The data collected in this study revealed mixed results as to whether the IATLI was reaching its target audience. As this discussion shows the majority of the teacher participants said that the benefits of the IATLI programme were reaching the learners and that the content of the IATLI curriculum was accessible within the framework of the school's timetable, and that attendance on the programme actually made some of the learners more positive and motivated to work in their classes.

The one-on-one (learner and mediator) relationship as a critical success factor

The analysis and discussion chapter also considered the one-on-one mediator and learner relationship and the establishment of a 'goodness of fit' scenario. This is seen as a critical success factor with regard to the IATLI programme achieving its outcomes. The relationship between the mediator and the learner has a direct correlation to the acquisition of literacy skills and metacognitive learning strategies.

The data indicated that most of the teachers interviewed saw value in the impact of the one-on-one relationships established and revealed that the individual attention had a significant role to play in observed improvements in self-esteem, confidence, literacy skill acquisition

and the internalization of cognitive learning strategies. Two specific examples were reported where the one-on-one relationship was seen to have had a direct, positive effect on academic performance this was for P5 and P6. T6 also commented that with the large class sizes a learner like P4 really needed the one-on-one mediated interaction provided by the IATLI intervention.

The data examined from the teacher interviews supported the observations made in the researcher's journal that for most of the participants the one-on-one experience was beneficial. It is difficult to make the assumption that the improvements in academic performance and self-esteem were directly a result of the one-on-one mediated sessions as the data provided us with a speculative answer which could be the result of other intervening variables. This observation regarding intervening variables supported the findings of Au and Carroll (1997) who found that the experience of the teacher was a mitigating factor in determining the results of the study. This is relevant as the experience of the mediator in the one-on-one relationship had a direct influence on the success of the programme.

However, the convergence of the data did indicate that there was a positive causal relationship between improved literacy skills, cognitive learning strategy and self-esteem for the eight participant learners and their attendance on the programme.

The extent to which the IATLI was a success or not can be further examined by investigating Theme Two from the semi-structured interviews with the teachers. Theme Two investigated the effectiveness of the IATLI programme in the inclusive education setting. The sub-theme investigated the IATLI as an effective learning support mechanism facilitating inclusive education.

Excerpts from the commentary pointed to the perceived successful integration of the programme into the school community, and the success of the programme in reaching its target audience. T1: *"If the school is going to take in children with problems who want to be in an inclusive school, you've got to have a support mechanism and that's what your programme offers. So I think it's important."* And T3: *"Absolutely. Those children would be totally lost, even worse off if they didn't have you to encourage them to give them (support) ……. It's brilliant and we want inclusive education."*

Both of these statements indicated that the IATLI programme was seen as necessary, and that it was reaching its target audience. The statements were supportive of the programme and

saw it as a necessity in the school to help the learners internalise and then apply the necessary cognitive tools that would make them effective learners. Although these were general comments made by participant educators they were both the result of successes observed by those teachers during their daily teaching experiences. These excerpts were also referred to when providing evidence for the effectiveness of this programme in contributing to inclusive education at this site. This was relevant as there was also an integrated relationship between my sub-questions as it could be argued that if the programme was effective in reaching its target audience and achieving its outcomes then it could be argued that it was also then to some degree an effective agent that was contributing to improved inclusive education at the school.

The following excerpt from the researcher's journal supported the argument put forward in this discussion: P3 and P7 indicated to the researcher: *"They were happy to be involved and felt that this was a worthwhile experience."*

This extract supported the teacher's views that the IATLI programme was 'reaching its target audience'. The success of the programme can only be analysed when weighed up against the impressions and responses of the learners who actually had to do the extra work involved with the programme. This extract was a reflection of most of the eight learners who participated in the programme. This assertion could be made with reference to the researcher's journal where comments made by the participants during mediated support sessions indicated that they were positive about the programme and felt that it was a worthwhile experience both for their skill development and their emotional development.

5.3 Conclusions when investigating the power relationships that prevailed for the duration of this case-study

The intention of the mediated IATLI programme was to develop reciprocal relationships with each of the eight participant learners. It was intended that the one-on-one relationships were true 'partnerships in learning' that reflected an equal power balance between the mediator and the learner participants.

Although extracts of the research indicated that the majority of the learner participants enjoyed the mediated therapy sessions, the true nature of the equal balance of power needed to be unravelled and contextualised. Each one of these learners was recommended a possible

candidate to the researcher by their parents and concerned teachers who had a vested interest in trying to provide opportunities for literacy and learning skill remediation.

Even though the IATLI mediation was intended to be non-threatening, meaning-based and specifically tailored to the interests of the individual children, the parent/teacher referral and the top-down structures that existed as a result of the school's control and direction of the programme and its implementation, created a system where attendance and choice was one-sided and therefore represented an unbalanced power dynamic.

The researcher was in a position of power throughout the duration of this case-study. The researcher had the choice of when and how to conduct the therapy sessions which the learners did not. Even though the researcher's field notes revealed that the participants were frequently asked about their emotional state and desire to interact in a therapy session, there was still the factor that the researcher, as a staff member, was imbedded in the power structures of the school. Walton (2011) and Masson (2004) explained how the opinions and insight of the learner participants provide mediators with valuable insight. Walton further explains how the goal with research is to work 'with' learners rather than 'on' them.

Although this variable was considered and accommodated from the outset of the research project, it cannot be claimed with certainty that equal and reciprocal relationships existed. It also needs to be considered that the structures and institutional systems of an independent secondary school (as was the case at the site of this project) place an emphasis on hierarchical structures where grade eights are considered and treated as 'juniors' who follow instructions without much debate and consideration of their opinions.

5.4 Conclusions when comparing this study to other studies discussed in the literature

The results and conclusive findings of Calhoon's (2005) study described in the literature review can be compared in some areas to the findings of my study. Calhoon investigated the critical success factors of a mediated one-on-one literacy support programme called the *Peer Assisted Learning Programme* (PALS) which was piloted in three schools in New Mexico (USA). The results of Calhoon's study relied on quantitative data analysis gathered from pre- and post-testing of the learner participants and the tests used were taken from a standardised literacy battery called the *Woodcock Johnson Test of Achievement.*

The results from Calhoon's (2005) study showed a statistically significant improvement in literacy ability at the conclusion of the project. These results compared favourably with the

quantitative results elicited from my study. The pre- and post-test results derived from the mediation of the IATLI programme using the SDRT with the eight learner participants correlate to Calhoon's results as they also showed a statistically significant improvement in literacy ability for the majority of the eight participants.

What made this comparison between Calhoon's study and my IATLI intervention significant was the comparison between similar techniques of data analysis, but more important was that both programmes were based on the underpinnings of constructivist learning theories and mediated one-on-one learning methodologies. These are the only areas of comparison that are significant as the methodology of the PALS project differed significantly from the IATLI project that was located at one site only and focussed on eight individual case-studies.

In the literature review I described Yaden's (2000) study that examined a system of literacy enrichment that focussed on a meaning- and theme-driven approach. This approach was similar in construct to the constructivist design of the IATLI programme which also utilized, as a core component, a meaning based theme driven approach. Yaden's study showed that his sample of learners had a significant gain in their assessment scores at the end of the programme. Au and Carroll's (1997) study, described in the literature, in which the KEEP literacy programme was implemented in various schools in America had significant, positive reports of the value of theme based constructivist methods of mediation, similar to the IATLI programme where the design was also based on constructivist theory. Results from the KEEP programme showed a significant improvement in literacy in the majority of learners who participated in Au and Carroll's (1997) study. When examining the results of the data elicited from the teachers who participated in the semi-structured interview process T1, T5, T6, T7, T8 and T11 all indicated that they had seen the emotional and educational benefit from learners as a result of them specifically attending the mediated IATLI programme which followed a design grounded in constructivist theory and utilizing the theme based and meaning-driven approach to literacy instruction.

Although there were significant differences in the sample sizes and design between Yaden's (2000), Au and Carroll's (1997) and this research project the data did indicate that the mediated IATLI project supported the claims made in Yaden's and Au and Carroll's studies where a literacy teaching initiative grounded in a constructivist, meaning-driven approach could be successful at improving the literacy and emotional development of participants.

My research study was conducted as a participatory action research initiative, using one small case study consisting of a small, defined group of participants at one school site. The nature of how this study was conducted and the circumstances of the intervention mean that there are obvious limitations that influence the replication of the study at other sites in the future. However, this study can be replicated at future sites if the effects and influences of unique independent variables are fully documented and accounted for. What has become clear in this study in its authentic, real setting is that experiments and controls are near impossible to conduct with people in their natural environment when assessing their interactions in their daily lives. This view is supported by Yin (2003).

Validity of my study can be provided by comparing it to similar studies conducted using similar circumstances of both programme and data analysis, thus allowing my study to contribute and support the body of existing evidence from other studies. Hence the reason for the comparison of my study to similar studies using programmes with objectives that were comparable to the critical success factors of my study. These findings concluded that critical success factors explored in my study indicated that the mediation of the IATLI learning support programme to improve literacy ability and develop cognitive learning skills was possible in real, grounded settings.

5.5 Individual learner profile description at the conclusion of the mediated IATLI programme for each of the eight participants

P1

When he entered the IATLI programme P1's self-esteem and confidence to be a successful learner at school was initially described as poor according to the EGO analysis. (See Appendix 1.) The researcher's observations indicated that he gained in confidence and in an enjoyment of participation during the six month mediated process. At a social level P1 developed significant and healthy friendships with his peers which were not evident at the inception of the programme. This observation was supported by T10 and T11 who reported an improvement in self-confidence and communication skills in P1 and another teacher who observed an improvement in participation and interaction with his peers and teachers. Besides what was noticed by the researcher in the mediated learning support sessions, there was no evidence from any of his teachers that were interviewed that showed that P1 had internalised and demonstrated any mediated cognitive learning strategies. T6 and T8, for example, both noticed an improvement in P1's writing ability and test performance

respectively. This observed, improved ability to express himself in writing and comprehension was supported by the post-test scores on the sub-tests of the SDRT. There was a small increase in the Phonetic Analysis comparative scores, and the largest improved score out of all the participants in the Reading Comprehension post-test scores to a level that was grade appropriate. There was also a significant improvement in the Auditory Vocabulary sub-test scores on the post-test. These observations discussed here and SDRT post-test scores indicated that in the output phase in the thinking process certain learning skills had been internalized by P1. These included; participatory output responses, adequate expressive verbal tools and mature communication modalities. This was in line with the internalization of the metacognitive learning strategies of 'sharing', 'intentionality and reciprocity', 'self-change', 'transcendence' and 'meaning' (Skuy, 1996). P1 still experienced a level of situational poor self-esteem in his home environment partially due to his poor relationship with his father.

P2

In the researcher's opinion and as reflected in the various data sources, P2 was observed as displaying a significant improvement in his self-esteem and self-efficacy over the six month period of the IATLI's integration into this school site. As previously stated in the learner profile, P2 came from a remedial school with very small class sizes and his temperament type was slow to warm. He was initially withdrawn, anxious, and very quiet and did not integrate with his peers. (See Appendix 2.) Two of his teachers, T7 and T5, reported in the semi-structured interviews that P2 had shown a significant and noticeable improvement in his self-esteem, with two of the teachers noting an improvement in his socialization and integration with his peers during lessons. This corroborated with the ethnographic observations, recorded by the researcher, who observed that P2 became an active participant in his own learning by showing initiative, confidence when answering questions and an excellent work ethic. His mother continued to be very involved and supportive of his academic development and needed to be considered as being a causal factor contributing to his success.

T5 observed a direct improvement in P2's literacy skills and in his academic achievements with his grades improving from marks of 40% to marks of 60%. This can be corroborated by results from the SDRT sub-tests that showed certain significant improvements. In both the Reading Comprehension sub-test and the Auditory Vocabulary sub-test P2's scores reflected a significant improvement between the pre-test and the post-test. Improvement in

comprehension ability and auditory vocabulary scores and T5's observations show that this improved ability to complete comprehensions showed that some mediated skills were internalized and transcended from the one-on-one sessions to authentic classroom learning situations. What was also evident from the observations of the mediated sessions was P2's improved vocabulary from the 'sound family' activities, tracking ability and creative writing ability. No teachers reported any negative comments regarding P2's academic development, however there were no other teachers who singled out P2 for academic development.

T11 noted a significant improvement in his cognitive learning strategies and singled out 'mind mapping' skills as the most noticeable change to indicate how P2 approached his essay writing. This demonstrated that P2 had internalized the mediated cognitive learning strategies of 'self-change', 'planning' and 'self-monitoring' which are essential cognitive skills that enable the learning process to be effective (Feuerstein, 1980; Harcombe, 2001).

P3

One of the most significant findings from the EGO analysis was that P3 struggled with asserting self-confidence and self-esteem in situations in which he was not comfortable. (See Appendix 3.) P3 also spent his primary school years in a remedial school and the change to a mainstream school had had a negative effect on his confidence. The researcher observed that this situational negative self-esteem persisted throughout the duration of the mediated support programme. P3 developed a very strong and positive relationship with the mediator and was confident and positive throughout the duration of the programme. The semi-structured interviews with his teachers revealed that when he was comfortable with the work and did not feel pressurised, he came across as a confident learner. In terms of noticeable improvements in his self-esteem the evidence in the researcher's journal pointed to his positive relationship with the mediator. The evidence showed that some of teachers, including T1, T7 and T10 commented on an improvement in communication, self-confidence and interaction, and attribute this change to the IATLI programme. It was also observed that P3 continued to develop strong friendships with his peers and participate in all extra mural activities.

Donald, Lazarus and Lolwana (2011) describe how, consistent with the tenets of constructivism, promoting success and a sense of competence in learners is essential to building confidence. This sense of confidence then promotes a sense of agency in the learner which in turn translates as a control of one's life and the learner develops a strong internal locus of control. The mediated learning support sessions and the evidence from the semi-

structured interviews with the teachers (notably T10) did indicate an improvement in confidence which could be interpreted as an improvement in agency, where P3 became personally and actively engaged by taking initiative and control.

P3 showed a marginal improvement in his Auditory Vocabulary sub-test scores from the SDRT post-test which indicated that he had improved his sight-word pool and vocabulary. This confirmed that he could recognize more words in text and could relate more meaning to a greater amount of words than the pre-programme SDRT test reflected. This evidence can be interpreted as an improvement in Feuerstein's (1980) mediated cognitive learning strategy of an internalization of 'meaning'. This test score improvement can be corroborated with the researcher's observations (recorded in the researcher's journal) that showed that his tracking ability and reading ability had all improved over the six month period. However, no development in his reading comprehension ability was evident from the SDRT sub-test and his Phonetic Analysis score deteriorated between the pre- and post testing process. This data implied that the IATLI had only marginal success in effectively mediating literacy skills to assist P3.

P4

P4 did not display any noticeable changes in behaviour or agency (being actively engaged, taking control and initiative) between when he started to participate on the programme and the end of the study. The majority of teachers reported (in the semi-structured interviews and in general day to day feedback recorded in the researcher's journal) that P4 remained a passive learner who did not engage with the work presented in lessons and made a minimal effort to interact with his peers. After the six month period P4 had not developed any significant friendships amongst the learner population. (See Appendix 4.)

Throughout the entire series of interventions P4 did not indicate that he was unwilling to attend the learning support and he had reported that he enjoyed the sessions. At the conclusion of the intervention programme P4 remained on medication for depression and his home circumstances had not changed. He still felt displaced and alienated as a result of his move from his school in Cape Town and lack of quality time with his father. Only three teachers made positive comments in the interviews regarding P4's emotional development.

What became evident from the various data sources was that a significant contributing factor in P4's integration and participation in classroom activities was the 'goodness of fit'

relationship that he established with the teacher concerned. Evidence from the semi-structured interviews with the teachers produced mixed results pertaining to P4's academic progress and literacy skill development, the majority of responses indicated that no signs of development were evident. T7 made frequent references in the semi-structured interviews to progress that he had noticed in P4, particularly in the development and bridging of Feuerstein's (1980) mediated learning skills. T7 noted that he had improved on his organizational ability, his confidence and competence. This could be linked to the internalization of the mediated learning skills of 'self-change', 'transcendence', 'self-regulation' and 'competence'. T7 took a vested interest in supporting and developing the self-esteem and skills of P4 and established a 'goodness of fit' relationship which was necessary for P4's progression and resulted in a positive outcome. T6's observations supported the positive views of T7 and she reported that she had seen a noticeable improvement in the confidence of P4 over the duration of the IATLI programme. No evidence suggested that P4 developed an 'internal locus of control' regarding a sense of agency that he applied independently in learning circumstances where he had to be self-motivated or work alone.

Pre- and post-test IATLI scores on the SDRT sub-tests indicated that for Auditory Vocabulary and Reading Comprehension P4 was functioning at his grade level and the post-test results showed improvements. Phonetic Analysis post-test scores did not improve from initial test scores. However the results indicated that for this SDRT sub-test P4 was performing at the appropriate grade level. According to the SDRT tests P4 was the strongest of the eight learners as far as literacy ability was concerned but had repeatedly failed to actualize this potential in the mainstream class environment, with the notable exception of his performance in T7's class. Unless the activity was 'scaffolded' by the mediator in learning support sessions, evidence suggested that P4 would rarely translate mediated skills into academic work or other learning experiences. He still did not show planning abilities when attempting creative writing tasks. He did improve on his vocabulary, sight-word pool and his tracking ability as evident from observations taken from actual mediated sessions.

P5

It was reported in the EGO analysis that P5 was a confident and outgoing learner with a temperament that was conducive to fitting into the classroom environment. (See Appendix 5.) It was easy for his teachers and the mediator to establish a 'goodness of fit' relationship with P5 from the outset, which included any teaching interactions they had with him. This positive attitude remained constant throughout the process of the mediation and P5 had established a positive social dynamic with his peers and interacted and integrated well in class situations. He continued to act out at times and be distracting when he felt threatened by assessments that might single him out in class as being academically weaker. We must remember that P5 had spent primary school in a remedial school with small classes and no focus on academic success or competition amongst peers for success (recorded in initial EGO analysis). As this aspect of P5's personality remained constant no discernible change was noted by his teachers with regard to self-esteem and confidence.

It was evident from the EGO, teacher reports and the mediator's initial observations that P5 was impulsive, did not finish tasks and lacked perseverance to remain focused on activities. T8 did report in the semi-structured interviews that she had noticed an improvement in his willingness to stay on task and complete activities. This indicated that he had internalized the mediated learning strategies of accepting 'challenge' and 'control of behaviour' and displayed a level of 'intentionality and reciprocity' (Skuy, 1996). When a person develops belief in their own ability to be successful at a task it governs their choices to maintain effort in a situation (Bandura, 1997). This improvement in self-efficacy was observed in P5. Further evidence elicited from T6 suggested that P5 had demonstrated an improvement in his ability to work independently and that he had shown evidence of applying cognitive learning skills learnt in the IATLI sessions within class activities. This evidence suggests that the IATLI was responsible for the development of the cognitive learning strategies of 'bridging' and 'transcendence' as described by Skuy (1996) and Feuerstein (1980).

No evidence emerged to suggest that P5 internalized literacy skills that were mediated through the 'top-down and 'bottom-up' methods used in the mediated IATLI programme. T3 reported that P5 was not coping with the academic demands of grade eight. That no evidence emerged to suggest any noticeable usage of literacy skills in the classroom learning environment or in class activities implied that the noted improvements in literacy skills in the mediated sessions (researcher's journal) were not effectively bridged into the classroom

learning environment. The researcher did record that P5 improved in his creative writing ability, his sight-word pool, informal reading and tracking ability, but these skills had yet to be transcended into other areas of schooling. The scores from the SDRT pre- and post-tests of the three sub-tests showed mixed results. Both his Phonetic Analysis and Auditory Vocabulary post-test scores showed a significant deterioration in performance and indicated that he was still below grade level (Grade 6 level for Phonetic analysis). The Reading Comprehension post-test score did show a significant improvement that indicated that P5 was performing at 'grade 8 level' for this sub-test (34/60 to 42/60). This can be interpreted as an indication that some literacy ability (known sight-word pool) and cognitive learning strategies (meaning and self-regulation) had developed over the course of the IATLI intervention. There were other variables that could have had a causal effect on P5's learning development; these could have included the input from teachers at school as his temperament proved to be one that was conducive to the classroom environment and P5's relationships with his teachers were very positive. P5's family dynamic remained a concern, where P5 suffered from anxiety over the divorce circumstances and subsequent negative relationship between his mother and father. His parents did however remain very involved in his academic progress and learning support.

P6

P6's personality characteristics and temperament remained constant throughout the six month duration of the IATLI mediation. (See Appendix 6.) It was recorded in the initial observations and interviews of the EGO analysis that P6 was a confident learner with a temperament type that easily adapted to the classroom learning environment. His background in remedial education institutions combined with his competitive disposition, often resulted in him being anxious and stressed in class when faced with situations that he could not cope with. As a result he would withdraw from interaction. It was observed by some teachers (T3 and T11), and noted in the semi-structured interviews that there was an improvement in his interaction and socialization with his peers and the teacher during classroom activities. It was judged that this improved social interaction was directly linked to improved competence and self-esteem. This improvement affected the causal relationship between other critical success factors; so we can conclude that the self-esteem improvements noted were linked to P6's improved performance on academic activities.

P6's scores from the SDRT sub-tests indicated that he had effectively bridged literacy skills from the IATLI support sessions. Although he scored below his grade level in both the Phonetic Analysis and Auditory Vocabulary pre-IATLI sub-tests his post-test scores for these SDRT tests showed a significant improvement that placed him within his grade parameters. The Reading Comprehension sub-test scores in the post-test indicated that he improved from 42/60 to 46/60 thus placing him within his grade parameter. The researcher also observed during the mediated IATLI sessions that certain literacy abilities had emerged. These included improved tracking skills, informal reading ability (as less hesitations, omissions and word substitutions were observed) and improved performances in creative writing activities the latter revealed a wider vocabulary (words internalized in sessions), better planning skills and improved ability to relay meaning. There was little evidence from the teachers through the semi-structured interviews to support the improved scores from the SDRT and the researcher's observations described here.

One of the most significant changes observed by teachers (notably T9) through the semi-structured interviews was an improvement in P6's planning and organizational skills when applying himself to creative writing and comprehension-type tasks. This improved organization and self-efficacy could be linked to the cognitive learning strategies of Feuerstein's MLE as described in Skuy (1996) of 'planning', 'intentionality and reciprocity', 'competence', and 'self-change'. This observation recorded in the interview data showed that, for one of the critical success factors of this research project of observed mediated cognitive learning strategies there was an indication that a level of success had emerged from the data for P6.

P6 continued to have a positive and supportive home environment and continued to be involved in a wide variety of sports and cultural activities. His interactions with the mediator of the programme were positive with a goodness of fit relationship was established early in the process. This was a variable that had a positive influence on the successes of the mediated programme as observed in the data.

P7

The data from the semi-structured teacher interviews, the SDRT sub-tests and the researcher's journal all indicated that the mediated IATLI learning support programme had the most significant positive effect on P7 in accordance with the critical success factors described in the research questions of this project.

P7 completed the Blue Level sub-tests from the SDRT series which was a more advanced series than the Brown Series. His scores all increased between the pre-test analysis and the post-test analysis. Phonetic Analysis sub-tests improved from 16/30 to 29/30, Auditory Vocabulary sub-test scores improved from 24/30 to 29/30 and the Reading Comprehension Sub-test scores improved from 43/60 to 46/60. These scores were all in the range of grade nine level. T1 noted in the semi-structured interviews that P7 had shown progress in academic performance. The researcher also observed an improvement in P7's sight-word pool, creative writing with greater and more varied vocabulary usage and meaningful expression evident, improved informal reading with fewer hesitations, omissions and word substitutions noted, P7 was also reading with more confidence and understanding. All this data indicated to the researcher that P7 had improved his literacy skills over the duration of the programme.

The EGO analysis revealed that P7 came from a remedial school and although he had a temperament that was adapted well to the school and classroom environment, he was initially shy, insecure and suffered from a situational low self-esteem. This happened when confronted by classroom activities he could not cope with and peer pressure. (See Appendix 7.) T10 and T11 had observed a visible improvement in confidence and self-assurance in P7. T1 observed improved social interaction ability and self-esteem when P7 participated in class activities with his peers. Positive causal relationships that included his supportive home environment and father involvement cannot be discounted as having had an effect on the development of P7's self-esteem but the data does indicate that the mediated IATLI programme was a contributing factor to the observed improvements.

Testing and evidence pointed to P7 as having weak successive processing ability in the EGO analysis. He struggled to organize information, pay attention to detail (when attempting writing and reading tasks) and his self-efficacy was low. The researcher's journal entries and observations from T3, as recorded in the semi-structured interviews all indicated that P7 had displayed an improvement in his planning and organizational skills when attempting tasks. This can be directly linked to Feuerstein's MLE approach to the cognitive learning skills of 'planning', 'self-regulation', 'self-change' and 'intentionality and reciprocity'. The fact that data also indicated improved performances on reading and creative writing tasks suggested that he had also carried across the cognitive learning strategy of 'meaning' (Harcombe, 2001).

P8

P8's confrontational temperament and reactive coping mechanisms when feeling threatened in social and educational settings was highlighted in the EGO analysis. (See Appendix 8.) P8 had spent many of his primary school years in remedial schools and attending learning support sessions. P8 had very supportive parents and showed curiosity and learning ability in areas of interest to him. (He and his father were sports fishermen). His disruptive behaviour in class was related to his feelings of insecurity and anxiety and low self-esteem associated with years of underachievement, failure and frustration with learning. At times he did not attempt to disrupt lessons but rather became quiet and withdrawn from interaction.

The researcher observed and noted that he had established a positive 'goodness of fit' relationship with P8 during the mediated IATLI sessions. The structure and design of the IATLI sessions required that all activities were based around themes that were of personal interest to the participant learner. As this outcome was achieved it became clear that P8 had gained from the mediated process. The data from the semi-structured interview process with the teachers revealed that T12 observed an improvement in P8's self-esteem and social interaction. T12 observed that P8 was more willing to participate in activities. This improvement was directly connected to the research question: Could improvement of self-esteem of any participant be linked to participation in the IATLI? If so, it would be significant in the light of this study. The improvement in P8's self-esteem that was described in the evidence had positive implications for his learning and development. The development of a positive self-concept allows a person to feel good about themselves, enables them to engage positively with others, helps develop a strong internal locus of control and helps build up their assertiveness (Daniels, 2002). The development of self-confidence and a strong internal locus of control can be linked to Feuerstein's (1980) theory about cognitive learning strategies of 'reciprocity' and 'competence'.

There was limited evidence from the interview data to suggest that P8 had significantly improved his literacy ability over the six month duration of this case study, and in T6's opinion P8 had not directly benefited from the IALTI. The testing data from the pre- and post-tests of the SDRT did show improvement in some areas. P8 was tested with the Blue Level and his scores indicated that his pre-test base line scores placed him at his appropriate grade level. His Auditory Vocabulary results (20/30 to 23/30) indicated improvement and his Phonetic Analysis scores (12/30 to 17/30) also showed improvement. The improvement in his

Auditory Vocabulary scores indicated that he had increased his sight word pool and his ability to find meaning in words. What can be interpreted from the Reading Comprehension post-test scores was that P8 had shown a degree of ability to comprehend literal and inferential information and summarize meaning in text that was appropriate for his grade level. Even although his post-test results deteriorated from his pre-test results for Reading Comprehension he still scored at grade eight level in both assessments. These literacy skill improvements were also seen in the IATLI sessions as P8 created competent theme-based stories in the text-based 'creative writing' activity. Here we saw an acceptable level of vocabulary usage, descriptive meaning and logical processing. This observed literacy skill development was significant when considering the critical success factor of this study i.e. the one that explored the evidence pertaining to literacy skill acquisition.

5.6 Concluding arguments

The main research question states: What are the critical success factors of the Integrated Approach to Literacy Instruction mediated to selected grade eight learners at an independent secondary school in South Africa?

The answer to this question, specifically related to this particular site-based case-study indicated the following:

1. The IATLI programme effectively developed certain aspects of the literacy ability of some of the learners over the six month period of its application in the school with the eight learners actively involved. No evidence emerged that all the participants developed literacy skills to the same extent. For some learners very little or no evidence confirmed, through the deductive process of evaluating SDRT test scores, or evaluating semi-structured interviews, that literacy skills were improved or developed. However, to varying degrees the evidence suggested that the critical success factor of observed literacy skill improvement was observed for some. However, in some cases it was also determined that the individual ecosystemic circumstances of each learner were influential to the extent in which empirical evidence of literacy skill development was observed, and therefore these causal factors and their impact could not be ignored, both positive and negative influences being considered. The evidence from the SDRT and the general observations recorded in the researcher's journal suggested that the participants with the lowest base-line scores on the three literacy tests found progress difficult.

2. Evidence suggested that the IATLI intervention managed to mediate the application of various significant cognitive learning tools to seven of the learner participants over the six month period. Responses from educators sited 'organizational ability, or self-regulation as a common observed development. These were significant findings for this study even if the results were not consistent for all the participants. This conclusion also needed to be considered within the parameters of the programme and other positive contributions from independent variables these included teacher input, parental involvement and other learner support initiatives that made use of extra lessons. We could also not discount other validity question marks such as those of attrition and natural maturation (McMillan &Schumacher, 2010). Even after the consideration of these other causal variables (including socio-economic, emotional and educational development) the sub-question sought to establish whether there was any observed internalisation of cognitive learning strategies by the learner participants. In this case evidence did suggest there was indeed internalisation to varying degrees of 'self-regulation', 'competence', 'transcendence', 'self-change', 'meaning', and 'intentionality and reciprocity'. These accorded with Feuerstein's (1980) mediated learning strategies, as described by Skuy (1996) for most of the learners.

3. The IATLI programme mediated to assist individual learners as part of the greater integrated school academic programme was partially successfully as conducted at this particular site. Issues that included the possible negative effects of excluding children from the formal school structures, the extra workload, and the missing of teacher input when the learners were out of class necessitate that more research into the seamless integration of learner support programmes need to be done. The extent to which this mediated intervention enhanced inclusive education delivery at this site remained a contested aspect of this project. Triangulation of evidence from the semi-structured interviews, the Likert-Type survey and comments recorded from the learners in the researcher's journal pointed to this programme having had a positive influence on inclusive education at this school. However, some teachers did think that this programme was either not necessary or had a negative impact on the participants learning. The extra work and disruption placed more pressure on children who were already struggling with their workload or emotional vulnerability. These concerns were raised by Lund and Norwich (2002) who discuss the vexing question of 'excluding to include'. In their writings on the 'dilemmas of difference' where they explain the dichotomous and conflicting struggle between the attempt to provide support and integrated structures to overcome barriers to learning (so as to include learners and reduce their

alienation from the learning process and increase their access and participation), yet we often still create a situation of labelling, differentiating and excluding learners. Another concern is that often our inclusive education policies and initiatives do not really do enough properly to provide opportunities for learners with barriers. The findings from my study indicated that this programme's ability to be an effective contributor to inclusive education policy at this site were evident but not wholly conclusive.

4. Sub-question two examined the critical success factor of self-esteem development in the eight learners who participated in this project. Donald (2002) and Harcombe (2001) described how a positive self-esteem, self-efficacy and confidence are necessary emotional characteristics for a learner needs to internalise material in a learning environment if he/she is to be successful in classroom interactions, peer interactions and work application.

What clearly emerged from the data collected in the EGO analysis was that all the participants lacked confidence and exhibited a situational low self-esteem when confronted with aspects within the learning environment and the broader school diaspora. The triangulated data evidence from the teacher interviews, and the researcher's journal indicated that there was a noticeable improvement in the self-esteem and in some cases subsequent self-efficacy and confidence of seven of the learners who participated in this study. This positive outcome validated the critical outcome of the mediated IATLI programme's ability to be a contributing factor that promoted the self-esteem of the participants. Therefore a reliable conclusion can be made to infer that the mediated IATLI programme had a positive effect on self-esteem development.

This conclusion needed to be considered in light of other contributing, causal variables that could also have had a positive impact on the participants' improved confidence and self-esteem which included the establishment of 'goodness of fit' relationships with educators, maturity and home environment influences. It is also worth noting that convergence of the data indicated mixed opinions regarding P4's self-esteem development and he remained generally withdrawn and depressed at the conclusion of the study. However, there were intra- and interpersonal variables that needed to be considered that were major factors when determining his emotional disposition. Temperament type and the learner's background history of failure were also causal variables that influenced the extent to which a learner internalized a sense of personal self-worth.

Finally the one dynamic that needed to be identified from this study was that although the research sub-questions examined the critical success factors of the mediated IATLI intervention project separately, there existed a critical relationship between them. As described in the 'logic model', no aspect of this study can be claimed as established fact from supporting data without considering the negative and positive influence of independent causal variables. It may be argued that as a learner improved and developed certain cognitive learning strategies he/she would be better equipped in learning situations to access literary skills. This literacy skill development could then result in better understanding and performance on reading and writing tasks which would in turn have a positive effect on situational self-esteem development. This argument allowed me to conclude that even data that indicated successful development in one critical area, for a certain learner, outlined as a necessary critical success factor for this study, implied that there ultimately could be a positive correlative relationship between other success factors outlined in another sub-question of this study.

5.7 Significance of the findings of this study for the wider educational community and national education structures

The Draft National Strategy on Screening, Identification, Assessment and Support (2005) outlined how legislation should enhance the right of every learner to attend the site of learning of their choice, preferably in their area. This said, a range of learning support opportunities and a level of structural support should ideally be available irrespective of where the learner chose to receive his education.

The Draft National Strategy on Screening, Identification, Assessment and Support (2005) highlighted the roles and responsibilities of the educator as requiring an understanding of inclusion and the diverse needs of learners including those with disabilities. Learning programmes and materials as well as assessment procedures needed to be accessible to all learners and accommodate the diversity of learning needs in order to facilitate learners' achievement to the fullest.

This study aimed to produce findings that would contribute to the body of research that supported and promoted the achievement of the above mentioned outcomes described in the Draft National Strategy.

At the site-based level (school targeted for this study) the evidence had shown that the mediated IATLI learning support programme had achieved a certain level of success. The evidence from the case study analysis indicated that the data showed to varying degrees that the eight participants' self-esteem and self-confidence had been directly influenced and improved by their participation on the IATLI programme. The data also showed that to varying levels there was clear evidence to suggest that mediated learning strategies described by Feuerstein (1980) were internalized by the majority of the participants and then applied into classroom learning situations. The study also concluded that even with the criticisms of integrated support programmes by some teachers who participated, this learning support programme had a positive effect on the school's ability to provide accessible education to a wider learner audience in line with national inclusive education policy.

These findings are significant at the community level as the assessment and learning support structures successfully integrated at this site could be shared with other schools in the immediate catchment area. Development of teaching staff and community members to become effective mediators/facilitators of the IATLI or similar programmes that mediate learning skills could be possible through sharing of skills. This type of community sharing initiative would be in line with National Policy directive that encourages schools to share good practice.

The findings of this case-study as discussed here are also significant on a national level. It is essential for schools and communities to utilize the resources that they find themselves with. In many parts of South Africa access to educational psychologists and qualified remedial educators is not a practical reality and this type of support is often exclusive in nature and frequently only structured on a 'deficit' or medical model of identification of learners with special educational needs. The description of how this programme was implemented and the results that were described in the findings are relevant to other schools around South Africa for a number of significant reasons. Firstly they contribute to inclusive education strategy and policy development. Secondly educators and community members can be identified and trained to become mediators who facilitate one-on-one mediated learning programmes.

This is a more realistic and sustainable approach to enhancing education nationwide than waiting for services that would be difficult to implement on a national level particularly in areas of our country that are geographically isolated or underprivileged. This is in line with the extracts from the data triangulated and described in this chapter.

5.8 Recommendations for further study

The model discussed in this project relating to the IATLI Programme could be attempted at other similar sites, and it could also be implemented at schools that exist and operate in diverse socio-economic environments.

This model could also employ a longitudinal research design that would investigate the literacy skill development, self-esteem development and cognitive learning skill use of a cohort of learners over a significantly longer period of time, possibly following their progress into adulthood.

As mentioned previously, one idiosyncrasy of my study was that all the learners who participated were male. It might be relevant or interesting to conduct a similar study with a group of female learners and examine the critical success factors that emerge. In my experience the gender of the participants was not really a significant factor with grade eight learners. In previous mediated situations in clinical settings and at this site, girls had been included on mediated support programmes and no significant differences in performance or success were noted when compared to male participants. It emerged that the gender of a participant was a factor to consider however, the emotional state, temperament, cognitive learning barriers and socio-economic factors played a greater role in influencing the impact of a mediated learning programme.

In retrospect I would have conducted more semi-structured interviews with the participant staff members possibly at the outset of the intervention; at the time this was not a practical objective to undertake. I would also have carried out in-depth interviews with the participant learners at the conclusion of the IATLI intervention programme. This data could then have been analysed to gain an insight into the participants' opinions in light of the critical success factors described in the research questions. At the time this was not a practicality afforded to me.

I would also like to conduct a similar study at a school where I am not so immersed in the study as a participant observer but be more in the role of an unobtrusive observer. This would allow me to gain a perspective that would be more objective and more detached from the outcomes. Although this study made cursory links between the IATLI and neuropsychology it is also advised that further studies make in depth links to relevant literature in sociology, linguistics, neuropsychology and philosophy.

5.9 Envisaged contribution of the study to scholarship and policy or practice

This study could support other studies that endorse the use of individual remedial intervention programmes. The study could also contribute to the development of effective inclusive education practice in schools. The results of the study and the methods used could be applied to any educational setting where a need to promote inclusive education is identified.

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APPENDICES

Appendix 1: Participant one (referred to as P1)

Background history:

P1 was the middle child in his family, he was 13 years old. P1 attended a remedial school from grade one to grade seven. He felt intimidated by the mainstream high school environment; as a result his self-esteem and confidence were low. P1's mother reported that there were no complications at birth. P1 had an older sister with whom he had a very good relationship. P1's family was very supportive of him, although his father was very direct in his approach to discipline and academic demands; this had led to a strained relationship between P1 and his father. P1 was an energetic child who participated in sporting activities. He did not have many close friends at this school and at times felt lonely. Scores from the WISC-IV testing indicated that his phonological awareness and his working memory were below average. P1's health was satisfactory, and he followed a balanced diet. His early developmental milestones were all reached without any complications.

Interpersonal characteristics:

P1's difficult and relationship with his father was a cause of anxiety; his father had an extremely direct and forceful approach to discipline and academic success, and this had had a negative effect on P1's confidence and self-esteem. (This information was provided by P1's mother in the first interview.) P1 had a strong, positive relationship with his mother who provided him with the emotional support that he required to cope in his daily interactions. P1 had established a close friendship with a boy from the remedial school that he attended in the previous year, and contact with this boy was now infrequent which caused him stress.

Intrapersonal:

P1 did not socialise with his peers. He isolated himself from his father at times and did not proactively seek out relationships. There was generally a 'goodness of fit' relationship with his teachers, except for mathematics, as he has appeared to have given up on achieving in that subject. He was a very likable child who received positive feedback from his peers but it appeared that P1's withdrawn temperament, emotional insecurity and self-doubt was hindering the development of friendships.

Socio-economic:

P1 did not come from a wealthy family and both parents had to work in order to cover private school tuition. The family was financially secure with all members having access to medical aid and any support necessary. However, P1's father was not supportive of additional, learning support assistance, as in his opinion P1 was not applying himself adequately to academic demands.

Political:

P1's mother was a liberal thinker but both parents showed no interest in politics and reported that politics was never a topic of discussion in the home.

Factors hindering development:

Cognitive learning barriers: Schooling history and the results from the pre-test process indicated that P1's literacy ability was significantly below his age and grade level. His reading-rate was well below average as he failed to complete the Reading Comprehension sub-test of the SDRT in the allocated time. P1's creative writing and his reading ability were below average, with his reading showing significant word omissions, substitutions and hesitations and as a result his understanding of the content and meaning in text was poor. His reading and writing performance also indicated that P1's auditory vocabulary was below his age level. The 20 minute writing assessments and the 'shared reading' assessment done as part of the EGO analysis pointed to P1 having a notable successive processing weakness and a poor vocabulary and sight word pool. The 20 minute writing assessment also indicated that P1 had not sufficiently developed his cognitive learning skills of self-regulation, planning or the transcendence of meaning through what was intended to be observed in the creative writing exercise.

Intrapersonal: P1 had a temperament that was 'slow to warm:' He did not make friends easily even though other children regarded him positively. He had a low self-esteem and a poor self image; this made him feel insecure and inadequate in social circumstances which often saw him shun interactions.

Interpersonal: P1's difficult relationship with his father (from whom he would withdraw whenever he was confronted) was a negative factor in P1's emotional development. He did seek out positive affirmation from his father but rarely received any; this led to internalised

feelings of anxiety and depression. (This information was reported by his mother in the parent interview and by P1 in the learner interview).

Factors promoting development:

Cognitive learning barriers: The educational tests and the teacher feedback revealed that P1 was a strong simultaneous processor who was very creative. He did however struggle with attention to detail and as a result was a weak successive processor. If a 'goodness of fit' relationship was established and P1 was not stressed by the tasks presented to him, then evidence of significant creative expression could be observed. P1's temperament was conducive to cooperation and integration into lessons, and when he felt secure in class settings and a trusting relationship had developed between P1 and his teacher, effective development could be achieved. Chess and Thomas's (1984) clustering table indicated that 'Task orientation' on the Temperament Cluster showed that P1 had high 'positivity of moods' (amount of pleasant and friendly behaviour). This was regarded as a positive temperament characteristic with regard to school assimilation and achievement.

Appendix 2: Participant two (P2)

Background history

P2 was 13 years old. He lived with his birth parents and had a younger sister and younger brother. P2 had an extremely supportive family and both his mother and father were actively and positively involved in his emotional development. It was reported that there were no complications at P2's birth and he achieved all his physical and developmental milestones. It was however reported that there were some learning difficulties in the extended family. P2 had attended a remedial Montessori School that specifically attended to children with barriers to learning as early school readiness testing had indicated that he had special educational needs. P2 had been through extensive educational and psychological testing, which revealed that his IQ was above average, but that his cognitive processing ability was below average. P2's scores on the WISC-IV working memory sub-test and the perceptual reasoning sub-test were below average. P2 scored below average for his grade and age in the reading comprehension and the auditory vocabulary sub-tests of the Stanford Diagnostic Reading tests. P2 was a friendly, energetic boy who had a very positive outlook on his schooling. Both of P2's parents had tertiary education and the family was economically stable enough for both children to receive a private school education and for P2's mother to be a 'stay-at-

home mother' to focus on her children's education. P2's parents took pride in their community involvement and family interaction and socialisation was valued highly.

Interpersonal characteristics:

P2 had a difficult start to the year and was initially isolated and struggled to establish friendships, although, as the year progressed, P2 did start to make strong friendships within his peer group. He had very close relationships with his family and cousins who were his own age. P2 responded that he was happy to socialize with his family and attend cultural activities. His relationship with his mother was a difficult one at times as she was extremely demanding and placed a large amount of pressure on him to succeed academically.

Intrapersonal:

P2 was not easy to communicate with at first in the mediated learning support sessions and felt insecure in class when the academic demands were challenging. He did not form relationships quickly and often felt inadequate around his peers as he reported that he did not have friends outside of the social relationships but he had friends within his family. He had a good relationship with the educators from the Montessori school he attended when in primary school and they had shown interest in his progress.

Socio-economic:

P2 came from a wealthy and supportive background and he had access to any type of support that was required, suggested or deemed necessary. Family support was good, and P2 was exposed to stimulating experiences by his parents.

Political:

P2 came from a Greek family with strong cultural ties. They travelled to Cyprus every year and the family's heritage formed a fundamental part of P2's identity. P2's family had liberal intentions and were actively involved in the politics of South Africa. P2's parents were involved in various charity organisations and insisted on their children's involvement, which was provided with enthusiasm.

Factors that hinder development:

Although reports from P2's Montessori School indicated that P2 was performing at his grade level, the pre-test process and initial reports from P2's grade eight teachers indicated that

literacy weaknesses existed and that cognitive barriers to learning were present. Scores from the SDRT sub-test 1, Phonetic Analysis, indicated that P2 was below grade level. For the Auditory Vocabulary sub-test he scored significantly below grade level; this indicated that his reading vocabulary was below grade average and that he would struggle to bridge meaning into his work. Tracking ability was poor and his reading-rate was below average for his age and in the shared reading assessment tasks P2 exhibited a high level of omissions, hesitations and substitutions. This indicated that P2 had a low sight word pool and confirmed his weak successive processing ability.

P2's temperament, when classified according to Chess and Thomas's (1984) clustering table, indicated that his 'task orientation' was low (amount of physical motion during activity) and his 'persistence attention' was low. Observations during his interview and reports from mother and previous headmistress indicated that P2 had low self-esteem and he internalized the belief that he would not be academically successful at high school. He was a weak successive processor who scored significantly below grade level on the Schonell Graded Dictated Spelling Assessment, and the Schonell Reading Assessment. The results from creative writing activities also indicated that P2 had not mastered essential cognitive learning tools. There was little evidence to suggest that he had internalised the cognitive learning strategies of self-regulation, bridging, competence or planning into his cognitive schemata (Skuy, 1996).

Interpersonal: P2 exhibited high levels of stress and felt that reported that his mother placed too much emphasis on his academic development and he subsequently felt that he could not live up to her expectations.

Factors that promoted development:

Interpersonal characteristics: P2 had initially developed successful and rewarding relationships with a small group of his peers, and this group of friends had provided significant support. In his remedial school he was one of three learners in his class.

Cognitive: P2 was a strong simultaneous processor who displayed a high level of creativity in the informal written assessment where the topic was based on his interests and accessed information from his known cognitive schema. This indicated that the 'top-down' methods of the integrated approach of the IATLI could be effective and necessary in his mediated sessions.

Intrapersonal characteristics: 'Task orientation' on the Temperament Cluster indicated that P2 had high 'positivity of moods' (amount of pleasant and friendly behaviour) and for 'reactivity' he had a satisfactory intensity and a low sensory threshold (the amount of sensory stimulation necessary to elicit a discernable response). As mentioned, these temperament indicators suggested that P2 had preferred behavioural styles for classroom interactions which made him more compliant and easier to educate (Chess & Thomas, 1984).

Appendix 3: Participant three (P3)

Background history;

P3 came from a very supportive family with an emotionally involved mother and father. P3 had an older brother who was a previous participant on the learning support programme. There was healthy sibling rivalry between them and they were very supportive of each other. P3 had attended a remedial primary school from grade one up until last year (2010) when he was in grade seven. P3's mother reported that there were no complications at birth and P3 attained all his development milestones. Test scores and recommendations from the remedial school's resident educational psychologist reported that P3 had significant reading and writing barriers to learning (although scores from the sub-tests on the SDRT indicated that P3 was at grade level on all three tests used with the exception of his Auditory Vocabulary score where he scored one grade below). There were no reported complications at birth. P3 was an introverted student with a very easy-going temperament. He did not outwardly show stress, but he suffered from anxiety and was on medication to control this. I met frequently with P3's parents initially who were very supportive of the programme, particularly with promises to accommodate therapy times and with offering home support to my recommendations. P3 enjoyed sport and was an active soccer and rugby player.

Interpersonal characteristics:

P3 was a very sociable learner who was popular with his peers. He had a very positive relationship with his mother, even though she did place pressure on him to succeed. One of the most significant relationships in P3's life was the close emotional bond that he shared with his elder brother. Although he did not display any assertive qualities amongst his peers, he communicated well with them and was well liked.

Intrapersonal characteristics:

P3 was confident and relaxed in social settings however, it was reported that he struggled with anxiety in class, particularly in testing situations. He reported that he felt disadvantaged by attending a remedial school and felt inadequate in the mainstream independent school. He suffered from situational anxiety and low self-esteem in educational settings as reported by parents and teachers.

Socioeconomic factors:

P3's parents struggled to keep their children at an independent school; both parents had to work to bring in an income. P3's mother had recently lost her catering business and this stress was causing anxiety in the family, particularly for P3. The family did however have strong family support and were positive about their financial circumstances.

Political factors:

There was no evidence to suggest that P3's family were politically active, however they did mention that they were liberal people who supported various charities.

Factors hindering development:

Cognitive: the Informal 20 Minute Written Assessment revealed that P3 did not have any significant creative writing planning strategies, and his 'sight word pool' (vocabulary) was below average. This assessment indicated that P3 had not internalised self-regulation and planning cognitive learning strategies as described by Feuerstein (1980). The Schonell Dictated Spelling Assessment indicated that P3's spelling was below grade level. The Informal Reading Assessment scores indicated that his reading rate was low, and although he scored at grade level on the SDRT Reading Comprehension sub-test he did not finish the test in the designated time limit. The Informal Reading Assessment also revealed that his vocabulary was below average for his age. P3's situational anxiety and low self-esteem in school learning situations made school a stressful experience.

Factors promoting development:

Intrapersonal: P3 was a friendly learner with a mild temperament. According to the Temperament Cluster Table (Chess & Thomas, 1984), P3 scored favourably on 'task orientation;' displaying low distractibility, high activity and high persistence/attention when

focussed on a task. 'Personal social flexibility' was high, indicating good adaptability and high positive aspects of moods. 'Reactivity' also scored high, making P3 an easy-going learner who, research suggests, responds well to being taught in the class or in mediated settings. P3 was a strong simultaneous processor with a well-developed imagination and a desire to do well at school (as reported by him). This was evident in his creativity in his 20 Minute Written Assessment. He responded positively to the mediator from the initial meeting.

Interpersonal: P3 had a very supportive mother and father, and a healthy and close relationship with his older brother. Family life was balanced and positive, although work stress was a factor as both parents owned their own businesses. Socio-economic circumstances were positive and any necessary support was provided (emotional and academic). P3 was also actively involved in sport and had a good network of friends.

Appendix 4: Participant four (P4)

Background history:

P4 was 13 years old. P4 came from a divorced home; he lived with his mother and her partner. P4's formative years were spent in Cape Town. He spent most of his holidays in New York, USA as his mother had family there. It was mentioned that he got on very well with his cousins of a similar age who lived in the USA, and he mentioned in his interview that he missed them. His father informed the researcher that there had been no further visits to the US due to financial constraints as a result of the divorce and new living circumstances. P4's mother and father had university degrees and worked in their chosen fields. P4 was close to his father although he did not see much of him as his business required that he travelled extensively. This caused P4 anxiety and distractibility, which could be causally related to his poor academic performance at school. P4 attended a remedial school for the senior primary phase of his primary school education. The remedial school in Cape Town was described as one that followed a Montessori system. There were only three other learners in his class at any one time. He was diagnosed with a reading concern and below average working memory by an educational psychologist when he was in grade one, as indicated in her report. P4 had found it extremely difficult to adapt to the social and academic demands placed on him in high school. P4 had only been in Johannesburg since 2010 and had found it difficult to cope in the new environment without his friends and familiar social and emotional support.

Interpersonal characteristics:

P4 did not have an effective support structure at home; his mother and stepfather worked all day and came home late at night. P4 did not have any siblings and reported to me that he felt isolated, depressed and alone. P4 had not made any significant friendships since being at high school, although he did have an extensive group of internet-based friends who shared similar teenage interests in music on the internet and he was in contact with his family in the US.

Intrapersonal characteristics:

P4 was very quiet, passive and withdrawn around people. His mother and father both mentioned that he preferred to stay in his room and listen to music rather than engage in conversation; both parents were of the opinion that this was acceptable and typical teenage behaviour and had never challenged P4 to become a more proactive contributor to family matters. He had been diagnosed with depression and ADD which saw him periodically take prescribed medication.

According to Chess and Thomas's (1984) Temperament Clustering Table, P4's temperament could be described as follows from information collected from parents, teachers: According to the three clusters found on the Temperament Clustering Table: 'Task Orientation': P4 had low Activity, low Persistence and Attention, and high Distractibility. 'Personal/Social Flexibility': P4 was very withdrawn and was reported as being extremely anxious and unable to adapt to new stimuli. He had a low Positive Aspect of Mood, and in other words he did not display a large amount of friendly and positive behaviour. 'Reactivity': P4 had been reported as having a Low Intensity and a High Sensory Threshold, the amount of stimulation needed to get a discernible response. Research has shown that learners who present with the type of temperament type discussed here, be it a personality trait or one created by the child's environmental circumstances, do not cope well in the mainstream school environment.

Socioeconomic Circumstances:

Although P4's parents were not as well-off financially as they were when they were married, they both had stable incomes in the upper percentile of the population's earnings. P4 had access to a top-end medical aid scheme and he had access to psychologists and psychiatrists. P4 had been prescribed Ritalin by his psychiatrist although he resisted the medication and it was not pushed on him by his mother.

Political structures:

Both of P4's parents were liberal, although only his mother had an interest in being socially proactive by voting and informing P4 of his need to be socially responsible. P4 reported that he had no interest in his mother's views on politics.

Factors that hindered development and learning:

P4 showed characteristics of a temperament style that was not conducive to successful integration and learning, especially in classroom settings at the inception of the IATLI. He reported in interview that he found it difficult to engage in activities with his peers and preferred to withdraw from interaction. His emotional state was also not conducive to active participation when the programme was implemented.

Interpersonal: P4 did not receive suitable and consistent structure and support from his home environment. The relevant absence of his mother from an emotional standpoint had had a negative impact on P4's confidence and subsequent desire to integrate with adults and his peers.

Cognitive barriers to learning: The scores from the pre-programme tests on the SDRT, evidence from tracking activities, reading assessments and the informal 20 minute writing assessment all indicated that P4 was a strong simultaneous processor, but had weaknesses in his successive processing ability. This diagnosis was supported by his slow reading rate and high levels of hesitations and omissions in the informal reading assessment all indicating that P4 had a poor sight word pool and successive processing difficulties. His 20 minute creative writing assessment showed limited application of cognitive learning strategies, including planning, self-regulation and translation of meaning into text. Although P4 scored at grade level in the SDRT sub-test of Reading Comprehension he did not finish the test in the allocated time.

The most concerning aspect hindering P4's progress at school was the evidence that suggested that he was depressed, withdrawn and suffered from a low self-esteem in educational settings

Factors that promoted development and learning:

Intrapersonal: it was reported that P4 responded well in one-on-one situations where he did not feel threatened, and the environment was not competitive. If a 'goodness of fit'

relationship could be established with P4 in controlled circumstances it was possible to make a positive contribution to his development and learning. This was seen and observed by P4's father during one-on-one interactions at the remedial school in Cape Town and with various psychologists.

Interpersonal: P4 had a very supportive and caring father who was actively involved in his son's life, both emotionally and academically when available, the only constraint was the working conditions of P4's father who spent most of his time on business travels in Africa.

Cognitive processing ability: Informal testing indicated that P4 was a strong simultaneous processor, who had the ability to predict and create imaginative concepts. From the informal creative writing assessment it was observed that P4 had the imagination and foresight to create an interesting story. This story was however only focused on the topics that were of interest to P4 (indicating some degree of engagement and creativity). It was also observed that he quickly withdrew effort and interest from a task if it did not focus on his interests.

Another positive aspect was that the testing scores on the SDRT also indicated that P4 was functioning at grade level, although these positive scores did not correlate with the evidence provided by school based tests and informal tests administered as part of the EGO analysis that indicated literacy problems.

Intrapersonal: If P4 could obtain a stimulating and reliable relationship with a mentor or mediator and a 'goodness of fit' relationship could be established, P4 could benefit academically and emotionally from the professional relationship. This had been observed and reported by his father and mother during his primary school years.

Literacy skills: P4 scored at his grade level for the Phonetics Analysis sub-test on the SDRT, which meant that his ability to discriminate between the graphemes and morphemes in text was suitably developed.

Appendix 5: Participant five (P5)

Background History:

P5 was 13 years old. P5's mother had had an uncomplicated birth, and his parents provided a stable home environment in his formative years. P5's parents went through a contested and difficult divorce when he was in grade one. According to his parents, the divorce had a profound impact on his emotional state at the time, and P5 had to attend play therapy for a

protracted period of time to work through the issues associated with the family breakdown. Both his parents were very committed and involved in his life, and were concerned with his academic development. P5 wished that he could see more of his father, but the legal constraints of the divorce agreement and the strained relationship between his parents meant that P5 could only see his father during formal visiting times, which equated to every alternate weekend and every Wednesday evening. Despite the dysfunctional state of his family life, P5 felt loved and cared for by both his parents who were positive and supportive influences in his life. Besides their disagreements, both of P5's parents were good role-models who lived extremely healthy and balanced lives.

P5 had had an extremely disrupted and stressful school career; he was diagnosed with having cognitive learning difficulties in grade one and was placed into a remedial school where he remained until grade six. In grade three he was diagnosed by a psychiatrist as having Attention Deficit Hyperactivity Disorder (ADHD) and was placed on a high dosage combination of Concerta and Ritalin. P5 repeated grade three at the remedial school as assessments from educational and psychological testing at the time indicated that P5's reading and writing ability and his processing speed were below average for his age and grade level. This recommendation to repeat grade three was supported by an occupational therapist whose report indicated that his fine motor coordination and handwriting needed further attention and therefore the faster pace of grade four would have been too challenging for him. P5's barriers to learning were never accepted by his parents who blamed each other and the breakdown in their relationship as a contributing cause for P5's learning difficulties.

As a result of the breakdown of P5's family structure, he moved home three times and was placed into three schools before he reached grade eight. This disrupted schooling pattern meant that he struggled to form close social friendships with other children despite his friendly and easy-going disposition.

Interpersonal characteristics:

P5 had excellent support from all his teachers, particularly his History and English teachers who started providing him with extra lessons and support every week. Both of these teachers had made an initial emotional connection with P5 and both teachers were trained and involved in special needs support.

P5 had established a group of friends who participated in cricket with him. He was actively involved in sports and this had helped him establish friendships quickly. This was a new development for P5 as it was mentioned that he struggled to establish friendships in primary school.

Intrapersonal characteristics:

P5's prolonged inability to be successful at school had led to him suffering from low self-confidence and depression. However he was a positive and optimistic learner who excelled at sport. He had a wide variety of interests and was extremely good at verbal communication and articulating his thoughts. There was a concern that he was starting to 'act out' negatively in class and withdraw from social contact in class as a result of his frustration and feelings of inadequacy in education contexts. (Reported from grade seven teachers.)

Socio-economic circumstances:

Both of P5's parents were career-driven, and had achieved a high level of success in the workplace. They both had managerial roles in their professions, his mother was a marketing manager and his father was an accounts manager for a large firm. Both of P5's parents had tertiary qualifications and had attended private schools. His parents expected him to succeed academically as they had not encountered any difficulties in their own education.

P5 had access to quality medical care, psychological and educational support where needed and any other forms of external assistance, as both his parents were financially secure. P5 did not have established relationships with other members of his family like grandparents and cousins as they lived overseas and in Cape Town.

Political structures:

Both parents had brought P5 up in a very liberal manner. They both had healthy moral belief structures and were proactive about citizenship. P5's mother was actively involved in community service, and involved her son in her initiatives.

Factors hindering development and learning:

Interpersonal home: The contested separation of P5's parents had had a negative effect on his emotional and cognitive development, and it was mentioned that he got confused, angry and depressed at times when he thought about his family life. P5 was very close to his father, and

the limited contact that he had with his dad as a result of the divorce had created anger and anxiety within him.

A major concern for P5 was the unrealistic expectations that were placed upon him by his parents, and the lack of positive regard that he received as a result of this specific expectation. He seldom received any positive feedback from his mother even when he did succeed at a task, as his efforts were never seen as good enough. This had had a negative effect on his self-esteem, which he hid well around people.

Intrapersonal: Although P5 had an outgoing personality he sometimes compensated for his awareness of his learning difficulties by over-acting and trying too hard to get the attention of his peers and the adults in his life: This left him confused when the reaction he got from others was not what he was anticipating.

Cognitive: P5's 'sight word pool' was below his current age level at the time of testing. His reading and writing rates were two years below his grade level. He struggled to identify and link meaning to words or phrases that did not form part of his known schema.

Phonetic Analysis scores from the SDRT indicated that P5 was below his age and grade level. This meant that he had difficulty discriminating between the graphemes and the syntax of words; this had implications when P5 was trying to extract meaning from text, or correctly deciphering the meaning of written questions. This indicated successive processing concerns.

P5 showed little evidence of the application of effective meta-cognitive learning strategies when attempting tasks; this was evident when he attempted his creative writing tasks and the informal creative writing assessment where planning strategies were not displayed. I noticed that he made corrections to some words and adjustments to sentences which displayed a level of self-monitoring ability.

P5's use of literary conventions (punctuation, paragraph structure, headings, sentence structure) was below average for his grade and age level, this was evident from his results in the Schonell Dictated Spelling Test and the Informal 20 Minute Creative Writing Assessment.

P5's tracking ability was weak and this was as a result of his poor successive processing ability. This compromised his fluency when reading and his ability to correctly extract

meaning from text. This learning barrier was intensified by his below grade and age-level scores in the Reading Comprehension sub-tests of the SDRT.

Scores provided from the WISC-IV conducted by an educational psychologist indicated that his Verbal Comprehension Index and his Perceptual Reasoning Index were below average.

Mathematics was a real weakness for P5 and he scored three years below his age level in logical processing Mathematics testing. This could be linked to his inability to effectively discriminate and identify detail in text or differences between numbers.

Factors that promoted development and learning:

Intrapersonal: P5 was very expressive and sociable; it had been suggested that being an only child had contributed to his ability to communicate easily with adults. He was articulate and well-spoken, with a good sense of humour. He had a relaxed temperament and an optimistic outlook on life.

Interpersonal: P5 had very supportive, loving and involved parents. He had a strong and supportive working relationship with some of his teachers and with me as the mediator of the IATLI programme.

Cognitive/learning: P5 was very creative and imaginative with strong simultaneous processing strengths; he had demonstrated a flair for design and technology which reinforced his problem solving abilities. Testing revealed that P5's logical processing was well developed; this was evident through his responses in the inferential questions in informal discussions, and in prediction tasks in the reading assessments. When P5 could apply his creativity to meaning-based tasks he could produce work that was age appropriate. P5 had a good general knowledge for his age.

P5's temperament type was conducive to the classroom environment as was evident from the learner interview and reports from teachers and his parents.

Appendix 6: Participant six (P6)

Background history:

P6 was 14 years old. P6 came from a very supportive home with a committed mother and father. P6 had a very good relationship with his older brother. His mother reported in the EGO interview that there were no complications at birth and P6 achieved all his

developmental milestones. P6 was a talented sportsman who shared a passion for soccer with his older brother with whom he had a strong emotional bond. P6 lived a very structured lifestyle as far as time management and diet were concerned. P6 attended a remedial school for the duration of his primary school career. He had a very easy-going temperament, and was very positive and focussed on his academic and sporting future. His mother was particularly supportive. Financially the family were very stable, but P6's father did have to travel for business commitments on a frequent basis and this had a negative impact on P6's emotional state. P6's test results from an evaluation by an educational psychologist showed that he had working memory and reading comprehension barriers to learning.

Interpersonal characteristics:

P6 was an extremely dedicated sportsman and was popular with his peers. He had a very supportive and large social group and within this group, displayed leadership qualities. P6 had a very strong relationship with his parents and trusted them for his emotional support. His relationship with his brother was also very important to him. P6 communicated well with adults and was perceived as friendly, approachable and intelligent.

Intrapersonal characteristics:

P6 suffered from situational low self-esteem. He was very confident on the sports field and communicated well with his peers. However, in classroom interactions he withdrew from interaction with teachers and his peers and felt frustrated by the learning process. This was a significant cause of anxiety for him as he persevered for success and tried hard with little to show for his efforts. His mother reported that his frustrations led to him suffering from anxiety, disillusionment and depression. He established very strong relationships in one-on-one learning situations and it was evident that he thrived on positive reinforcement concerning academic achievement (reported in the parent interview).

Socioeconomic:

P6 came from a family that were financially stable with strong community ties. The family frequently socialized with extended family and friends and P6 had positive relationships with the people with whom the family interacted. P6 had access to any support that educational professionals or medical professionals deemed necessary.

Political factors:

P6's family and friends were liberal thinkers who encouraged liberal ideas in their children. The family did not mention that they were active in any political agendas. They were accepted in their community which consisted of a financially middle to upper-class group.

Factors hindering development:

Cognitive: Results from the pre-programme SDRT Phonetic Analysis sub-test and the Auditory Vocabulary sub-test both indicated that P6 was below grade level in these literacy areas. P6 was a weak successive processor, and this was evident in his inability to discriminate the syntax and graphemes in words in the Phonetic Analysis sub-test, in his below age level performance in the Schonell Dictated Spelling Test and the high frequency of hesitations and substitutions in the Informal Reading Assessment. There was also no evidence of structure and application of writing strategies when he attempted the informal, 20 Minute Creative Writing Assessment. This lack of cognitive learning strategies included planning strategies, inferential-hypothetical thinking, and projection of visual relationships, self-regulation and summative behaviour as described by Skuy (1996).

Emotional: Although P6 was confident and portrayed a relaxed and easy-going temperament, he was very competitive and placed himself under pressure to succeed academically; this caused him stress and anxiety.

Constitutional: P6's older brother was not diagnosed as having any academic issues, and was very outgoing. This placed additional pressure to succeed, although this was mostly self inflicted as his parents were very supportive of his unique qualities.

Time management: P6 achieved a large amount of his positive reinforcement from his sporting pursuits which were time consuming. This left P6 with less time and energy to apply to academic and learning support commitments.

Factors that promoted development:

Interpersonal: P6 displayed leadership ability and he had a healthy circle of friends among his peers. It was also reported that P6 had very supportive and engaging parents, and strong family relationships.

Intrapersonal; P6's temperament was very conducive to the classroom setting and teacher/mediator interactions. In Chess and Thomas's (1984) Temperament Cluster table he was rated favourably with regard to 'task orientation' where it was noted that P6 had high persistence and attention, and high levels of activity. On the 'personal flexibility' cluster P6 was rated as having a high aspect of mood, and on the 'reactivity' cluster P6 displayed a low sensory threshold and a high intensity when working. P6 was also reported as being very friendly and approachable.

Cognitive: P6 had a well-developed and varied general knowledge, and although his reading indicated that he had concerns with the recognition of sounds, his 'sight word pool' and understanding of age appropriate text was average for his age (observed in prediction activities from shared reading). He scored at grade level on the SDRT Reading Comprehension sub-test, although he did not finish the activity in time. Even though there were many cognitive processing concerns with his creative writing, there was evidence of creative thinking and accurate definition of problems and provision of creative solutions, this indicated simultaneous processing ability.

Appendix 7: Participant seven (P7)

Background history:

P7 was 14 years old; he did not know his biological father, although his mother remarried when P7 was very young. His mother reported that there were no complications at birth and he achieved all his developmental milestones. P7 was adopted by his adoptive father who was significantly older than his mother. His home life was extremely supportive and stable. P7 had an older brother whom he looked up to. P7 did not attend a special needs school, however records show that he had been condoned though primary school on age cohort and that a remedial school was constantly recommended (this was evident from school reports and the EGO interview with his parents). Teachers and educational psychologists noted that his reading and comprehension abilities were below average for his age. P7 was a quiet and introverted individual who presented with a low self-esteem. Although he was not a disruption in class, teachers noted that he struggled to concentrate and stay on task. It was observed that he was a simultaneous processor who needed to have work content that was linked to meaning based concepts in lessons.

Interpersonal factors:

P7 had two strong friendships, a new friendship with a boy at the intervention site (school) and the other at his previous school. He avoided large social groups and often spent time on his own or in the school's computer centre. He was very close to his adoptive father who involved himself in his children's lives. His relationship with his older brother was positive.

Intrapersonal factors:

P7 had a low self-esteem and felt anxious in classroom interactions. Although he interacted well with his older brother he felt that he was inferior as he could not match his brother's academic achievements. He suffered from a low self-efficacy and felt incompetent in learning situations and felt that 'self-change' was not attainable (this became evident in the learner/mediator interview where he quite despondent about his future).

Socioeconomic factors:

P7's father figure was a very successful businessman and there was no support structure that was not provided (learning support or medical). His father was a strong supporter of inferential learning and most holidays were spent visiting museums and cultural sites. This ecosystemic factor had provided P7 with a varied and well developed general knowledge, and a passion for ancient history. P7's family did not have an active social circle of friends and only saw extended family sporadically.

Political:

P7's family were very involved in community outreach projects and P7's father was actively involved in liberal political movements and encouraged this with his wife and sons.

Factors that hindered development:

Cognitive: P7 was a weak successive processor and this was evident in his below age-level scores in the Schonell Graded Spelling Assessment, and the Informal Reading Assessment where his reading-rate showed as being below average for his age. Significant hesitations and word substitutions were also noted in the Informal Reading Assessment. P7 had a low 'sight word pool' and his tracking ability initially presented as a barrier to learning. In the output phase of cognitive processing he showed impaired expressive abilities. In the 20 Minute Creative Writing Assessment P7 displayed poor planning, self-regulatory ability and

description and expression of meaning in his essay, as described by Skuy (1996). These initial assessment results indicated that he had poorly developed cognitive processing tools for effective learning.

Intrapersonal: Generally P7 had a temperament that was easy-going and positive although he scored low on the approach/withdrawn dimension on the 'Personal Social Flexibility' cluster, which is interpreted as the nature of initial responses to new stimuli, people, procedures and situations (Temperament Clustering Table developed by: Chess and Thomas, 1984) This temperament style indicated that P7 needed to develop a 'goodness of fit' relationship with mentors and teachers in order for him to fully access teaching and lesson content. It was also reported by P7's parents that there was a history of P7 suffering from stress and anxiety when placed into challenging situations or unfamiliar environments.

Interpersonal: P7 came from a generally very supportive background with good relationships, although he did struggle to form significant friendships with his peers.

Factors promoting development:

P7 came from a financially stable home with effective communication and emotional support provided by all family members. As mentioned, his temperament was generally well suited to teaching environments with high scores on the 'Persistence/Attention Dimension' on the task orientation cluster, and high 'positive aspects of mood' on the reactivity cluster.

Cognitive: P7 scored at grade level in the SDRT sub-tests for his age (Phonetics Analysis and Auditory Vocabulary sub-tests), although he did not manage to finish the Reading Comprehension sub-test of the SDRT in the allocated time his scores showed him to be above grade level. He was a strong simultaneous processor who showed significant levels of creativity when completing the Informal Creative Writing Assessment although, no evidence of writing strategies or planning strategies were evident.

Appendix 8: Participant eight (P8)

Background history:

P8 was 14 years old when included onto the mediated support programme. P8 came from a very supportive home, his father owned his own successful business and his mother was a 'stay-at-home' parent. Both parents had tertiary qualifications. P8 was an outgoing student with an extrovert personality; he was popular with his peers and most his teachers. P8

attended a remedial school from grade four until grade seven. P8 came from a wealthy home where no expense had been spared to provide support. P8 had a history of attending additional learning support therapy from grade two. P8's test results from his remedial school showed weaknesses in working memory and processing speed. His mother reported that his birth had been uncomplicated and he achieved all his developmental milestones. P8 was recommended onto the programme as his teachers reported that he was struggling to cope in the mainstream school environment and extra support was suggested. P8 was actively involved in sports activities and received positive reinforcement from these interactions.

Interpersonal factors:

P8 was a popular learner who had a wide social group of peers both from the school community and outside of the school. Through these interactions he displayed leadership qualities. Although he was popular with his teachers, he 'acted out' regularly in class and his lack of organisational skills and control of behaviour led to some teachers labelling him as disruptive and lazy. (Information obtained from interviews with P8's teachers to include in the EGO analysis.) P8 had a very close relationship with his father and both of them had national colours for fishing.

Intrapersonal factors:

P8 reacted negatively to his frustrations and continued failure in class regarding learning situations and academic tasks. His frustration led to his low internal feelings of competence and an intrinsic inability to believe in self-change. He had an easy-going temperament when not confronted and communicated well with adults. (Elicited from parent and learner interview with the mediator). He did not respond well to tests or academic challenges as he felt embarrassed and depressed by his failure to succeed. P8 displayed situational poor self-esteem and poor self-efficacy in classroom situations. His disruptive behaviour was a defence mechanism to deflect attention away from his failure and inability to understand aspects of lesson content. (Reported from the learner and mediator interview.)

Socioeconomic factors:

P8 came from a family that was financially stable. They frequently travelled overseas on holiday and there was no medical or learning support provision that was not provided when

required. The family had an active social life and enjoyed positive relationships with their friends and extended family members.

Political factors:

P8 and his family were liberal thinkers but were not actively involved in any political or community outreach initiatives. P8's mother did encourage her son to be involved in the school community outreach programmes.

Factors that hindered development:

Cognitive: Timed performances in tracking activities indicated that P8's letter processing speed was below average for his age. His reading rate from the Informal Reading Assessment was also below average and his reading assessment displayed a high number of hesitations, omissions and substitutions, indicating that his reading ability was significantly below age and grade level. These test results indicated that P8 was a weak successive processor, with a low 'sight word pool' and an underdeveloped ability to discriminate between the syntax and graphemes when reading. The Schonell Dictated Spelling Assessment score indicated that he was three years below age-level and revealed concerns with phonemes and word structure. In the informal 20 Minute Creative Writing Assessment no evidence of applicable writing strategies was evident. These cognitive processing strategy weaknesses included poor planning strategies, self-regulation strategies, definition of the problem in the elaboration phase and perception in the input phase, as described by Skuy (1996). Although his scores on the Pre-programme tests on the SDRT indicated that he was functioning at grade appropriate level the informal tests discussed here indicated that literacy barriers and cognitive learning barriers were present at the time of the EGO assessment.

Intrapersonal: It was revealed in the learner interview and in the parent interview that P8 had a low self-esteem and a negative attitude to the school environment. This was as a result of his record of underachievement and inability to obtain any positive reinforcement from the classroom environment. Although P8 had a temperament that was easy-going and one that was conducive to the teaching received, he displayed a negative attitude in formal teaching environments.

Factors promoting development:

Interpersonal: The learner interview, parent interview and teacher reports indicated that P8 had many friends, was sociable and well-liked by his peers. When not confronted, or on the sports field (where P8 excelled), he had formed excellent relationships with his teachers.

Intrapersonal: P8 had a very easy-going temperament style. On Chess and Thomas's (1984) Temperament Cluster Analysis observations indicated that on the 'Personal Social Flexibility' cluster he scored highly with regard to approachability and highly in the positive aspects of mood category. On the 'Task Orientation' cluster he scored highly on the reactivity dimension, which meant that he responded easily and appropriately to stimuli. This temperament style was very conducive to teaching and P8 had a good attitude about life and was involved in a wide variety of interests. (These temperament type observations were deduced from the learner and mediator interview and parent and teacher reports from EGO interviews.)

Cognitive: P8 displayed a well developed creative ability through the content evaluated in the 'Informal Creative Writing Assessment' and from teacher feedback. This, together with reports from teachers on his ability to solve problems and predict story outcomes accurately, indicated that P8 was a strong simultaneous processor. P8's general knowledge and vocabulary surrounding topics of immediate interest to him was of an above average standard.

Appendix 9: Likert-Type questions

Learning support programme feedback questionnaire

Please select the answer that you think is appropriate by making a cross in the relevant box

1. A learning support programme is very important for Grade Eights?

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree

2. Teaching methods should be tailored to the learning style of the individual?

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree

3. Do you expect to see an immediate improvement in literacy skills of learners on the programme?

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree

4. Do you see educational value in having learners out of your lessons and in learning support sessions?

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree

5. Do you believe that you will see an improvement in confidence with regard to class participation from the learners on the learning support programme?

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree

6. Do you believe that the programme will have a negative impact on the delivery of your subject's curriculum?

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree

7. In your opinion will the learners effectively use strategies learned in the mediated learning support sessions?

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree

8. Do you believe that the learning support programme on offer is ideal for a mainstream independent private school?

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree

9. Will improved learning skills lead directly to improved grades in your subject?

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree

10. In your opinion is the learning support programme fostering enhanced inclusive education in our school?

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree

11. Have you seen a direct improvement in the learning ability of any children who have been on the programme? (Only applicable if you have taught a child on the programme for an extended period of time)

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree

Appendix 10: Framework of the semi-structured interviews (interview intended for participant teachers)

1. Do you think that my learning support programme can provide the children with skills to cope in your lessons?

2. In the period that I have been running the programme have you seen any change in the literacy abilities of any of the learners who have been involved?

3. Have you noticed any change in the approach to class participation of any learner on my programme?

4. Can you give me any specific examples of the children's written work that indicate that my sessions have had a direct positive effect on their learning?

5. Do you think that one-on-one mediated learning support sessions are beneficial to the children?

6. Have you seen any negative effects of the mediated learning support sessions on any of the learners?

7. In your opinion, how do the learners with under-developed learning strategies cope in your class?

8. Do you feel that these children are disadvantaged in mainstream settings?

9. Should these learners be at a mainstream school, or should they be in an environment with a modified curriculum or teaching environment?

10. Do the learners with barriers to learning integrate into your class effectively and efficiently? Can you please give examples?

11. Do you see a relationship between special educational needs and a learner's self-esteem, or personal self-image?

12. Do you collaborate with other teachers or parents on a regular basis to find out what teaching strategies might be more effective with a particular learner?

13. In your opinion, is the learning support programme effective and necessary in this school?

14. Have you noticed any improvement in the reading or writing ability of the learners on my programme?

15. Have you seen any improvement or use of new learning strategies by any learners on my programme?

Appendix 11: Headmaster consent form

DOUGLAS ANDREWS

MASTERS IN EDUCATION, UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

INVITATION TO PARTICIPATE IN MY RESEARCH PROJECT

HEADMASTER PERMISSION FORM

Dear _____

I would like obtain your permission to conduct my Masters of Education research project at your school. I would like to explore the effect of my mediated literacy programme on the children to whom I provide learning support.

I intend to conduct a research project that will see if my literacy programme can be mediated as part of the learning support programme that is currently provided as part of the school's services.

The literacy programme is called the Integrated Approach to Literacy Instruction (IATLI). The programme is designed to improve literacy ability while simultaneously equipping children with fundamental learning and processing skills to make them more effective learners.

Your permission to allow me to conduct my research in your school is totally at your discretion.

You are not obliged to provide me with feedback for the duration of the study and you can withdraw the school's involvement at any time.

I do not foresee any risks to you, the school or the participants in this study. I do see that there will be direct benefits to the stakeholders involved in this project as the learning skills that I intend to mediate will only benefit the learner participants.

I guarantee that the school's involvement and participation in my research project is done in the strictest confidence. Your name and the school's name will not be placed on any documentation, nor will it be made public knowledge that you are participating in the research, or that _____ is the site of the study.

If you need to contact me at any time to discuss any aspect of your participation in my study please don't hesitate to contact me on 072 587 8578 (24 hours).

If you agree to allow me to conduct my research at your school please provide consent by signing the form in the space provided below. Signing this form is not binding in any way whatsoever.

Thank you.

Yours sincerely

Douglas Andrews

Headmaster's Consent Form

Title of the research project

The mediation of the Integrated Approach to Literacy Instruction Programme to selected Grade Eight learners in an independent secondary school in South Africa.

I _____ give permission for Douglas Andrews to conduct his research project at _____.

Headmaster's signature:

_____Date:_____

Researcher's signature:

_____Date:_____

Appendix 12: Parent permission form

DOUGLAS ANDREWS

MASTERS IN EDUCATION, UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

INVITATION TO PARTICIPATE IN MY RESEARCH PROJECT

PARENT PERMISSION FORM

Dear _____

I would like to invite your child to participate in my Masters of Education dissertation.

I am going to be conducting a research project that will see if my literacy programme can be mediated as part of the learning support programme which your child is currently part of.

The literacy programme is called the Integrated Approach to Literacy Instruction (IATLI). The programme is designed to improve literacy ability while simultaneously equipping children with fundamental learning and processing skills to make them more effective learners.

Your child's participation in the programme will involve _____ learning support sessions to deliver the content of the IATLI. His teachers will be interviewed to evaluate whether the skills and knowledge acquired on the programme have had any effect on his performance in the classroom learning environment.

Your child will also be required to participate in educational testing at the beginning and the end of the programme to see if any progress or development can be seen in the results.

Permission to allow your child to take part in my research project is totally on a voluntary basis, and if you or your child do not want to participate it will involve no penalty or loss of any benefit already provided by me as the coordinator of the learning support programme.

You or your child are not obliged to finish the programme and you can withdraw your support at any time without any loss of benefits whatsoever.

I do not foresee any risks to your child as a participant in this study. I do see that there will be direct benefits to your son, as participation will expose him to concepts and skills that will surely be of use to him in the classroom environment.

I guarantee that your child's involvement and participation in my research project is done in the strictest confidence. His or your name will not be placed on any documentation, nor will it be made public knowledge that he is participating in the research aspect of my learning support programme.

If you need to contact me at any time to discuss any aspect of your child's participation on my study please don't hesitate to contact me on 072 587 8578 at any time (24 hours).

If at any time you would like to get assistance for your son from another teacher I will provide that service by setting up alternative lessons to help him.

If you agree to participate in my research project please provide consent by signing the form in the space provided below. Signing this form is not binding in any way whatsoever.

Thank you.

Yours sincerely

Douglas Andrews

I _____ agree that _____ can take part in your Masters of Education research project as an active participant.

Parent's signature:

_____Date:_____

Researcher's signature:

_____ Date:_____

Appendix 13: Learner permission form

DOUGLAS ANDREWS

MASTERS IN EDUCATION, UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

INVITATION TO PARTICIPATE IN MY RESEARCH PROJECT

PUPIL/PARTICIPANT PERMISSION FORM

Dear _____

I would like to invite you to be part of my Masters Degree research project.

I would like to work one-on-one with you to help you improve your ability to learn in class. My support programme also plans to help you with your reading, writing and spelling.

I will give you ____ one-on-one learning support sessions with me. During these sessions we will work on reading and writing projects in a fun and friendly way. Every learning support session will be planned around activities and topics that are interesting to you.

Before we start with the one-on-one sessions I will need you to do two tests so that I can get an idea of what work we need to concentrate on in our sessions together. At the end of the learning support programme I will give you the tests again to see if there are any improvements in your skills.

If you agree to join me on my support programme I need to let you know that at any time you want you can stop having the one-on-one sessions with me. If you stop coming to the sessions with me it will not affect you negatively in any way at school. If you don't want to be part of my programme you do not have to. I will not judge you in any way and your decision will be kept totally confidential, and your school marks will not be affected in any way.

I do not see any danger to you if you agree to be part of my programme. In fact, if you join the programme you should find school work easier to understand.

I guarantee that your involvement in my research project is done in the strictest confidence. Your name will not be placed on any documentation. I will also make sure that nobody else knows that you are on the programme, except for the people that are directly involved, like your teachers.

If you need to contact me at any time to discuss anything to do with my study please don't hesitate to phone me on 072 587 8578 at any time (24 hours).

If, at any time, you would like to get help from another teacher I will organise those extra lessons for you.

If you agree be part of my research project please give me your permission by signing the form in the space below. Signing this form does not mean that you have to do anything you don't want to. You can ask me to give it back to you at any time you want.

Thank you.

Yours sincerely

Douglas Andrews

Learner Consent Form

Title of the research project

The mediation of the Integrated Approach to Literacy Instruction Programme to selected Grade Eight learners in an independent secondary school in South Africa.

I agree that I will take part in your research project, and give you permission to give me learning support sessions at school.

Name: _____

Pupil's signature:

_____ Date: _____

Researcher's signature:

_____ Date:_____

Appendix 14: Teacher permission form

DOUGLAS ANDREWS

MASTERS IN EDUCATION, UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

INVITATION TO PARTICIPATE IN MY RESEARCH PROJECT

TEACHER PERMISSION FORM

Dear _____

I would like to invite you to participate in my Masters of Education dissertation as an observer of the effect of my mediated literacy programme on the children to whom I provide learning support and who are in you class.

I am going to be conducting a research project that will see if my literacy programme can be mediated as part of the learning support programme which you are currently part of.

The literacy programme is called the Integrated Approach to Literacy Instruction (IATLI). The programme is designed to improve literacy ability while simultaneously equipping children with fundamental learning and processing skills to make them more effective learners.

I would like to get your permission to interview you and for you to fill out a questionnaire in order that I can evaluate whether the skills and knowledge learned on the programme have had any effect on your performance in the classroom learning environment.

Your permission to take part in my research project is totally on a voluntary basis, and if you do not want to participate it will involve no penalty or loss of any benefit already provided by me as the coordinator of the learning support programme.

You are not obliged to provide me with feedback for the duration of the study and you can withdraw your participation at any time.

I do not foresee any risks to you as a participant in this study. I do see that there will be direct benefits to you, as your participation will provide you with reflective insight into the differentiation needed to teach learners with special educational needs.

I guarantee that your involvement and participation in my research project is done in the strictest confidence. Your name will not be placed on any documentation, nor will it be made public knowledge that you are participating in the research aspect of my learning support programme.

If you need to contact me at any time to discuss any aspect of your participation on my study please don't hesitate to contact me on 072 587 8578 at any time (24 hours).

If you agree to participate in my research project please provide consent by signing the form in the space provided below. Signing this form is not binding in any way whatsoever.

Thank you.

Yours sincerely

Douglas Andrews

PERMISSION FORM

I _____ agree that I will take part in your Masters of Education research project as an observing participant.

Teacher's signature:

_____ Date: _____

Researcher's signature:

_____ Date: _____