

**DYNAMIC ASSESSMENT – A PRACTICAL STRATEGY FOR SCHOOL
EDUCATORS**

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Declaration

I, the undersigned, hereby declare that this assignment is my own original work, and I have not previously in its entirety or in part submitted it at any university in order to obtain a degree.

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Summary

Post-apartheid South Africa has seen a shift to process-centred, outcomes-based (OBE) education. Inherent in this shift and in the democratisation of the education system, has been a move to holistic, learner-centred and inclusive education. The successful implementation of a 'new' education system will require a major paradigm shift in educators' methodology, especially with regard to how educators assess learners within this process-centred, OBE approach.

The concept of dynamic assessment is especially relevant in the shift to OBE. The dynamic assessment strategy proposed by this researcher is based on Feuerstein's theoretical design. Implicit in the theory are the concepts of structured cognitive modifiability (SCM) and the mediated learning experience (MLE).

SCM is based on the assumption that human beings have the capacity to modify their cognitive functions and adapt to life's changing demands. They are thus open systems which are amenable to cognitive changes. Structural changes are pervasive and determine cognitive function in a broad series of mental activities. Feuerstein has suggested a list of deficient cognitive functions at the input, elaboration and output phases of the mental act. These serve as guidelines for observational and mediational efforts. The identification of the deficient cognitive function, the level of modifiability and the mediation required to change them are considered to be of vital importance to predicting future learning. This basic assumption shifts the responsibility for a person's modifiability from that individual to the mediator or examiner. For this reason, cognitive modifiability is best explained by the MLE theory.

MLE refers to an interactional process in which adults interpose themselves between the learner/child and his or her world and help him or her to make meaning of that world. For the purposes of this study project it was vital that the educators be trained to use the MLE criteria in their interactions.

The literature study was followed by a pilot study, which was carried out in order to refine and contextualise the theoretical framework underpinning the strategy. The results of this pilot study led to further refinements of the proposed strategy which developed into the practical dynamic assessment strategy. (See Chapter 4.) The prototype of the dynamic assessment strategy contains training in both the needs and relevance of the strategy within the South African context, the theoretical foundations which underpin it, and strategies for its successful implementation. It requires approximately four hours of intensive training.

The results of the research reflected that an overwhelming majority of the educators became more learner-centred and self-reflective, and had internalised and integrated the criteria of MLE. They found the strategy to be practical and implementable.

It is precisely strategies like this which are now needed in South Africa's educational transition. Without the necessary pre- and in-service training, the vision and principles of OBE could remain an idealistic dream, as opposed to an implemented and working reality.

Opsomming

Post-apartheid Suid-Afrika het 'n verskuiwing na prosesgesentreerde, uitkomsgebaseerde onderwys (UGO) ondergaan. Inherent binne hierdie verskuiwing en in die demokratisering van die onderwyssisteem is 'n beweging na holistiese, leerdergesentreerde en inklusiewe onderwys. Die suksesvolle implementering van 'n 'nuwe' onderwyssisteem vra 'n ingrypende paradigmaskuif ten opsigte van opvoeders se metodologie, veral wat betref die assessering van leerders binne hierdie prosesgesentreerde, uitkomsgebaseerde benadering.

Die konsep van dinamiese assessering is veral relevant in die verskuiwing na UGO. Dië dinamiese assesseringstrategie is gebaseer op Feuerstein se teoretiese ontwerp. Implisiet in die teorie is die konsepte van gestruktureerde kognitiewe modifieerbaarheid (SCM) en die gemedieerde leerervaring (MLE).

SCM is gebaseer op die aanname dat die mens die kapasiteit het om sy kognitiewe funksies te modifiseer en aan te pas by veranderde lewenseise. Die mens is dus 'n oop sisteem, vatbaar vir kognitiewe verandering. Strukturele veranderinge is deurdringend en determineer kognitiewe funksies in 'n breër reeks denkkategorieë. Feuerstein suggereer 'n lys van ontoereikende funksies by die invoer- verwerkings- en uitvoerfases van die denkkategorieë, wat kan dien as riglyne vir pogings tot observasie en mediëring. Die identifisering van die ontoereikende kognitiewe funksies, die vlak van modifieerbaarheid en die mediëring om dit te verander, word beskou as uiters belangrik vir die voorspelling van toekomstige leer. Op grond van hierdie basiese aanname verskuif die verantwoordelikheid vir 'n persoon se modifieerbaarheid van die individu tot die mediator of ondersoeker. Om hierdie rede, bied die MLE-teorie die beste verduideliking van kognitiewe modifieerbaarheid.

MLE is 'n interaksionale proses waarvolgens volwassenes hulleself tussen die leerder/kind en sy of haar wêreld plaas en hom of haar help om betekenis aan die wêreld te gee. Ter wille van die doelwitte van hierdie studieprojek was dit

uiters belangrik dat die opvoeders opgelei word om die MLE-kriteria in hulle interaksies te gebruik.

Die navorser se literatuurstudie is opgevolg deur 'n loodsstudie ten einde van die teoretiese raamwerk, wat die strategie onderlê, te verfyn en te kontekstualiseer. Die resultate van die loodsstudie het tot verdere verfyning van die voorgestelde strategie gelei wat ontwikkel het, in die praktiese dinamiese assesseringstrategie vir opvoeders (Hoofstuk 4). Die prototipe van die dinamiese assesseringstrategie omvat die opleiding, in beide die behoeftes en toepaslikheid van die strategie binne die Suid-Afrikaanse konteks, die teoretiese fundering wat dit onderlê en ook die strategieë vir die suksesvolle implementering daarvan. Dit vereis ongeveer vier ure se intensiewe opleiding.

Volgens die resultate van die navorsing het die oorgrote meerderheid van die opvoeders meer leerdergesentreerd en selfreflekterend geword en hulle het die MLE-kriteria geïnternaliseer en geïntegreer. Hulle het die strategie as prakties en implementeerbaar beleef.

Dit is in besonder strategieë soos hierdie wat nou nodig is vir die oorgangsfase in Suid-Afrikaanse onderwys. Sonder die nodige voordiens- en indiensopleiding sal die visie en beginsels van UGO slegs 'n idealistiese droom bly, in teenstelling met 'n werkbare realiteit.

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CHAPTER 1

RELEVANCE, STATEMENT OF PROBLEM AND OBJECTIVE OF STUDY

1.1 MOTIVATION FOR AND RELEVANCE OF STUDY

This researcher has been immersed in the practice and art of education for the past twenty-five years and has qualifications and experience in Senior Primary education, special class teaching and remedial therapy, as well as in Feuerstein's Instrumental Enrichment programme. The researcher currently teaches English in the mainstream to Grade 8 learners, as well as providing remedial and learning support to approximately twenty-two learners on an individual or small group basis. The researcher is a member of a learning team at a private, fully inclusive middle school (Grades 7-9, approximately 450 learners) in Cape Town, South Africa. The researcher has a B.Ed. in Educational Psychology and is a registered psychometrist.

The above introduction serves to stress the committed dedication of the researcher, who is striving in some active way to play a role in the implementation of Curriculum 2005, which is underpinned by an outcomes-based education (OBE) philosophy.

Many people believe that the education system in South Africa is in crisis, due largely to the legacy of apartheid which has left the vast majority of the population illiterate and under- or non-skilled. The education system is faced with massive economic cutbacks, which have resulted in retrenchment of educators, overcrowded classrooms and inadequate facilities and resources for learners and for educator training (Archer, Green & Pooler, 1992: 7-16).

This situation is corroborated by Park & Cilliers (1999: 57) who refer to '... the world-wide recognition that more effective schools are an urgent priority. This is especially true for South Africa where serious educational backlogs are evident.'

The guiding principles of the National Education Policy Investigation (NEPI) (NEPI, 1993: 3) were that the 'new' education system should be non-racist and non-sexist and that it would be a unitary system which would redress past imbalances. The new education policy would be democratic, transparent and fully accountable.

Stemming directly from this, and in line with international trends, was the call for inclusive, outcomes-based education in South Africa. Integrated approaches towards education and training were seen as crucial:

'The overarching goal of national education policy should therefore be to enable all individuals to value, have access to and succeed in lifelong education and training of good quality. All learners...should also be able to move easily from one learning context to another' (Department of Education, 1997: 11).

In order for this goal to become a reality, the knowledge and skills base of both the working and the unemployed population had to be upgraded. Young people, still at school, would have to be given better opportunities to continue their education and training. 'All learners would have access to lifelong learning' where the 'education process would prepare learners for work and life' (NCSNET/NCESS, 1997: ii).

Curriculum 2005 (launched by the National Department of Education in April 1997, and implemented in 1998, starting at grade 1) is a process-based education system where standards are defined in terms of learning outcomes. The emphasis is on what the learners know and can do at the end of a course of learning. This paradigm shift emphasises cognitive processes, rather than mere knowledge.

Ideally all educators should be aware of the principles of educational assessment and should be involved in continuous assessment. Accordingly, 'assessment emphasises the performance of the learner, thereby not only assessing what the learner knows, but also what the learner can do' (Jones 1995, in Engelbrecht, 1997: 59).

The challenge for educators will be how to evaluate and assess the cognitive processes of learners. The Draft Policy on Assessment for General and Further Education and Training in South Africa (in Engelbrecht, 1997: 60) encouragingly asserts that '...assessment policy underpins and strengthens the new outcomes-based approach to teaching and learning' and that 'assessment should be aimed at determining to what degree specific pre-determined outcomes have been achieved to assist the learner to progress to higher levels of achievement.'

In conducting an ERIC search to determine if such a dynamic assessment (using a test-teach-retest format) strategy exists in the South African context, 28 'hits' were highlighted. The search showed that presently there was no direct research being done on developing a practical, dynamic assessment strategy for school educators. Thus the need for, and relevance of, an educator-friendly and practical strategy to assess and evaluate cognitive processes, as well as to be able to monitor the cognitive growth of learners' outcomes, is not only evident, but vital.

Further, this strategy could also be used to conscientise educators to a fundamental paradigm shift so that they become aware of the cognitive processes underpinning all learning and how they can mediate the learning process to the learners.

1.2 RESEARCH PROBLEM

The vast majority of educators in South Africa are under-qualified to teach the basics of education, let alone to implement the sound cognitive procedures which form a crucial part Curriculum 2005.

In addition to this, the strategies which do exist to assess cognition are problematic. They are too expensive, too sophisticated or too specialised. They require lengthy training to administer and many are simply not adapted to the South African context or realities.

Such problems may lead to Curriculum 2005 not being adequately implemented. In order to assess processes, educators need to be trained quickly and effectively in their mediational role if they are to assess and monitor the cognitive processes effectively. Educators must be able to assess outcomes in a dynamic way in order to know that they are making a contribution to outcomes-based education.

1.3 RESEARCH OBJECTIVE

The research objective flows from the research problem: namely to develop a practical, dynamic assessment strategy for educators which is educator-friendly and classroom-based. Such a strategy should be able to be implemented without delay.

1.4 RESEARCH DESIGN

1.4.1 Type of research

In assessing the feasibility and applicability of the strategy, the researcher will be using both qualitative and quantitative research methodologies. (See Table 3.1 p 48 for an explanation of these terms.)

1.4.2 Literature study

The literature study functions as the theoretical basis for the research and is used to verify the researcher's findings. The literature study will also elucidate the shift to process evaluation, inherent in which is the educator's mediational role and an understanding of the cognitive processes which make up the learning experience. Both the educator's mediational role and an understanding of cognitive processes impact on outcomes-based education.

The researcher has included a critical discussion and evaluation of contemporary dynamic assessment strategies. Relevant and applicable

features will be extracted in order to develop the envisaged strategy which can be practically implemented in a South African context.

1.4.3 Pilot study

The empirical study took the form of a pilot study. It focuses on a qualitative and quantitative evaluation of the strategy to determine its applicability, user-friendliness, practicality and feasibility.

The aim of piloting is not to generate statistical, empirical results, but to ascertain whether this strategy is practical, usable and whether educators understand it. The results of this study will be used to make the necessary adaptations and refinements to the practical dynamic assessment strategy. (See Chapter 4.)

1.4.3.1 Research group

The research group consisted of educators from three primary schools in the Cape Peninsula. They were a voluntary, convenience sample. Brief training sessions (approximately 1½ hours in total) preceded the educators' use of the strategy.

1.4.3.2 Research instruments

The following research instruments will be utilised:

- an anonymous questionnaire (a quantitative instrument);
- an unstructured, informal interview (a qualitative instrument).

1.4.3.3 Research process

The pilot study will include the following processes:

- a training lecture on mediational skills and strategies;
- an interactional workshop on the cognitive phases (input-elaboration-output);
- evaluation and assessment one month later.

1.5 DEFINITION OF RELEVANT TERMS

1.5.1 Dynamic assessment

Dynamic assessment is dynamic both because of the attempt to assess processes and because teaching continues within the assessment. Dynamic assessment uses a 'test-teach-retest' model and is diametrically opposed to static assessment which is a 'once-off' test, giving an indication of strengths and weaknesses in acquired knowledge. Activity and modifiability are pivotal concepts in dynamic assessment.

'Dynamic assessment, then, is an interaction between an examiner-as-intervener and a learner-as-active participant, which seeks to estimate the degree of modifiability of the learner and the means by which positive changes in cognitive functioning can be induced and maintained. The emphasis here needs to be on cognitive functioning' (Lidz, 1987: 4).

According to Haywood and Brown (1990), dynamic assessment is used to describe procedures which are characterised by:

- a 'test-teach-test' or a 'teach-test' sequence;
- emphasis on assessment of processes of perception, thinking, learning and problem-solving, rather than on products of the past opportunities to learn;
- teaching/learning of generalisable cognitive processes;
- attempts to specify obstacles to more effective learning and performance;
- attempts to specify responses to teaching of generalisable processes;

- attempts to specify conditions that will permit/encourage more effective performance;
- attempts to distinguish between performance and potential.

Dynamic assessment is not intended to replace current approaches, but rather to add to currently available procedures.

1.5.2 Practical strategy

The strategy has been defined as practical insofar that it can be used without time-consuming and costly training, and that it will be readily accessible, both in user-friendliness and in price. It is envisaged that educators will take part in a three-phase workshop, consisting of:

- training in mediational skills/strategies and in cognitive processes;
- implementation of skills/strategies in their classrooms;
- monitoring, evaluation and self-reflection.

1.5.3 School educators

For the purposes of this study project, this term will mean appropriately-trained primary school educators who are, at present, involved in the practice of teaching.

1.6 STRUCTURE OF PRESENTATION

Chapter 2 (pp 9 – 46)

Literature study of the shift to process evaluation, issues regarding dynamic assessment, contemporary dynamic assessment strategies, the mediated experience as the main vehicle for dynamic assessment and a focus on the cognitive map as part of the assessment strategy.

Chapter 3 (pp 47 – 66)

A pilot study of the proposed strategy.

Chapter 4 (pp 67- 70)

A practical dynamic assessment strategy for school educators.

Chapter 5 (p 71 – 80)

Summary of findings, conclusions, implications, and recommendations.

CHAPTER 2

LITERATURE STUDY

2.1 CONTEXTUALISING THE SHIFT TO PROCESS-CENTRED EDUCATION IN SOUTH AFRICA

2.1.1 Values and principles guiding the new South African policy

The overarching principles contained in the National Education Policy Investigation (NEPI) document are non-racism, non-sexism, democracy, a unitary system and redress of past imbalances (NEPI, 1992: 3).

At the heart of these words are fundamental principles that underpin the education policy. These are that all learners have the right to quality education and the right to be treated in a socially, morally and emotionally just manner. This will create a system where the school supports and promotes social integration within the community. In terms of the policy, all learners have equal access to a single, inclusive education system which is responsive to diversity. The curriculum, therefore, has to be a universal one which is accessible to all. For learners to have equal opportunity and to benefit from the education system and society as a whole, barriers which isolated and marginalised learners should be overcome. Access to lifelong learning needs to improve, particularly for those with learning disabilities in disadvantaged and rural areas, and those who have been excluded from the education system in the past. Thus the education system must be responsive to the community in a contextualised manner. Education must be relevant, meaningful and prepare learners to take their rightful place in their community (NCSNET/NCESS, 1997: 53-54).

Policy must be based on educational principles. Firstly, the principle of holistic development with a child-centred approach, both promotes health and is developmentally beneficial to all learners. In the short term, curative interventions are a necessity, given South Africa's gross inequalities,

injustices and violent society. Problems and needs of learners need to be contextualised and addressed within the curriculum (Donald & Lazarus, 1994: 9-10).

Secondly, along with the guiding principles, it was recommended that support services should give priority to marginalised youth, students with special needs, those adversely affected by violence and those who had limited access to quality education and, therefore, to employment (NCSNET/NCESS, 1997).

Lastly, these principles need to be cost effective so that they can sustain a system of education which is meaningful, effective, practical and able to be implemented.

2.1.2 Educational dispensation in post-apartheid South Africa

The Government Gazette no 16312 of 1995, The White Paper on Education and Training, was the long-awaited policy document of South Africa's democratically-elected ANC government, which sought to 'transform the legacy of the past by building a just and equitable system' (Government Gazette no 16312, 1995:17). This document recognised the massive inequalities that existed in the past.

1995 was a landmark year: there was now a single, non-racial system for all. An integrated approach, a prerequisite for successful human resource development, was understood to be capable of making a significant contribution to the reconstruction and development of our country and our society. Equal access to basic education for all was guaranteed under the principles which underpinned the philosophy: redress of inequalities, equity, quality of education being improved and a commitment to rehabilitate schools and colleges. The goal of the education and training policy was to ensure that all learners have access to a lifelong learning programme.

Of great interest in the last few years has been the provision by the State of educators at an agreed-upon ratio. Naicker (1995) quoted the large-scale inequalities in educator:learner ratios: White 1:20; Black 1:87. While in specialised education the figures were - White 1:4 000; Black 1:60 000. Educators had to be properly trained and therefore the State, according to the Government Gazette no 16312 of 1995, undertook to fund teaching posts at affordable and educationally viable ratios at all state and state-aided schools. With such efforts under way, the need is even more urgent for a dynamic, affordable, educator-friendly assessment strategy for educators.

The South African Schools Act of 1996 acknowledged that no learner would be denied admission to school on any grounds (disability, language, learning disability, pregnancy). Thus the policy for learners with special educational needs (LSEN) was no longer contained in separate acts and the compulsory exclusion of any learner was abolished. This Act placed further responsibility on mainstream educators to rise to the challenge of teaching multi-ability level classes of learners.

The National Commission on Special Needs in Education and Training investigated the situation and needs of LSEN in South Africa (NCSNET, 1997). The thrust of the commission's report is on the development of education to ensure that the system responds to the diverse needs of all learners. The report sees the integration of mainstream and special education as essential. A whole-school development approach is envisaged to ensure that an inclusive and supportive learning environment is developed. All schools should cater for diversity and provide support so that each learner's potential is realised. All learners currently out of the system should be accommodated in ordinary schools, where possible, and support structures should be provided.

Thus there is a need to address the issue of exclusion and devise ways in which the mainstream can be modified to cope with learners who have learning problems. Research in South Africa needs to consider our unique

South African history and conditions, and the ways in which these influence educability.

The NCSNET/NCESS document (1997) has gone a long way towards dispelling any apprehensions evinced by educators. In order to assist a paradigm shift for educators currently in practice, the Commission recommended in-service training for educators, that universities and colleges provide pre- and in-service training on special needs and the development of training and support programmes for adults.

2.1.3 Support for learners with special needs in the new dispensation

There can be no doubt that developing South Africa, along with the rest of the industrialised world, is committed, in theory, to the idea of including LSEN into the mainstream of education. However, ‘... all [learners] require a radically reconstructed mainstream ... and specific needs under specific conditions, requiring specific expertise and resources’ is essential (Donald, 1993: 152). Donald endorses the idea of reconceptualising specialised educational needs as a continuum, as this accommodates some of the aspects of the South African reality. The conceptualisation of needs is thus seen as being ‘...context-dependent, generated as much through extrinsic socio-educational factors as through intrinsic disability’ (Donald, 1993:152). Some of the envisaged changes include the following: early identification of LSEN; empowerment of educators to meet the diverse needs of learners; and a more dynamic, interactive approach aimed at early and adequate support services.

This is further corroborated by Naicker, (in Engelbrecht, Green, Naicker, Engelbrecht, 1999: 22) who states that inclusive education in South Africa is a ‘constitutional imperative’. Naicker states further that the ‘actual implementation will not be easy since education is generally a conservative enterprise’. Implementation will only become a reality with committed work as the ‘rationale for such a position is associated with the difficulty related to

reversing established notions of teaching and learning that have been inherited from a very conservative system of education'.

NEPI (1992) recognises that the minimal requirements of the first stage of the process would be to provide Education Support Services (ESS) to mainstream educators. This policy document also sees the training of specialised support staff as a priority.

On the international front, South Africa was one of the signatories of the Salamanca Statement on principles, policy and practice in special needs education (Unesco, 1994). This statement defined the agenda for inclusive education. The major emphasis was the right of all children of the world to inclusive education and the reformation of the school systems to see that this took place. This implies that learners' diverse cognitive needs should be an educational priority in the new millennium.

The most logical way to redress the imbalances of the past and to get large numbers of marginalised youth back into school, is through inclusion in peer classrooms. For this to take place successfully, educators will need to be specifically trained to assess the learning needs of their learners. This makes the call for a practical training strategy for dynamic assessment even more urgent.

2.1.4 The shift to process-centred education

The move towards OBE, with its emphases on lifelong education, the achievement of outcomes and the application of learning, signals an attempt to meet the criteria for quality education for all, while catering for diverse needs. OBE bases curriculum design, content design and delivery on the assessment of knowledge, skills and attitudes which are needed by both the learner and society.

Curriculum 2005 aims to create learning environments that celebrate diversity and experiences that acknowledge learning rates, levels and styles. This

approach is seen as accommodating a range of needs within an integrated education system.

The primary task of education policy-makers is the establishment of a just and equitable education and training education system which provides a relevant, high quality education which is accessible to all learners, irrespective of race, colour, gender, age, religion, ability or language. A priority of both national and provincial education departments is, therefore, the creation of a transformative, democratic, open learning system, fostering in all its users a strong commitment to lifelong learning and development (Department of Education, 1997: 47).

2.1.5 An operationalised definition of outcomes-based education

According to the Department of Education (1997: 4), 'outcomes are the results of learning processes, formal, non-formal or informal and refer to knowledge, skills, attitudes and values within particular contexts. Learners should be able to demonstrate that they understand and can apply the desired outcomes within a certain context.' Thus OBE is a learner-centred, results-oriented design which is based on the belief that all individuals can learn and which reflects overarching intentions of personal awareness.

Thus owing to the growing concern about the effectiveness of traditional methods of teaching and training, which currently are still content-based, standards will in future be determined in terms of learning outcomes. The emphasis will be on what the learners can do at the end of a course of learning and teaching, instead of the means which are used to achieve those results (Department of Education, 1997: 11).

2.1.5.1 The difference between outcomes-based education and the traditional model of education

According to Spady (1994: 6-7) the main differences between OBE and the traditional model of education fall into four areas:

- Curriculum, instruction and assessment should be viewed as flexible and alterable means for accomplishing clearly defined exit outcomes.
- Time is an alterable resource, depending on the needs of educators/learners and is manipulated to the learner's best advantage.
- Standards are clearly defined, known and are 'criterion-based' for all learners, who are potentially able to reach and receive full credit for achieving any performance standard in the system.
- The focus is on increasing learners' learning and ultimate performance abilities to the highest possible levels before they leave school. Ultimate school achievement is directly reflected in what learners can do successfully after their formal instructional experiences have ended.

It is the obligation of the school to equip all learners with the skills and qualities needed to face life in the 'real' world (Spady, 1994: 9).

2.1.5.2 Premises underpinning outcomes-based education

According to Spady (1994: 10-24), the following premises underpin OBE:

- All learners can learn and can succeed, but have different rates and styles.
- Successful learning promotes even more successful learning, and rests on students having a strong cognitive and psychological foundation of prior learning success.
- Schools control the conditions that directly affect successful school learning. This means that those who are implementing OBE believe that they are capable of changing how they operate to allow and encourage all learners to be successful.

2.1.5.3 Critical outcomes

Critical outcomes are 'generic, cross-curricular broad outcomes that focus on the capacity to apply knowledge, skills and attitudes in an integrated way' (Department of Education, 1997: 3). These underpin OBE theory and

practice. Outcomes are actions and performances that reflect learner competence in using content, information, ideas and tools successfully (Spady, 1994: 2). They are thus clear learning results which educators want learners to demonstrate at the end of significant learning experiences.

2.1.5.4 Assessment and reporting within an outcomes-based education approach

In order for all learners to attain the critical outcomes, it is vital that the school keeps its assessment strategies in line with the principles and practice of OBE. Thus there has to be a move from content measurement to performance assessment. The move to performance assessment assumes the following (Herman et al. 1992 in Department of Education, 1997: 29):

A cognitive approach to learning in assessment, demonstrated by

- application and use of knowledge;
- assessment integrated with teaching and learning;
- integrated and cross-disciplinary assessment.

Authentic assessment, demonstrated by

- use of knowledge in real life contexts;
- meaningful tasks;
- public (known) criteria for assessment.

Multidimensional assessments, demonstrating

- knowledge;
- abilities;
- thinking processes;
- metacognition;
- affect.

2.2 DYNAMIC ASSESSMENT

2.2.1 Conceptualising the need for a paradigm shift in South Africa

The democratisation of the South African education system has resulted in the inclusion of learners who were previously ineligible or inaccessible to the system. This fact, together with the adoption of an outcomes-based educational system, has prioritised the need to develop test instruments and establish norms and application techniques. This has necessitated changes in the usually accepted tools/modalities of assessment.

The new paradigm that must emerge as a response to these needs arises from the dissatisfaction with the theoretical/philosophical stance underlying psychometric measurements; the environmental, sociological, political and economic pressures for change in how large masses of the population are evaluated; and 'the emergence of a different theoretical view of the concept of intelligence, its structure and its origins' (Feuerstein, Rand, Jensen, Kaniel and Tzuriel, 1987: 36).

2.2.2 Towards defining dynamic assessment

Dynamic assessment describes the nature of the assessment procedure which focuses on learning processes, rather than learned products. Assessing product outcome does not elucidate why the learner failed the task or what the learner's ability is regarding achievement. Dynamic assessment traditionally follows a test-train-retest format that 'focuses on learner modifiability and on producing suggestions for interventions that appear successful in facilitating improved learner performance. Dynamic assessment also provides information regarding functional and dysfunctional metacognitive processes, as well as regarding intensity of intervention involved in producing change' (Lidz, 1991: 6).

It is called 'dynamic both because of the attempt to assess processes (changing events) and because of the occurrence of teaching within the assessments' (Haywood & Brown, 1990: 412).

2.2.3 Prioritising a need for dynamic assessment

According to Burden (1996: 98-106) the purpose of assessment includes classification, diagnosis, intervention, evaluation and empowerment. Assessment is seen as part of education and seeks to foster learning and opportunities. It is not about classifying people into roles for society. Unless assessment can guide intervention, its value is limited. According to Das (1987: ix-x), assessment should be viewed as part of the individualised intervention programmes which will help to develop areas of weakness.

'If intelligence is not an immutable, reified substance but rather a capacity that can be targeted for development, then consideration must be given to supplanting the passive acceptant approach to intelligence testing with an active modification and dynamic approach that can produce the prescriptive information required to forge its enhancement' (Jensen & Feuerstein, 1987: 379). The focus of the assessment is thus the identification and removal of obstacles that presently may prevent the learner from functioning at higher levels. By determining and modifying the reasons for failure, the processes whereby a learner registers, elaborates and communicates information are changed.

'Shifting the focus from sources within the individual (e.g. learning disability, mental retardation) to sources outside the individual (e.g. the instructional environment) is a fairly recent phenomenon' (Jitendra & Kameenui, 1993: 6). These authors state that the one feature that seems to characterise all dynamic assessments is the use of guided learning to determine a learner's potential for change.

The dynamic assessment paradigm 'minimises the artificiality of the test situation by helping the learner to become familiar with the test content in a

context calculated to enhance the learner's sense of competence' (Budoff, 1987: 55). The learner is taught how to think or strategise about solving the problem, thus boosting competence and performing at a higher level. Budoff further argues that learners can perform as expected when they understand the demands of the task.

Minick (1987: 117) states that dynamic examiners share a focus in the extent to which the learner benefits from the examiner's attempts to optimise performances. When the learner works alone and is observed in order to assess the benefit from this instruction, 'the product is a quantitative measure of the child's ability to be modified by instruction' (Minick, 1987: 117).

Because dynamic assessment emphasises learning processes rather than underlying 'abilities' or 'traits', 'we assume that task-relevant knowledge and general task-specific strategies can be assessed in dynamic assessment and are amenable to change, and that these changes will produce meaningful improvements in task performance' (Vye, Burns, Delclos & Bransford, 1987: 328). This has important implications for educators' efficient and effective planning strategies. These authors further state that one important function of dynamic assessment may be to change the pessimistic attitudes of educators who, once they see positive changes in a child's performance, may alter initially low expectations. Their data demonstrate the potential benefits of including educators in the dynamic assessment process. 'The ability to shift the teacher's conceptualisation of the locus of failure from the child to the instructional techniques is an important first step toward changing the educational assessment and delivery system, and can be seen as one valuable role of dynamic assessment.' (Bransford, Delclos, Vye, Burns & Hasselbring, 1987: 485).

Meyers (1987: 403) states that dynamic assessment has direct implications for intervention and bases his 'process assessment' on four conceptual issues. These are firstly, that there must be a link between assessment and intervention; secondly, that assessment must be tied closely to the environment; thirdly, that assessment must focus on the processes and

products of behaviour and finally, that assessment must involve a process of generating and testing hypotheses.

With the South African reality in mind, Sewell (1987: 426) has argued persuasively that dynamic assessment is a non-discriminatory procedure as it shifts the purpose of testing from one of classification to an approach designed to facilitate the instructional needs of learners.

Assessment is typically the first step in remediation, but is also the antecedent of instruction. 'Assessment and instruction become the tools of a cooperative problem-solving activity that bonds educators to learners' (Ashman, 1992: 379).

2.2.4 Critiques of dynamic assessment

According to Tzuriel and Haywood (1992) one of the serious problems posed by the dynamic assessment model is that the learner's performance might be a function of the examiner's mediational style rather than the learner's cognitive status. The type and amount of mediation required needs to be rated. Also, the examiner's subjective perception may influence his or her judgements of the learner's deficient cognitive functions. Tzuriel and Haywood point out another consistent problem – the extensive time and effort required to train examiners and how much longer a dynamic assessment takes. The present study project will attempt to address this issue.

These same authors balance this argument with the fact that the long-term benefits 'derived from an optimistic, accurate, prescriptive assessment that is also expensive, should be weighed against the relatively shorter, inexpensive, and less demanding standard approach that is very often pessimistic, inaccurate, and of limited direct relevance to school learning' (Tzuriel & Haywood, 1992: 28). These authors counter-argue that the subjective component of the assessment, which is integral to the mediational process, can be monitored by developing accurate rating scales. The examiner's

double role as mediator and observer does, however, require special training techniques.

Frisby and Braden (1992) critique Feuerstein's assessment approach on semantic, logical and empirical grounds, and conclude that Feuerstein's approach to dynamic assessment is not a compelling competitor to traditional assessment. These authors argue that Feuerstein's approach to dynamic assessment is 'little more than an ideological philosophy in search of empirical support' (Frisby & Braden, 1992: 286). Another criticism is that most of the research done has been with children of below-average intelligence only (disadvantaged adolescent emigrants to Israel).

Bolig and Day (1993) refute what Frisby and Braden (1992) have claimed in terms of studies of dynamic assessment being carried out only with children of average or below average intelligence. They quote Ferrara et al. (1986), Ferretti and Butterfield (1992), Day and Hall (1987) and Paris, Jacobs and Cross (1987) who have done studies contrasting static and dynamic measures of children of differing ability levels. These researchers have helped to establish, empirically, the utility of dynamic assessments and have shown that dynamic measures covary in predictable ways with general intellectual ability. Bolig and Day (1993) also offer dynamic assessment's solutions to the criticisms of traditional intelligence tests. They claim that in terms of learning ease, static and dynamic measures together provide more information about a child's abilities than either one alone, as dynamic assessment assesses how readily the child can learn. In terms of instruction/intervention, they assert that the information gleaned from dynamic assessment can be used in the formulation of intervention programmes to promote the child's development. They agree with its non-discriminatory bias and applaud the fact that dynamic assessment shows few biases against minorities and the poor. (These biases are present in traditional intelligence tests.) These authors do acknowledge that dynamic assessment requires more time than static assessment; that the individualisation of the training makes standardisation of the assessment difficult; that the educator-learner ratio differs from the typical school learning environment; and that teaching

styles are different from those used in classrooms. Like Haywood and Tzuriel (1992) and Lidz (1992), these authors agree that the criticisms seem relatively minor compared with those of static techniques.

Jitendra and Kameenui (1993) identify several limitations of dynamic assessment. These are construct fuzziness (features that make it unique are blurred and indistinct), procedural spuriousness (techniques only empirically tested and authenticated by those who developed the techniques), instructional aloofness (tasks far removed from classroom tasks and therefore their generalisation is limited), instrument inadequacy (operational procedures have not been adequately developed or tested) and labour intensiveness.

Olswang and Bain (1996) critique dynamic assessment procedures because they are relatively time-consuming. These authors assert that static procedures are necessary for establishing the presence of a disorder and are often required for determining intervention eligibility. They argue that a clinician's time is valuable and that efforts to make informed decisions must be efficient and effective.

Mearig (1984) and Hamilton (1983), as discussed in Lidz (1987: 25), both agree that despite its obvious benefits, dynamic assessment has not been widely used by psycho-educational diagnosticians. The factors attributed to this were additional time requirements; that dynamic assessment's yield of information was not that different from traditional procedures; lack of adequate development of procedures; and inadequate dissemination of information.

Lidz (1991:20) counters this with the plea that training needs to be more readily available, less lengthy and less expensive. 'If the procedures are to be used, they need to be taught in training institutions and expressed in terms of the effective teaching practices that good teachers and parents have been using all along' (Lidz, 1991: 20).

2.2.5 Limitations of static tests

The terms 'interactive' and 'dynamic' would never have been associated with psychoeducational assessment a generation ago. They have currency now because of widespread dissatisfactions with the normative, standardised testing model, criticism of theoretical concepts of intelligence, recognition of abuses of standardised intelligence testing, and frustration with prediction and classification as primary goals of assessment ... At the same time, there has been a resurgence of dedication to "excellence in education" goals. These concerns have led to such extreme measures as prohibition of the use of standardised intelligence tests to determine school placement decisions, especially for minority children. They have led also to a search for alternatives to standardised, normative testing. (Haywood & Tzuriel, 1992 : v).

Bolig and Day (1993) summarise the reasons why traditional intelligence tests have been criticised. Such tests focus on what the child already knows, rather than what/how readily the child can learn; they discriminate against minorities and individuals whose backgrounds are not middle and upper-middle class; they do not address individual differences in motivation, personality and/or social competence; and they only assess one dimension of an individual's abilities – that of intellectual ability.

Haywood and Brown (1990) state that although the major goals of normative, standardised psychoeducational assessment include classification by scholastic aptitude, grouping for differential instruction, educational prescription and remediation in specific domains, the tests do not provide sufficiently detailed information to permit successful prescription (how much/what kind of investment is needed to improve learning performance). Thus remediation in specific domains cannot be diagnosed through standardised assessment. These tests contain little information about performance in a criterion situation in which there is teaching. These authors also state that standardised, normative tests do not reflect contemporary knowledge of cognitive and intellectual development, and are based on

outdated models of the nature and development of ability. Another problem with these tests is that they may lead to self-fulfilling prophecies. Because standardised, normative intelligence tests use the 'ceiling item' procedure of administration (stop testing after 3/5 consecutive 'failures'), the effect of this may leave children with the idea that they are incapable of getting correct answers, leading to a decrease in enthusiasm for academic-like tasks. Another effect of this may be that motivation within the test may be impaired, since the child is left with a sense of failure by the preceding test.

Haywood and Wingenfield (1992) expand on this when they criticise normative, (comparison based on peer's age/grade), standardised assessment for its possible inadequacy for children who come from other than 'mainstream' cultural, social and economic backgrounds. They assert that a person's potential to accomplish learning is characteristically assessed by observing what has/has not been learned in prior opportunities – rather than by observing learning as it actually takes place. There is thus a need for an assessment instrument that will allow investigators to infer the nature of psychological events that they cannot observe directly, to assess processes, changes and effects of deliberately induced changes. Dynamic assessment offers such a set of techniques.

Jitendra and Kameenui (1993) state that traditional assessment measures are not designed to evaluate specific instructional strategies for remediating learning deficits, nor do they recognise the learner's potential to succeed with adequate environmental support. Thus traditional assessment fails to address the responsiveness of an individual to instruction because it is based on the premise that prior learning predicts future performance. These authors further state that there are legal ramifications of using only norm-referenced assessment for the purposes of classification and placement of children at risk for later academic failure.

Budoff (1987) asserts that IQ tests measure the degree to which children can demonstrate what they have spontaneously acquired from their natural environment, and the skills and knowledge that predict future academic

success. The assumption is made that a learner who learned informally at the same rate as his/her chronological peers prior to entering school, will continue to learn at this rate, both formally and informally. This assumption cannot be justified because learners from non-middle class homes often do not have the same access to appropriate school-preparatory experiences.

Campione and Brown (1987) state that the results of standard test procedures are limited because of their product-based nature which provides only a partial view of the testee's status. These test procedures are further limited by their level of description which 'are couched in terms of very global aspects of performance (e.g. auditory sequencing) that are not easily theoretically relatable to interesting academic areas and tasks' (Campione & Brown, 1987: 86). These abstractions cannot guide instructional intervention programmes. A related problem is that the emerging profiles are based on assumptions gleaned from the generality of these factors inferred from the test. A further limitation of these tests is that the result of the assessment is taken as providing a relatively permanent profile of the particular person.

Lidz (1981) suggests too, that because static tests do not yield intervention/remedial data, the educator may feel some 'impotence resulting from the inability to always respond with an appropriate remedy' (Lidz, 1981: 4). In terms of educator empowerment, the envisaged practical strategy could go a long way to giving educators the tool to practise their art even more skilfully.

2.3 MODELS OF DYNAMIC ASSESSMENT

Jitendra and Kameenui (1993) provide a comprehensive summary of five distinct models of dynamic assessment.

2.3.1 Test-train-test assessment

This assessment of learning potential is based on a psychometric model of assessment that Budoff (1974) developed for learners with educable mental

retardation. Budoff's rationale for incorporating training procedures into assessment was that the training would equalise differences in disadvantaged learners' experience, therefore making it possible for them to generate competent responses.

2.3.2 Learning Potential Assessment Device (LPAD): mediational assessment

Feuerstein's (1979) approach to assessment is based on a theory of cognitive functioning in which a lack of mediated learning experiences (MLE) results in cognitive deficiencies. Feuerstein described mediated learning as *'the interactional processes between the developing organism and an experienced, intentional adult who, by interposing himself between the child and the external sources of stimulation, 'mediates' the world to the child by framing, selecting, focusing, and feeding back environmental experiences in such a way as to produce in him appropriate learning sets and habits'* (Feuerstein, Rand & Hoffman, 1979: 71).

The LPAD is designed to measure an individual's cognitive modifiability, or the extent to which cognitive structures can be changed in response to adult-mediated learning experience. It is a non-standardised clinical device which aims to assess the nature/extent of an individual's deficiencies, as well as the amount and type of training or mediated learning needed in order to benefit from direct learning. The LPAD is characterised by four changes that distinguish it from a normative, static test: a shift from product to process orientation; a modification of the test structure; a change of the test situation, especially examiner-client relationship; and a shift in the interpretation of results (Kaniel & Tzuriel, 1992: 402).

Underpinning Feuerstein's assessment model is the notion of understanding that the processes inherent in thinking and behaviour involve changes in four fundamental areas: the structure of the task (tasks used in the 'test-teach-retest' format enable the investigator to infer what effect the teaching has on the individual's capacity for change); the examination situation (the interactive

approach of the examiner as an educator-observer and the learner as a learner-performer); the orientation of the test (to explore the nature of the learning with the intent to obtain information that will serve to modify and enhance instruction); and the interpretation of the results (interpreting performance peaks as indicators of an individual's cognitive potential).

The analysis of the LPAD tasks is guided by a cognitive map that is used to identify, clarify and modify a learner's deficiencies. Deficient functions must be considered within the context of the three phases of the mental act: input, elaboration, output (Feuerstein, Rand & Hoffman, 1979).

Both Budoff and Feuerstein use a test-train-test procedure. Budoff's training involves teaching task-specific skills, but Feuerstein's addresses training of broader intellectual skills which enable the child to acquire a variety of cognitive operations in order to perform a range of tasks. Another notable feature is that Feuerstein's approach includes specific feedback to the learner. Budoff's focus is on test analysis, whereas Feuerstein's focus is on learner analysis.

2.3.3 Testing-the-limits assessment

This approach to dynamic assessment, developed by Carlson and Wiedl (1978), is based on the premise that intellectual and personality factors account for intra-individual differences in processing information. The approach differs from other dynamic assessment approaches in that specific interventions are integrated directly within the testing process. The content of traditional tests can remain unchanged, but the following modifications are embedded within the testing conditions:

Testing-the-limits procedures include providing simple feedback; prompting the learner to verbalise how he/she solved the problem; providing elaborated feedback that explains the principles involved in completing the task; prompting the learner to verbalise during and after solution; and providing an explanation of the principles needed to complete the task.

2.3.4 Graduated prompting assessment

This approach was formulated by Brown and Ferrara (1985) and Campione and Brown (1987). It has been greatly influenced by Vygotsky's (1978) theory about learning and development, and his notion of the zone of proximal development (ZPD) which entails those functions that have not yet matured, but are in the process of maturation. The ZPD is the distance between two levels of performance – the level that a child can reach unassisted and the level that can be attained when assistance is provided.

The graduated prompting procedure is concerned with an individual's learning potential and transfer efficiency in both general and specific areas. A distinguishing feature of this procedure is a measure of the amount of assistance needed. This measure serves as the primary metric in evaluating an individual's learning transfer efficiency. Transfer is the ability to use learned information flexibly. Essentially the research focuses on the amount of instruction needed to learn and transfer information. The procedure is based on the information-processing theory of intelligence. It is a test-train-transfer-test method of graduated prompting assessment.

Like Feuerstein's (1979) mediational procedure, this assessment produces quantitative data. Unlike those procedures used by Budoff, Feuerstein and Carlson, however, the graduated prompting does not rely on making high-level inferences. The graduation of prompts from general to specific allows a measurement of the minimum amount of assistance necessary to solve a given problem. The prompting is quite different from the mediation provided in Feuerstein's approach. The former (graduation of prompts) emphasises the focusing of attention of cues/patterns relevant for problem solution. The latter (Feuerstein's mediational approach) provides more than reminders. Learners are provided with expanded explanations and principles of problem solution in the latter approach (Lidz, 1991: 36).

2.3.5 A continuum of assessment model: mediated and graduated prompting

This model (Bransford et al. 1987; Burns, Haywood, Delclos & Siewart, 1987; Vye, Burns, Delclos & Bransford, 1987) incorporates the assessment procedures of Feuerstein's mediation assessment and Campione, Brown and associates' graduated prompting assessment. The mediational component of the model is derived from Feuerstein's theoretical notion that adequate learning experience is essential for cognitive development. Mediated assessment in the continuum of assessment model involves metacognitive skills such as planning and monitoring, but it differs from Feuerstein's LPAD assessment in that modifications of the mediated assessment result in a brief, scripted, instructional procedure. Although these standardised scripts are mediational in nature, potentially effective strategies for a particular learner might not be disclosed because of limitations imposed by the scripts. But the scripts could bypass difficulties with the LPAD (high level inference and lengthy training procedures). This could be part of a compromise between a comprehensive mediated approach and a standardised mediation intervention process.

In the mediational assessment, the nature of the prompts provided depends on the learner's performance. The continuum of assessment technique involves the initial administration of static measures followed by the graduated prompting procedures. Learners who perform below criterion in this phase are then provided with 'mediation' dynamic assessment. Results indicate that when a static assessment is followed by a graduated prompting method, learners' independent task performance increases on tasks already taught. The mediation method appears to lead to greater generalisation. In the practical context of the classroom, the graduated prompting method might be more relevant and valid, because of its close resemblance to classroom instruction.

2.3.6 Curriculum-based dynamic assessment

In addition to these models, Lidz (1991: 155-159) has proposed a curriculum-based dynamic assessment approach. Three versions of the task from the curriculum that the learner is experiencing difficulty with, are prepared. They are used during the pre-test, mediation and post-test phases of the assessment and are equivalent in difficulty.

The first form of the task is administered in the pre-test stage. There is no intervention and the examiner merely records the learner's responses and notes areas of difficulty. In the second phase, the second version of the same task is used. Prior to the mediation, the examiner considers possible interventions and scrutinises the following aspects of assessment: appropriateness; whether language or concept demands of the task need to be modified; how to enhance the learner's attention; how the task should be regulated for the learner; how the learner can be helped to remember what was learned; how the learner can be helped to transfer what was learned to other situations. An essential component of this stage is recording detailed notes of the learner's responses. In post-testing, the third version of the task is presented. Once again the examiner does not intervene, but only records the learner's responses.

A comparison of pre- and post-intervention performance is conducted, with a focus on what has changed. The summary sheet might also serve the purpose of completing the individual education programme (IEP). A lesson and/or teaching sessions are then developed based on the results of the assessment (Lidz, 1991: 155-156). This model, like the one which is currently being proposed by the researcher, relies heavily on Feuerstein's mediational criteria (intentionality and reciprocity, meaning and transcendence being the three non-negotiable criteria).

According to Lidz (1991: 31) an optimal assessment approach would include the following components: establishment of level of performance; determination of modifiability and response to instruction within the same

domain; diagnostic clues regarding potentially effective instructional strategies; and indications of ability to maintain and transfer what was learned.

Sewell (1987: 435) considers that 'Feuerstein (1979, 1980) has developed a model of dynamic assessment that is currently the most comprehensive approach as it links assessment practices to intervention at both a theoretical and clinical level.'

Although all six models of dynamic assessment attempt to link assessment and instruction, there are significant differences. These include: theoretical orientation (mediation vs social); purpose of assessment (identification, classification, prediction, informing instruction); types of skills assessed (general or domain specific); types of tasks employed; nature of interaction between the examiner and the learner; and quantity and quality of empirical support. According to Haywood and Wingenfield (1992) however, none of these approaches employs as extensive and verbal an interaction as does the dynamic assessment approach, based on the principles of mediated learning, developed by Feuerstein (1979).

What to teach and how to teach it are the essence of both assessment and instruction. This researcher is convinced that Feuerstein's mediated learning experience (MLE) is the best vehicle for achieving this end. During dynamic assessment, it is of the utmost importance to evaluate how learners' cognitive skills are being used during problem-solving activities and then cataloguing their use for consideration in later learning.

2.4 THE MEDIATED LEARNING EXPERIENCE (MLE) AS THE MAIN VEHICLE FOR DYNAMIC ASSESSMENT

'In any description of the learner during the course of the assessment process, it is the list of the cognitive deficiencies that is most relevant, and it is remediation of these deficiencies that is directly addressed by the assessment' (Lidz, 1991: 11). It is this researcher's belief that within the South African situation, every educator will need to have the knowledge and

skill to dynamically assess and access learners in their classrooms who are in need of additional academic support. This is in line with the ideals of transformational OBE and with those of inclusion. This researcher believes that it is not possible to dynamically assess learners effectively without the educator embodying the criteria of mediation, i.e. intentionality and reciprocity, meaning and transcendence, as these, together with the other criteria, help to give informed insight of the 'profile of the learner's inadequacies and deficiencies, to derive an impression of the learner's modifiability, to induce active and self-regulated learning to determine the level of intensity necessary to produce changes (modifiability and active, self-regulated learning), and to sample interventions that demonstrate effectiveness in inducing improvements in performance' (Lidz, 1991: 13). It was for this reason that the mediated learning experience was built into the present researcher's training programme, together with knowledge of the dysfunctions associated with Feuerstein's (1979) cognitive map.

Feuerstein's approach to dynamic assessment has as its core the theory of structural cognitive modifiability (SCM) and the mediated learning experience (MLE). The basic assumptions of the SCM theory are that human beings are open systems which are amenable to cognitive changes that affect their functioning and that cognitive modifiability is best explained by the MLE theory. As such, cognitive development requires MLE (Haywood & Tzuriel, 1992: 10).

MLE refers to an interactional process in which adults, usually the parents, interpose themselves between children and the world to modify a set of stimuli by affecting their frequency, order, intensity and context. Mediators arouse in children vigilance, curiosity and sensitivity to the mediated stimuli, and create for and with the children temporal, spatial and cause-effect relationships among stimuli. Feuerstein et al. (1979, 1980, 1987, 1988) suggested 11 characteristics of MLE, however, only the first three are considered as necessary and sufficient for any interaction to be classified as a mediated interaction:

intentionality and reciprocity, meaning and transcendence. (Haywood & Tzuriel, 1992: 10)

Thus the mediator selects, changes, amplifies and interprets objects and processes for the child. This is the method of choice for the present researcher, especially bearing in mind that in transformational OBE the educators' precise role, according to the Department of Education, 1997(a): 17-18, will be to:

- serve as mediators of meaning by encouraging and stimulating construction and production of knowledge;
- serve as mediators of learning;
- apply learner-centred educational approaches – the design and planning of a variety of learning experiences for the learners in their care to take part in;
- show learners how to use different ways of learning, note-taking, research, memory, cooperation with others, learning by doing;
- understand, and help learners understand, how to use information critically;
- help learners to solve problems and make decisions;
- encourage and demonstrate critical and creative thinking;
- show the benefits of developing effective communication and socialising skills;
- organise and facilitate group and collaborative work;
- organise classrooms for interactive teaching and learning;
- anticipate learner differences and provide the separate teaching and support strategies for differing education needs;
- develop effective assessment skills by using a mix of assessment methods;
- write accurate and clear reports on learner outcomes, indicating progress and remedial requirements;
- revise planning to enable slow learners to make faster progress;
- apply democratic and non-discriminatory practices in classrooms;
- create a supportive and caring atmosphere in the classroom.

The proposed strategy, which is based on the MLE as the main vehicle for dynamic assessment, goes a long way to making this mediational role of the educator a reality.

By using MLE criteria in their interactions, educators behave flexibly so as to explore the meaning of successes and failures. By providing feedback, they are ready to correct deficiencies, remove obstacles and find avenues for problem solving. Educators are totally involved in the activity and

intervene by giving feedback on performance, restraining impulsivity, focusing and preparing for difficult problems, requiring explanations and justifications, summarizing experiences and encouraging reflective, insightful thinking. In using these mediational processes, examiners are alert to subjects' reactions and convey to them the feeling that the tasks are difficult but manageable, and that the subjects are capable of mastering the tasks. Feelings of competence, challenge and interest are aroused by using various mediational procedures. The result of this active teaching process is often a change in the subjects' active exploration, task-intrinsic motivation, independence, pleasure and insight. (Haywood & Tzuriel, 1992: 13-14)

Using the proposed strategy will require an investment in attacking the cognitive deficiencies, poor learning habits and motivational patterns that are responsible for poor performance. This presupposes that the educator has the knowledge, commitment, dedication and intentionality to become involved in the process (Tzuriel & Feuerstein, 1992: 187).

According to Kozulin and Presseisen (1995: 67-75), *'cognitive functions required by formal schooling do not appear spontaneously and their development can be impeded by an insufficient amount of MLE and by a lack of experience with the higher order psychological tools. The interaction between the individual and the environment is never immediate; it is always mediated by meanings that begin outside the individual, in the world of social relations. This is what makes MLE such a powerful tool for educators as it is*

based on the internalized forms of what first appeared as social interactions.' There can be no more intense a social interaction than in a classroom.

The assessor, in this case, the educator, strives to function as the optimal educator and according to Lidz (1991: 13), *'engages in behaviours that have been found to be definitive of excellence in teaching or parenting (i.e. behaviours that have been associated with optimal cognitive development in children). The behaviour of the assessor during the course of this model of dynamic assessment is describable in terms of the components of the MLE ... which are hypothesized to account for experiential aspects that influence cognitive development ... Actually MLEs are granted even greater power than this ... it is the MLE that is viewed as the most proximal factor in this learning model, following direct experience'* (Lidz, 1991: 13). The model Lidz refers to is the LPAD, which proposes that learning takes place in terms of both direct experiences and MLEs. This model introduces the human/social interaction of the mediator (stimulus-human mediator-organism-human mediator-response). The 'social environment filters, focuses and interprets experiences impinging on the learner, and at a later phase provides the format for response as well' (Lidz, 1991: 13-14).

Like Lidz (1991), the present researcher views Feuerstein's concept of MLE as vital and central to the essence of the dynamic assessment interaction and has used Feuerstein's model (1979) as a basis for the current research.

Lidz (1991: 67-68) goes on to state that MLE is an attempt to account for the environmental and socialisation experiences that potentially influence the learner's cognitive development. MLEs are contrasted with direct learning experiences of learners. These experiences interact because optimal MLEs are predicted to maximise the learner's ability to profit from direct experience. If the learner has had inadequate MLEs, the learner is said to be culturally deprived. This is not to say that the culture, *per se*, is depriving, but that circumstances (poverty, illness) may reduce the adult's ability to provide optimal MLEs and therefore adversely affect the learner's cognitive development. But the MLE is interpreted as the direct influence on cognitive

functioning and not the physical, emotional or socio-economic state of the family. The preceding factors affect the learner's functioning through their effects on receptivity to and delivery of MLEs.

Feuerstein's theory of SCM emphasises the 'importance of culture, the essential nature of belief and value systems, and the significant part played by mediators in the cognitive development of children and adults across their life time' (Burden, 1996: 104). According to the same author 'the quality of mediation ... is an essential prerequisite for true dynamic assessment' (Burden, 1996: 106). This is the premise from which this researcher has worked.

MLE is seen as the vehicle for the dynamic assessment as the 'MLE forms the theoretical foundation of our belief in the reversibility of deficient cognitive processes under specified conditions of intervention' (Feuerstein, Rand, Hoffman & Miller, 1980: 17). These authors go on to say that 'MLE produces in the organism a propensity to learn how to learn, by equipping the organism with the tools necessary for this facility' (Feuerstein et al. 1980: 25). This goes directly to the core of OBE.

Budoff (1987: 56) makes the very valid point that educators need not only focus on relaying content and concepts, but need to help students strategise effectively and habitually. By not helping learners integrate the processes of abstraction, both educators' and learners' sense of incompetence is reinforced. The educator, by systematically and consciously integrating the MLE criteria, will be helping learners to increase their sense of autonomy and competency.

Minick (1987: 117), in explaining the flexible mediational nature of the interaction between examiner and learner, makes a strong point that this positive relationship is essential to the teaching-learning process, within which the educator can identify strengths and weaknesses as he or she observes and intervenes in the learner's efforts to carry out the task. Within this intense and intentional relationship, the educator can give the specific kinds of

assistance that are required if the learner is to attain the highest possible level of performance.

Tzuriel and Klein (1987: 269) reiterate that according to Feuerstein's theory, adequate MLE is necessary for an individual to benefit from new experiences. They too point to the fact that lack of adequate MLE leads to impaired cognitive functions. 'Dynamic assessment is a procedure based upon the theory of MLE, which provides an active teaching process that attempts to modify the individual's cognitive functioning' (Tzuriel & Klein, 1987: 269). It is for this reason that this researcher included the MLE in the practical dynamic assessment study project.

Schneider Lidz and Thomas (1987), while attesting to the central role of the MLE in assessment, state that a completely standardised, step-by-step format for the MLE is impossible. 'It is not possible to be a responsive mediator and at the same time follow a prescribed, standardised procedure' (Schneider Lidz & Thomas, 1987: 293). For the purposes of this study project, the mediator has not been restricted by these constraints. These authors reiterate the centrality of MLE in Feuerstein's theory, proposals for assessment and intervention. 'MLE is described as the central causative factor in cognitive development and defines the nature of the interaction between the examiner/teacher/parent and children during assessment, remediation and child-rearing. MLE is the primary agent not only of development, but of change and modification as well' (Schneider Lidz & Thomas, 1987: 293). In the present study project, a dynamic extension of Feuerstein's theory of MLE served as a means of observing cognitive deficiencies.

Like Schneider Lidz and Thomas (1987), Vye et al. (1987) also employed assessment procedures based on Feuerstein's mediation principles. Although their assessments last about 30 minutes only, their results confirm that a session this long can provide valuable information about the learner's learning. They used a series of mediation sessions when more in-depth information was needed. These authors reported that there is a relation between performance following dynamic assessment (based on MLE) and

performance on tasks in a related domain. They concluded that the mediation procedure does 'seem to be somewhat more effective in promoting transfer' (Vye et al. 1987: 340). These authors also acknowledge that the need for mediation for deriving prescriptive information, goes undisputed. They state that dynamic procedures, embracing MLE, are ideally suited for providing information about a learner's learning processes (task specific and general learning strategies) or about remedial strategies. It is hoped that the present study project will elucidate this information. Their results suggest that mediation is generally effective for remediating strategies that help children perform effectively.

Vye et al. (1987) also found that mediation is an effective technique for changing strategy use. Their data support the idea that one important role of mediational dynamic assessment is to change the educator's pessimistic attitudes. Although they are encouraged by the more positive educator expectations, these authors are aware 'that changes in expectations will not necessarily produce changes in teaching behaviours, especially if teachers do not have a better idea of how to teach in ways that help various children learn. This is one of the reasons why we are placing more and more emphasis on using assessments to provide prescriptions for teaching' (Vye et al. 1987: 355). It was for this reason that the present researcher included training in the cognitive map. Another of the outcomes of the present study project was to encourage educators to become more self-reflective.

The theory of structured cognitive modifiability (SCM) 'presumes that the crucial determinant of development in humans of higher levels of cognitive functioning depends on the growing child's opportunity to benefit from MLE' (Jensen & Feuerstein, 1987: 380). 'Through a highly focused and intensive MLE, the trained professional seeks to determine the nature, type and amount of investment required to remediate [Author note: re-mediate] the cognitive deficiencies and produce effective and motivational support for improved levels of functioning' (Jensen & Feuerstein, 1987: 382). In this way the mediator seeks to prevent failure and provides the learner with the support needed to overcome inadequacies in functioning. The present research

focused on the practicality of the assessment, its user-friendliness and implementability, keeping in mind that the learner's feeling of competence and self-esteem were crucial in the process.

Bransford et al. (1987) states that performance failures can be attributed, in part, to deficient instructional procedures and experiences (MLEs) rather than primary deficits in the learner. Once it can be shown that a learner can learn in a dynamic assessment context, educators should be convinced that the learner's major problem is the quality of instruction received in the past, rather than a lack of ability. These authors also reiterate the experimental evidence that dynamic assessment can positively affect and change educators' opinions and attitudes about the learning potential of a learner.

It was one of the aims of the present research to effect an educator paradigm shift towards a more process- and learner-centred approach. This is why the present research hinged on the educators becoming more self-reflective and to question or challenge what more they could do to help to make meaning for the learner. For this reason, the training in this study project included training in the mediational criteria and the cognitive map. It was hoped that by introducing educators to the mediational criteria, which underpin the learning experience, they would be able to assess the cognitive dysfunctions which are the focus of the dynamic assessment strategy being proposed.

2.4.1 Brief overview of the Mediated Learning Experience (MLE)

The two basic categories of MLE are transmission of information and mediated interaction.

'The cognitive development of the child is not solely the outcome of the process of maturation of the human organism itself and its autonomous independent interaction with the objectal world. Rather, it is the combined result of the direct exposure to the world and what we have termed the mediated experience by which cultures are transmitted' (Feuerstein, Rand, Hoffman & Miller, 1980: 16).

Culture is defined as a process by which knowledge, values and beliefs are passed from generation to generation. Feuerstein et al. (1980) state that the quality of the cognitive performance is a function of a condition in which the basic products of a culture are mediated to the individual. Cultural deprivation results when a generation does not mediate or transmit its culture to the new generation. A culturally deprived person is characterised by lack of or decreased cultural identity.

The 'lack of MLE results in a reduced propensity of the individual to organise and elaborate stimuli to facilitate their future use by means of mental processes. Consequently, the theory of MLE is central not only to our understanding of the phenomenon of cultural deprivation and hence of retarded cognitive performance but also to our remediation efforts, which aim at reversing the deficiencies responsible for cognitive impairment' (Feuerstein et al. 1980: 15). MLE thus forms 'the theoretical foundation of our belief in the reversibility of deficient cognitive processes under specified conditions of intervention' (Feuerstein et al. 1980: 17).

The defining characteristics of MLE must include the mediator's intention to transcend the immediate needs and the specific situation. In addition to this, MLE also requires a degree of intentionality on the mediator's part. Intentionality is shared by the learner as part of the interactive process. 'MLE produces in the organism a propensity to learn how to learn, by equipping the organism with the tools necessary for this facility' (Feuerstein et al. 1980: 25). According to these authors, MLE is therefore responsible for all functioning that transcends the biological needs of the individual.

According to Schneider Lidz and Thomas (1987: 293), 'MLE is described as the central causative factor in cognitive development and defines the nature of the interaction between examiner/teacher/parent ... and is the primary agent not only of development, but of change and modification as well.' According to these authors, the criteria of mediation (to be discussed in Chapter 3) are the crux of what happens during dynamic assessment, which is based on Feuerstein's model.

Kozulin and Presseissen (1995) point out that not every interaction involving a learner, adult and object lead to MLE. Intentionality and reciprocity, transcendence and meaning are vital if the interaction is to become an MLE. For the purposes of the present study, the point is well taken that these authors emphasise the centrality of the human mediator in the educational process. As such, educators need to change their preparation and work on optimising the learner's learning potential, rather than on merely covering the content required by the curriculum.

'An adequate MLE ... facilitates acquisition of cognitive functions, mental operations, learning sets and needs systems that permit the child later to benefit from learning experiences and be cognitively modified from learning opportunities ... The child internalises the learning mechanisms acquired in the process of mediation and uses them independently in the future' (Haywood & Tzuriel, 1983: 11).

2.4.2 The implications of a lack of Mediated Learning Experience (MLE)

'A lack of MLE most frequently occurs as a group-determined phenomenon, as a result of a lack of cultural transmission in certain socio-economic, cultural and ethnic sub-groups. This has resulted in the limited investment, made on the part of the adult generation, to communicate the values, attitudes and past history of the group to the new generation, at either formal institutionalised levels or through informal means' (Feuerstein et al. 1980: 37). Within the multi-cultural South African reality and in the post-apartheid era, some parents may 'feel compelled to reject their past to gain acceptance' (Feuerstein et al. 1980: 38). 'In this manner, an entire community may relinquish its responsibilities in shaping the future generation. Clearly, such an attitude will have considerable impact on the self-image, identification, socialisation and moral and cognitive development of the child' (Feuerstein et al. 1980: 39). Within a mediated learning context, this could increase the pressure of the educator to use the criteria of MLE to become the transmitter of the culture in order for the learner to feel a sense of belonging within his or her community.

According to the same authors, 'the range of environmental determinants of a lack of MLE extends from historical, cultural and socio-economic factors to emotional, affective and physiological conditions that influence the child-rearing practices of parents. In all of these instances, a lack of MLE, its moment of onset, its severity and its length of duration will affect the growing organism's capacity to become modified by direct exposure to stimuli' (Feuerstein et al. 1980: 50). 'Children may not be receptive to MLE as a result of organic impairments or emotional disorders. Whatever the reason, when MLE is impeded and the barriers produced by the organism are not bypassed, the result is cultural deprivation' (Feuerstein et al. 1980: 67).

These authors (Feuerstein et al. 1980) are however optimistic, and are convinced that at the core of the theory of MLE is the implication that low cognitive performance is a reversible condition. Their data show that 'the capacity of these children to become modified has produced evidence of the plasticity of the human organism, which has led to the concept of MLE as the proximal determinant of cognitive performance' (Feuerstein et al. 1980: 59).

According to Jensen and Feuerstein (1987: 381) 'the individual who has not received adequate MLE reveals rigidity and a lack of plasticity in the face of such needs. Deficient cognitive functions, fragile or non-existent mental operations, an eroded sense of self, passivity and deficient need systems are seen as resulting from a disruption of those processes of mediation that normally ensure the cognitive development of the human being.'

Kozulin and Presseisen (1995) have summed up that 'cognitive functions required by formal schooling do not appear spontaneously. Moreover, their development can be impeded by both an insufficient amount of MLE and by a lack of experience with the higher order psychological tools. Thus cognitive education should become an integral part of school curricula and teacher development.' This quote leads directly onto the focus of educators being conversant with the dynamic assessment components of the cognitive map.

2.5 THE COGNITIVE MAP – A TOOL FOR DYNAMIC ASSESSMENT

According to Burden (1996: 106) 'the notion of a cognitive map, incorporating the notion of learning phases and allied to MLE, offers convenient and helpful heuristics.' The cognitive map gives the key elements that are involved in the successful completion of any mental act.

The cognitive map represents a model in terms of which mental acts may be analysed according to seven parameters: content, operations, modality, phase, level of complexity, level of abstraction and level of efficiency. In our theoretical framework, the map, in conjunction with the inventory of deficient functions, explains cognitive behaviour by analysing its components, and locating and interpreting any weaknesses that may occur. Through a process-orientated approach, the cognitive map and repertoire of deficient functions enable a dynamic assessment of the child's functioning. (Feuerstein et al. 1980: 113)

According to Lidz (1991: 17), 'using these dimensions enhances the assessor's ability to predict the generalizability of assessment results to the instructional situation.' Earlier Lidz (1987: 444) had stated that 'it is therefore a prerequisite of a dynamic assessment to have a coherent notion of the cognitive functions expected to be involved in the solution of tasks selected for inclusion in the assessment, as well as a working list of possible deficiencies. This same author attests that 'Feuerstein (1979, 1980) and his colleagues have provided the most explicit listing of such deficiencies, based on the input-elaboration-output model of the mental act' (Lidz, 1987: 444).

This is precisely the focus of the present study. The contents and components of the practical dynamic assessment strategy will be specifically dealt with in Chapter 4.

The idea of learning phases (input-elaboration-output) was introduced into the cognitive map. In approaching a cognitive task, 'individuals take in information (input), process this in an effective and efficient manner (elaboration) and express a solution that is appropriate to the demands of the situation' (Burden, 1996: 106). Individuals with learning difficulties may demonstrate problems in any learning phase, for example at the input (does not take in all the relevant information or acts impulsively); elaboration (does not apply appropriate strategies) and/or output phase (cannot formulate thoughts in comprehensible language).

Feuerstein et al. (1980) conceive of deficient functions as being a product of a lack of, or insufficiency of, MLE, resulting in compromised cognitive performance. 'The deficient functions relate to and help identify the prerequisites of thinking. In this sense, they refer to deficiencies in those functions that underlie internalised representational and operational thought and should not be confused with the operations or contents of thought ... The deficient functions provide a means for understanding and diagnosing the reasons for an individual's low manifest level of performance' (Feuerstein et al. 1980: 71).

These deficient functions are presented in four categories (Feuerstein et al. 1980: 73):

- Impairments in cognition at the input phase of the learning act.
- Impairments in cognition at the elaborational phase of the learning act.
- Impairments in cognition at the output phase of the learning act.
- Affective-motivational factors.

(See Tables 3.2, 3.3 and 3.4 in Chapter 3 for the application of this knowledge for educators).

According to Feuerstein et al. (1980), deficiencies of input and output do not impair the learners' functioning to the same extent as do deficiencies in the elaborational phase. Thus input and output are peripheral determinants of the

cognitive processes, in contrast to the elaborational phase which has a more central position and is more essential for proper cognitive functioning. Elaboration is believed to determine our cognitive behaviour. Even with impairments in the input and output phases, if the learner is able to elaborate, he or she can bypass the barriers in these phases. (One only needs to think of Helen Keller in this regard.)

Haywood and Tzuriel (1992) state that deficiencies in these phases of the mental act serve as a guideline for observation and mediational efforts. 'Identification of deficient cognitive functions, the level of their modifiability and the mediation required to change them are considered to be of critical importance for prescription of future learning' (Haywood & Tzuriel, 1992: 12). According to these authors, the compilation of a profile gleaned from this assessment 'would specify change in deficient cognitive functions; specific content areas and operations; non-intellective components (motivation, feeling of competence and the degree of efficiency across the assessed functions' (Haywood & Tzuriel, 1992: 15). This is reiterated in Feuerstein et al. (1987) where it is explicitly stated that the cognitive map permits location of the deficient functions, which are analysed during the process-orientated assessment. In the present study, the educators used the cognitive map to attempt to pinpoint deficient cognitive functions. Therein lies the practical strategy as proposed in this study project.

Bransford et al. (1987: 488) states that 'Feuerstein [1979] emphasizes the role of the knowledge base in successful performance (e.g. "lack of verbal tools") and the need for efficiency in accessing and utilising appropriate knowledge (e.g., "inability to select relevant cues when defining a problem"). This focus on the importance of knowledge and efficiency of access, in addition to general strategies, suggests that we should not always expect automatic transfer from one set of tasks to another.' Lidz (1987: 446) states that 'although the emphasis on the deficiency may appear negativistic on the surface, it must be kept in mind that what has been devised is a diagnostic-remedial approach. Each negative statement of deficiency implies its converse, a positive function.'

Sewell (1987), in summing up, states that 'a cognitive map ... clearly delineates the potentially deficient functions within three phases of mental activity: input, elaboration and output. It is within the established seven parameters of the cognitive map that the cognitive tasks are organised. The sensitivity of this process to environmental, motivational and cognitive problems is a decisive factor in making this assessment process an alternative for testing the culturally different child.' This would be a further compelling reason for the inclusion of this type of assessment in the present study project.

2.6 SUMMARY AND CONCLUSIONS

For this researcher, Haywood and Tzuriel (1992) sum up the researcher's position very eloquently. 'Feuerstein's theory of structural cognitive modification and mediated learning experience is by far the most complex and most comprehensive of these theories, and that may constitute one of its problems: it explains too much, with interdependent parts of the theory. It is also the least empirically derived and supported' (Haywood & Tzuriel, 1992: 505).

This researcher has used Feuerstein's theory precisely for its complexity and comprehensive nature, as well as its applicability and relevance to the South African context and the new educational dispensation. The empiricism is not an issue for the practical strategy which is proposed. The present strategy has used the theory in practical, implementable and user-friendly ways in order to promote dynamic assessment.

CHAPTER 3

PILOT STUDY

The purpose of this chapter is to present the pilot study which was carried out to refine the theoretical and conceptual dynamic assessment strategy for educators which would be practical, user-friendly, easily implementable and which did not require lengthy and expensive training. As was stated in Chapter 2, the phases of the in-service training to implement the strategy will be fully elucidated in this chapter, and will be presented in its refined form as the practical dynamic assessment strategy in Chapter 4.

3.1 METHOD OF RESEARCH

The researcher used both quantitative and qualitative methods of research. 'Quantitative research is based on observations that are converted into discrete units that can be compared to other units by using statistical analysis ... Qualitative research, on the other hand, generally examines people's words and actions in narrative and descriptive ways, more closely representing the situation as experienced by the participants' (Maykut & Morehouse, 1994: 2). Qualitative research is based on a phenomenological position, while quantitative research is based on a positivist position. The difference between these two approaches is explained in Table 3.1.

Table 3.1: The difference between a positivist and a phenomenological approach

| QUESTION | POSITIVIST | PHENOMENOLOGICAL |
|------------------------------------------------------|-------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| How does the world work? | By dividing and studying reality in parts, the whole can be understood. | Reality can only be understood as socio-psychological constructions forming an interconnected whole. |
| What role do values play in understanding the world? | Values can be suspended in order to understand. | Values are embedded in the research and mediate and shape what is understood. |
| Are causal linkages possible? | Causality is central. Cause is the prime focus. | Events are mutually shaped. Multidirectional relationships can be discovered. |
| What is the possibility of generalization? | Explanations can be generalized from both time and place. | Tentative explanations for one time and place are possible. |
| What does research contribute to knowledge? | Seeks verification or proof of propositions. | Seeks to discover or uncover propositions. |

(Adapted from Maykut & Morehouse, 1994:12.)

Quantitative methodology was used to interpret the anonymous, structured questionnaire, while qualitative methodology was used for the non-standardised, open-ended, unstructured interview.

3.1.2 Study group

The researcher selected four primary schools (Grades R-6) to be part of the study project. These were convenience samples as regards accessibility and location. Three of the selected schools were private schools and one was a local government school. When the researcher approached the principals of

these schools to explain the study and to ask for permission to work with interested educators, all the principals wanted the researcher to present the initial training as part of on-going staff development. After this, the researcher was welcome to ask for volunteers to join the study group. One of the private schools withdrew from the study three weeks after they had committed themselves to be part of the group. (The reason given was pressure of having to do reports and simply not having 'enough time or energy to get involved in something else'. The researcher did offer additional training, but the principal said that his 'staff were very tired'.)

Excluding this school, 31 educators (out of a possible 63 who were present at the presentation) wished to be part of the study group to implement the proposed strategy. Of these, 15 educators attended the follow-up meeting a month later. Reasons for the drop in numbers were given as illness on the day, attendance at workshops, extra-mural duties, school play, report writing, book expo and personal commitments. These meetings were scheduled and confirmed with two weeks' notice and with a reminder three working days before the meeting was to take place.

3.1.3 Measuring instruments

Because of the initial response, the researcher, within the confines of a study project, was not able to interview all the participants. Thus the structured, anonymous questionnaire became the quantitative device and the informal, unstructured group interview was the qualitative measure. The researcher had drawn up and given each participant a document entitled 'Personal Reflection of the Process' to fill out after the second training session, and to be handed in completed, a month later. This was to serve the purpose of the structured, open-ended questionnaire. Both the researcher and supervisor felt this original questionnaire was too tedious, verbose and inappropriate for the data which it was hoped to generate. Thus the pared down version of the anonymous questionnaire was administered. (See Addendum 1.)

3.1.4 Development of the training process

The process developed in three distinct phases:

- Input – need and relevance of training in mediational criteria.
- Elaboration – training in the cognitive map and cognitive deficiencies.
- Output – assessment and evaluation of the process after one month.

3.1.4.1 The input phase of the training process

This phase was concerned with the need for, and relevance of, the mediated learning experience (MLE). As mentioned in the previous chapter, the criteria for the MLE would be elucidated at this point. The criteria of MLE were geared specifically towards school educators and were compiled using Jensen and Feuerstein (1987: 385-389); Lidz (1991: 106-111); Haywood and Tzurriel (1992: 10-11); Kozulin and Presseisen (1995: 67-75); course notes from the researcher's training by Mandia Mantis in Feuerstein's Instrumental Enrichment (1994) and from the researcher's professional experience. This in-service training session lasted for one hour. The participants completed an evaluation at the end of the session.

The criteria of mediation will now be elucidated, showing how they can be operationalised in a classroom setting. They must be seen as interconnected and interlocked, with the first three being vital to every MLE. The terms 'mediator' and 'educator' will be used interchangeably.

Intentionality and reciprocity seek to 'hook' the learner, arouse interest and challenge beliefs. There is a mutual interaction whereby the mediator has the intention to share and the learner wants to receive. The mediator needs to constantly assess whether he or she is interested, enthusiastic and interesting. The intention is to use the interaction to produce change in the learner.

Methods of mediating intentionality and reciprocity means that the mediator needs to know each learner as a unique individual and that the ground rules need to be set for the interaction. Changing the setting and varying the stimulus is vital if the educator is to engage the learner consistently. Media (e.g. film, cartoons, music) should be used as a springboard for discussion. Answering questions ensures reciprocity, as does open discussion where all feel that their contribution is valued.

Meaning implies that the subject matter is placed in a meaningful context. The learners should understand that both they and the educator are learners and that they will work through problems together. For this to happen, cultural values need to be unlocked.

The mediator needs to ask him/herself questions such as, 'What is the purpose/significance of the lesson? Is it relevant/appropriate? What is the structure? How can it be modelled? What are the positive and negative aspects?' The mediator must invest significance and purpose in an activity, both cognitively (why) and affectively (emotionally). The mediator uses the interaction to communicate the manifest content to the learner as well as communicating the explicit meaning, plus the generalisable meaning.

In order for the learner to accept and transform the experience, it is important to encourage the asking of questions and to supply meaningful answers. It is also important to give reasons for activities and behaviours and to give the social and/or cultural values and meanings to various phenomena. The mediator should always acknowledge the meaning expressed in the responses. The importance of activities should be modelled.

Transcendence is the linking or bridging from the immediate experience to underlying principles and skills which will be used elsewhere and in related activities. In essence it is what is left when the facts have been forgotten, i.e. education. Ideas and activities must be linked, always keeping in mind that the product is not as important as the process. The process should be

integrated into the content, i.e. study skills are part of the content. There is always a need to cross check and re-explain.

Some methods of mediating transcendence show how to apply a general rule to related situations. Skills learned in the classroom should be linked to everyday life situations. There should always be linkages from the present, to the past and to the future.

The mediation of **competence** gives the learner the knowledge that they are loved and competent. Educators should be generous in their praise. This instils in the learner a positive belief in their ability to succeed. Encourage them to know their strengths and weaknesses. The mediator should always praise the process of getting there, not only the product. It is important that both educator and learner think aloud, and then for the educator to work with the errors. This can be useful as educators work with learners and with a process to get it right. This is a form of dynamic assessment as the educator teaches and questions according to the wrong answers and notes how much investment is needed for the learner to get it right.

The educator should always focus on the good behaviour, rather than labelling the bad. Lessons should always be presented according to the learners' level of expertise. The learners should be made aware of their progress and the mediator should INTERPRET the reasons for their success.

Self-regulation and control of behaviour involves thinking about one's own thinking and monitoring one's behaviour. The learner is forced to take responsibility for his or her behaviour and try to eradicate the learned helplessness that persists in so many learners. Self-concept is enhanced when the learner takes responsibility for him/herself. The control of impulsivity is a major cognitive dysfunction and learners should be encouraged to STOP-THINK-GO.

The mediator should model and talk through what the learner could be doing and should walk alongside the learner to overcome bad habits. In order to be

successful, the mediator must be a respected, consistent role model. Thus the mediator should not interrupt, should reflect consciously before responding and structure and plan each lesson. The mediator must give learners strategies for regulating behaviour (re-read paragraphs, caution them when faced with a difficult task, remind them to check thoroughly, edit and proofread before handing in work).

In **sharing behaviour** learners need to know that there is no self without others. People need to be sensitive towards others and interconnect with both their heads and their hearts. Competitiveness at the expense of sharing, is counter-productive. Inclusion, use of peer tutors, group work and cooperative learning all instil sensitivity towards others. The mediator should select subjects which emphasise the importance of cooperation.

Individuation/Separateness is the acknowledgement and celebration of uniqueness and independence. The mediator should thus encourage independent and original thinking and accept divergent responses which will enhance learners' interests, talents and strengths. Implicit in this, is the educators' guarding against living out their own expectations of the learners. Thus they should refrain from expecting learners to identify totally with their values, beliefs and actions.

Goal planning is the setting, planning and achievement of goals. When educators make the process explicit, they help to plan and to achieve goals. In order to do this effectively, all people need to learn how to make effective use of time. The efficient use of time has a lot to do with living effectively. It can be accepted that being goal-directed furthers one. Thus it is important to give learners an overview to help them to think about, and to plan for, the future.

The educator needs to help learners to delay gratification, to take responsibility for their actions and to realise that actions have consequences. This all implies that clear goals need to be set for each lesson and for the overall course. The mediator should at all times encourage perseverance and

patience in pursuing goals, and must show learners how to plan, review and modify goals according to changing circumstances. It is also essential that the mediator helps learners to break down tasks into manageable parts and systematic stages.

Novelty and challenge are an essential part of the MLE. The learners need to feel comfortable with the notion that a problem is just a solution in disguise. Mediators need to work hard to instil the motivation that is needed in order to confront new and difficult tasks, especially as educators try to move learners beyond the 'comfort zone'. Mediators must help learners to overcome the fear of the unknown and the resistance to try anything new or unusual.

As learners are stimulated to explore new territory, the mediator should model both a positive feeling of anticipation in facing a new and changing environment, AND model an aspiration for excellence. In encouraging curiosity, creativity and divergency, the mediator needs to reward perseverance and reinforce a sense of pride in mastering a new and difficult task. Implicit in this, is the idea that difficulty should be normalised. Learners should be invited to confront situations previously avoided and be given the opportunity to puzzle things out, knowing full well that the educator has every confidence in them. As mediators, we should resist the urge to protect them or to do it for them.

Learners must be aware of **self-change**. Feuerstein is alleged to have said that the only constant is change. Learners need to recognise the importance and to be aware of the dynamic potential for change. Self-evaluation means that both the educator and the learner are aware of and are monitoring continual change. Mediators should encourage learners to revisit and rejoice in their own progress. Implicit in this, is the mediator's strong belief that all people are capable of changing, developing and improving. Learners should self-mark and should be discouraged from comparing their work to others'. They should be encouraged to share positive perceptions of change and to explain the benefits of maturing. Labelling in any form should be de-emphasised as development is limited by the self-fulfilling prophecy.

Feuerstein has added another two criteria. The **optimistic alternative** is the strong belief that when something is possible, it will lead to action. Educators should actively mediate the search for the optimistic alternative. The **feeling of belonging** stresses the importance of belonging to a group and of upholding cultural and ethnic values. These two criteria are even more crucial in South Africa's multi-cultural society and in a context where inclusion should be the norm.

3.1.4.2 The elaboration phase of the training process

This phase, which was to elucidate the implementation of the strategy, took place two working days after the input phase and concerned only those educators who volunteered to be part of the process. The dynamic assessment part of this phase focused on the educators' understanding of the cognitive map and how this may manifest in classroom functioning and behaviour. The following three tables were compiled based on Feuerstein et al. (1979: 57-89); Feuerstein et al. (1988: 71-116); course notes from the researcher's training given by Mandia Mantis in 1994; and from the researcher's own professional experience. This phase was far more interactional and lasted for 40 minutes. The participants were asked to keep a journal and were given a form, 'A Personal Reflection of the Process', which was to be completed and brought to our meeting one month later.

Table 3.2: The input phase of the learning act

| Cognitive function | INPUT | Cognitive dysfunction |
|---------------------------|-----------------------------------------------------------------|------------------------------|
| 1. Clear | Perception | Blurred and sweeping |
| 2. Systematic | Exploration of a learning situation | Impulsive |
| 3. Precise and accurate | Receptive verbal tools and concepts | Impaired |
| 4. Well developed | Understanding of spatial concepts | Impaired |
| 5. Well developed | Understanding of temporal concepts | Impaired |
| 6. Well developed | Ability to conserve constancies | Impaired |
| 7. Precise and accurate | Data gathering | Impaired |
| 8. Well developed | Capacity to consider more than one source of information | Impaired |

(Adapted from Feuerstein et al. 1979; 1988.)

The following implications and strategies were discussed with the educators in this workshop. They were able to identify learners who manifested these dysfunctions. Each number in Table 3.2 refers to a manifestation of cognitive functions and dysfunctions. Suggestions for re-mediation and intervention are mentioned hereunder:

1. Look carefully now; don't guess ... examine. Slow down and take your time. Look before you leap.
2. Point by point. Did you understand the story?
3. Language is vital in terms of input. What were the instructions? Did you understand what you have read?
4. Are you lost? Which is your right hand?

5. **Can't structure essay into logical sequence. Late again?!? Need to work out timetable with them.**
6. **Same picture seen from different angle. What's the same? Different?**
7. **Careless; silly mistakes. Essay off the point.**
8. **Need to consider different points of view. Missing important detail.**

Table 3.3: The elaboration phase of the learning act

| Cognitive function | ELABORATION | Cognitive dysfunction |
|---------------------------|----------------------------------------------------|------------------------------|
| 1. Accurate | Definition of the problem | Inaccurate |
| 2. Ability to | Select relevant cues | Impaired ability to |
| 3. Ability to | Engage in spontaneous comparative behaviour | Inability to |
| 4. Broad and wide | Mental field | Narrow and limited |
| 5. Need for | Spontaneous summative behaviour | Impaired need for |
| 6. Ability to | Project virtual relationships | Inability to |
| 7. Need for | Logical evidence | Lack of need for |
| 8. Ability to | Internalise events | Inability to |
| 9. Ability to use | Inferential-hypothetical thinking | Restricted use of |
| 10. Ability to use | Strategies for hypothesis testing | Impaired |
| 11. Need for | Planning behaviour | Lack of |
| 12. Adequate | Elaboration of cognitive categories | Impaired |
| 13. Meaning | Grasp of reality | Episodic |

(Adapted from Feuerstein et al. 1979; 1988.)

The following implications and strategies were discussed with the educators in this workshop. They were able to identify learners who manifested these dysfunctions. Each number in Table 3.3 refers to a manifestation of cognitive

functions and dysfunctions. Suggestions for re-mediation and intervention are mentioned hereunder:

1. You haven't defined the problem for us. What must we do?
2. You are missing an important clue. What is relevant? Irrelevant?
3. Let's see what is similar and different here.
4. Remember the strategy we learnt yesterday? Assist long-term memory from short-term memory.
5. You didn't count all the examples. How many marks is it worth?
6. Apply the old rule to this new example: missing words; closure; project to close the learning.
7. Give a logical explanation for your statement.
8. Try to solve without using concrete aids. Do it in your head. Think hypothetically.
9. Try to form a general rule from the examples (induction). Deduction (apply the rule).
10. You haven't tested the hypothesis yet.
11. Didn't plan essay well.
12. Inability to extend idea further.
13. Try to see the connection or relationship between isolated entities.

Table 3.4: The output phase of the learning act

| Cognitive function | OUTPUT | Cognitive dysfunction |
|---------------------------|---------------------------------|------------------------------|
| 1. Mature | Communication modalities | Egocentric |
| 2. Participatory | Output responses | Blocking |
| 3. Worked through | Output responses | Trial and error |
| 4. Adequate | Expressive verbal tools | Impaired |
| 5. Precise and Accurate | Data output | Impaired |
| 6. Accurate | Visual transport | Impaired |
| 7. Appropriate | Behaviour | Impulsive/Acting-out |

(Adapted from Feuerstein et al. 1979; 1988.)

The following implications and strategies were discussed with the educators in this workshop. They were able to identify learners who manifested these dysfunctions. Each number in Table 3.4 refers to a manifestation of cognitive functions and dysfunctions. Suggestions for re-mediation and intervention are mentioned hereunder:

1. Put yourself in someone else's shoes. Try to be more empathetic and sensitive.
2. Don't give up. Try!! Tearing your text-book won't help.
3. Think of a system for working out the answer. Don't guess.
4. Can you explain more clearly? I don't understand your instructions.
5. That's a careless answer. The statement was wrong or inappropriate.

6. Copied incorrectly from the board again! Imagine the object in your head before you try to draw it. Stress the importance of rough drafts.
7. Don't jump to conclusions. Think before you shout out the answer.

3.1.4.3 The output phase of the training process

This phase took place one month after the elaboration phase. The object was to evaluate and monitor the process and to collect the completed questionnaires. The educators were given an opportunity to share their experience of the process. As stated earlier, the lengthy questionnaire was abbreviated to a 'Yes: No: Uncertain' response sheet. (See Addendum 1.) The educators filled these out in the first five to ten minutes, after which they shared their experiences. The session lasted for 40 minutes.

3.2 RESULTS

3.2.1 Quantitative results

Although 31 participants had committed themselves to be part of this process, 15 educators presented themselves at the output phase of the process. Table 3.5 shows the quantitative results of the pilot study.

Table 3.5: Quantitative results of pilot study

| QUESTION | YES | NO | UNCERTAIN |
|----------------------------------------------------------------------------------------------------------------------------------------|------------|-----------|-----------|
| Able to 'pinpoint' phase of learner's cognitive dysfunction | 9 | 0 | 6 |
| Able to 'pinpoint' specific area in the phase | 7 | 1 | 7 |
| Consciously and intentionally tried to use mediation criteria | 14 | 1 | N/A |
| Educator's approach is more learner-centred process-centred | 15 | 0 | N/A |
| | 10 | 5 | N/A |
| Has made a difference to learner's attitude motivation effort | 10 | 4 | 1 |
| | 9 | 1 | 5 |
| | 8 | 1 | 6 |
| Demonstrates increased sensitivity and positive attitude to the learner the task | 15 | 0 | N/A |
| | 12 | 3 | N/A |
| Educator demonstrates more self-reflection in terms of what they are doing how they are doing it consequences/implications | 15 | 0 | N/A |
| | 14 | 1 | N/A |
| | 14 | 1 | N/A |
| Think that the strategy is practical implementable user-friendly | 14 | 1 | N/A |
| | 15 | 0 | N/A |
| | 12 | 3 | N/A |
| Motivated to carry on using the strategy | 12 | 1 | 2 |
| Would like further input/training in this regard | 8 | 7 | N/A |
| TOTAL (270) | 213 | 30 | 27 |

3.2.2 Qualitative results

A recurring theme in the informal, unstructured interview was the fact that the educators unanimously felt that they were consciously being self-reflective in their practice and that this had significantly enhanced their interaction with the targeted learners. They all reported that they felt that they had got to know the learner better and what made him or her 'tick'. They said that their increased sensitivity and awareness had had a discernible impact on the learner - especially with regard to self-esteem and self-confidence. A major spin-off from this was that the educators had discussed the learner amongst themselves in the staff-room and this had kept them motivated as they compared ideas and reactions with each other. Other educators, who, even if

they did not teach the particular learner, tended to treat that learner with more tolerance and empathy, knowing that he or she was being 'tracked' by their colleagues.

At all three of the output phases at the different schools, we sat around a large conference table, enabling the educators to 'feed off' each other. In this way, a few educators who had originally said that they had not seen changes in the learner, commented that there was a need to 'go in baby-steps' and if they looked at one thing at a time, they could see real progress. They seemed to be inspired by each other's private victory (they all had a victory, no matter how small, to relate).

3.3 DISCUSSION OF RESULTS

3.3.1 Quantitative results

It is clear from the questionnaire that the educators did not feel confident to evaluate in which learning phase (input-elaboration-output) the cognitive dysfunction was occurring (only 60%), and only 47% could pinpoint the specific area in the phase. This is not a high enough percentage and makes more input in this area a priority. It was, however, reassuring to note that more educators would like training or input in this regard (83%) than were uncertain about 'pinpointing' the phase (40%).

It is clear from the results that the educators (93%) had integrated the mediational criteria and this had clearly led to a more learner-centred approach. Only 67% felt that their approach was more process-centred. In discussion with them afterwards, it was clear that some were having difficulty making the paradigm shift to transformational OBE, with its emphasis on outcomes. Of greater importance was the fact that the educators expressed the dissatisfaction with their 'standard' methods of assessment and had not yet integrated the fact that dynamic assessment was a valuable alternative to what they had been accustomed to doing.

The researcher was surprised that the scores for recognition of a difference in the learner's attitude, motivation and effort (67%; 60% and 53% respectively) were not consistently higher, especially in terms of the lively and enthusiastic conversation that followed the filling in of the questionnaire. As will be discussed in the qualitative results, the researcher felt that there were valid reasons for this.

It is obvious that the educators were far more self-aware and self-reflective as the responses in these categories were overwhelmingly positive. The educators' response to their sensitivity to the task (80%) stood in stark contrast to the fact that the educators agreed 100% that they were more self-reflective. This was explored further in the interview.

The educators did find that the strategy was practical and implementable (93% and 100% respectively), with 80% thinking that it was user-friendly. This anomaly was given credence in the interview and makes sense in that the educators felt that this was so because they did not feel competent to evaluate the phase of the learners' cognitive dysfunction, nor the specific area.

It was encouraging that 80% were motivated to carry on using the strategy. It is hoped that these numbers would increase if the pilot study's changes were implemented in the practical dynamic assessment strategy. (See Chapter 4.)

Only 53% indicated that they would like further training in this regard. The researcher felt that this was indicative of the fact that the pilot study needed further refinement and that more focused and lengthy training would lead to a more meaningful implementation of the strategy.

An evaluation of the total score shows that 79% of the educators answered 'Yes', 11% answered 'No' and 10% were 'Uncertain'. As far as a pilot study goes, these were encouraging results and helped to plan and to refine the strategy. (See Chapter 4.)

3.3.2 Qualitative results

It was apparent to the researcher at the start of all the interviews, that the educators thought that the assessment strategy did not connect with dynamic assessment, but rather only with mediational skills. This was a glaring fault in the pilot study and will be addressed in the prototype. The researcher was also aware that the educators seemed to be rather demanding of themselves in terms of their expectations. This was relayed to them and they unanimously said that they would have been more positive in the anonymous questionnaire had they filled it in after the interview. It was clear that they all gained perspective and confidence from sharing experiences with each other.

The educators did not feel competent to evaluate the cognitive functions and dysfunctions. The researcher felt that she had not made enough meaning for the educators and had not transcended or bridged the input into generalisable terms for the educators. It seemed as if the educators saw the dysfunctions and mediational criteria as discrete entities. The integration of these will be addressed in the prototype.

A lively discussion ensued with regard to the use of the mediational criteria. The educators felt very positive about this and it was apparent that by interacting on such a conscious and intentional level, they had fostered a far better relationship with their 'targeted' learner. In fact, the other educators had also been more sensitive towards the learner whom their colleagues had 'targeted'.

The fact that only 67% felt that their approach was more process-centred was explained in the interview. Some felt that they were already process-centred; others felt that they were still too heavily invested in the traditional methodology and that they needed more time to make the paradigm shift.

Many of the educators, having shared their experiences, wanted to go back and change their responses in terms of the learner's attitude, motivation and effort. Their interchange had alerted them to the fact that they had been a

little harsh in their evaluation and they were reminded by their colleagues to take 'baby steps' and to tackle one problem at a time. Of great interest was the support that they offered each other, especially as regards learners who had initially shown more progress and who were now 'slackening' off. One of the educators compared this to an athlete who does not train for a month. Apparently it would not take as long for this person to get fit again, compared to a person who had never trained. All of the educators shared that, in fact, the learners were doing more work, with less coercion, than had been the case in the past.

As regards the increased sensitivity to the task, three of the educators spoke to me afterwards and said that as they were Grade 1 educators, they had always been sensitive to the task.

It was abundantly clear that all the educators were being consistently self-reflective. In talking to them, it was also clear that they had shifted the responsibility of the learner's perceived problem from the learner to themselves. They were far more self-critical of their own behaviours, and indeed how the 'system' responded to the learner. Because they felt that they knew the learner better, they were rather protective of the learner as they did not want him or her to get into trouble for things that could have been mediated beforehand (e.g. getting detention for wearing inappropriate clothes on a 'civvies' day). They were quite clearly thinking how their actions and reactions impacted on the learner.

In terms of the user-friendliness part of the strategy, the consensus seemed to be that the cognitive part of the strategy had been the cause of only 80% finding the strategy user-friendly. This is the most academic part of the strategy and the challenge will be for the present researcher to invest intentionality and reciprocity, transcendence and meaning in the practical dynamic assessment strategy. The fact that only 53% would like further input or training in this regard, makes this challenge even more imperative.

CHAPTER 4

PRACTICAL DYNAMIC ASSESSMENT STRATEGY FOR SCHOOL EDUCATORS

4.1 INTRODUCTION

The dynamic assessment strategy, as indicated earlier, is based on Feuerstein's theoretical design. Implicit in the theory is the concept of structured cognitive modifiability (SCM) and the mediated learning experience (MLE).

SCM is based on the assumption that human beings have the capacity to modify their cognitive functions and adapt to life's changing demands. They are thus open systems which are amenable to cognitive changes. Structural changes are pervasive and determine cognitive function in a broad series of mental activities. Feuerstein has suggested a list of deficient cognitive functions at the input, elaboration and output phases of the mental act. These serve as guidelines for observational and mediational efforts. The identification of the deficient cognitive function, the level of modifiability and the mediation required to change them are considered to be of vital importance to predicting future learning. This basic assumption shifts the responsibility for a person's modifiability from that individual to the mediator/examiner. For this reason, cognitive modifiability is best explained by the MLE theory.

MLE refers to an interactional process in which adults interpose themselves between the learner/child and his or her world, and help him or her to make meaning of that world. For the purposes of this study project it was vital that the educators be trained to use the MLE criteria in their interactions.

The strategy was further refined and contextualised on the basis of the pilot study. (See Chapter 3.)

Each of the six sub-phases of the strategy will be briefly discussed, with cross-references to the theoretical bases and the pilot study.

For purposes of clarity, the entire strategy is portrayed in Table 4.1

4.2 A TRAINING PROGRAMME FOR A PRACTICAL DYNAMIC ASSESSMENT STRATEGY

It is envisaged that the training sessions would be in an interactional workshop format, with participants doing work in groups, brainstorming, mind-mapping and engaging in experiential work as they deal with different scenarios.

4.2.1 Sub-phase 1

This phase concerns contextualising the shift to transformational OBE, with its emphasis on process-centred education. (See 2.1 pp 9–15.) The phase introduces the idea of different methods of assessment within this paradigm. (See 2.1.5.4 pp 16–17.) The educator is introduced to the concept of dynamic assessment (See 2.2.2 and 2.2.3 pp 17–20.) and the limitations of static tests (see 2.2.5 pp 23–25.) These will be linked, in terms of relevance, to OBE, holistic and inclusive education (see 2.1.3, 2.1.4, 2.1.5 pp 12–4).

4.2.2 Sub-phase 2

This phase serves as an introduction to the mediated learning experience as the main vehicle for dynamic assessment (see 2.4 pp 31–43) and Feuerstein's mediational criteria (see 3.1.4.1 pp 50–55). Educators to be given notes on mediational criteria.

[BREAK FOR 20 MINUTES]

4.2.3 Sub-phase 3

This phase is more 'academic' as the conceptual and theoretical foundation for the strategy is elucidated. The dynamic assessment focus of the cognitive map is introduced. (See 2.4.1 p 39 and 2.5 pp 43–46.)

Sub-phase 4

This phase provides the training for the three phases of the learning act: input, elaboration, output. (See 3.1.4.2 pp 55-61.) Educators will be trained to understand how learners learn and to understand how dysfunctions manifest themselves in these three phases. [BREAK FOR 20 MINUTES]

4.2.4 Sub-phase 5

During this phase educators will be presented with scenarios (or will supply their own from their professional experience) which will give them the opportunities to re-mediate and to plan strategies for intervention. The importance of mastery, habit formation and intrinsic motivation will be emphasised.

4.2.5 Sub-phase 6

This monitoring and evaluation phase is crucial to the success of the strategy and has to be consistent and ongoing. The educators have to be assisted to keep motivated, focused and 'on track'. Training of a 'master' educator could be useful for this process.

4.3 CONCLUDING REMARKS

It is important that throughout the process, the golden threads of intentionality and reciprocity, meaning and transcendence are constantly mediated. The prototype has refined and addressed the areas of weakness of the pilot study.

Table 4.1: A practical dynamic assessment strategy for school educators

| TIME | CONTENT | OUTCOME |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. 40 MINS | <ul style="list-style-type: none"> • transformational OBE and shift to process-centred education • methods of assessment • what is dynamic assessment • comparison to static • relevance to outcomes, inclusive, holistic education | <ul style="list-style-type: none"> • placing in SA reality • placing in SA context • making meaning • knowledge and understanding of another methodology • paradigm shift |
| 2. 60 MINS | <ul style="list-style-type: none"> • need/relevance for mediational skills - MLE as vehicle • role of mediator • skills of mediator • Feuerstein's mediational criteria | <ul style="list-style-type: none"> • understand need for changing role • able to understand and implement mediational criteria • self-reflection as change agent |
| 3. 40 MINS | <ul style="list-style-type: none"> • overview of Feuerstein's theory of structured cognitive modifiability (SCM) and MLE • relevancy to present situation • intervention, investment • cognitive map – 7 parameters | <ul style="list-style-type: none"> • place strategy in meaningful theoretical base • excite them as to an optimistic alternative • empowerment |
| 4. 60 MINS | <ul style="list-style-type: none"> • Three learning phases: • input • elaboration • output | <ul style="list-style-type: none"> • understand how learners learn • how dysfunctions manifest themselves • strategies to modify cognitive structures • how to mediate this |
| 5. 40 MINS | <ul style="list-style-type: none"> • experiential learning • scenarios for implementation • importance of mastery • importance of habit formation • importance of intrinsic motivation | <ul style="list-style-type: none"> • to put theory into practice • modelling • talking aloud • teach to errors • how to strategise • why it is 'dynamic' |
| 6. ONGOING | <ul style="list-style-type: none"> • monitoring • evaluation • keeping a journal • note victories and frustrations • 'master class' and educator • discussion with colleagues | <ul style="list-style-type: none"> • collection of 'tangible' evidence • staying motivated • sharing experiences • staying focused • goal-directedness |

CHAPTER 5

SUMMARY OF FINDINGS, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

5.1 FINDINGS AND CONCLUSIONS

The information generated from the anonymous questionnaire and the informal, unstructured interview showed that the overwhelming majority of the educators (93-100%) were more learner-centred; more self-reflective in terms of what they were doing and how they were doing it; and showed increased awareness of the effect this had on the learner. The educators had consciously and intentionally tried to use the mediational criteria. They had also demonstrated increased sensitivity and a more positive attitude towards the learner. The educators found the strategy to be practical and implementable.

The responses in the interview corroborated this and were a clear validation of optimistic objectives in cognitive, academic and emotional areas. It was clear that the educators had set optimal, realistic expectations. As such the learners felt more accepted, less anxious and had better relationships with their peers and the educators. It was also clear that the educators were ready to work on the enhancement of every learner's learning potential and the proximal zone of development, rather than merely covering the information required by the curriculum.

The educators had clearly changed their perceptions about the learner's abilities and potential. Thus the educators did value the utility of the information provided by the training for the implementation of the dynamic assessment strategy. It was heartening to note that educators had integrated the knowledge about the utility of the strategy and had modified their instruction. Expectations were seen to play an important part in educators' prescriptive planning for the learner, and seeing the positive change in the learner's performance did help to alter initially low expectations. Thus one of

the roles of dynamic assessment may be to change the pessimistic attitudes of educators. It was further noted in the interviews that learners who perform competently following dynamic assessment, also do better in other learning and social situations.

One of the schools was multi-cultural. The educators within this school remarked that this dynamic assessment strategy was non-discriminatory for minority ethnic groups within the school, for those who were immigrants or those with language differences.

The results clearly showed that more training was needed in the learning phases, with its emphasis on cognitive dysfunction. The fact that only 53% of the participants would like further input or training could be interpreted in two ways: either they feel that they have enough knowledge, or they are frustrated with the process and do not wish to continue. This, however, need not necessarily be the case as 80% were motivated to carry on using the strategy. Perhaps, too, they were not sufficiently invested in life-long learning and in-service training.

5.2 EDUCATIONAL IMPLICATIONS AND RECOMMENDATIONS

The educational implications and recommendations of this research are as follows:

- There is little hope of preparing learners to handle constantly changing content requirements unless they acquire strategies of independent thinking and problem-solving. As these strategies do not appear spontaneously, the centrality of the educator as mediator in the process, is vital. The research has shown that many learners are handicapped by an insufficient amount of MLE. Thus it is incumbent on the educator to make appropriate changes and modifications to his or her teaching process in order to address this problem.

- As dynamic assessment aims to uncover potential, rather than register manifest levels of functioning, the educator must assess the quality of instruction that the learner receives in class, before deciding that the academic difficulties are due to the learner's own problems. The educator, as mediator, should be in a position to know the learner as a unique individual.
- Research in dynamic assessment can help educators understand the process of mediation and the structure of the environment in which this mediation may occur. Mediation-based instruction that includes task-specific and general strategies enhance task performance and transfer performance. But continual monitoring is needed. Thus effective instruction involves continuous dynamic assessment and subsequent modification and instructional strategies that can be mediated to the learner.
- Dynamic assessment can play a role in determining the types of instructional conditions that are most appropriate for each child by varying instructional parameters during the assessment process.
- Dynamic assessment might be used to improve the validity of the referral and assessment procedures used to assign learners to specialised education and also can influence the quality of instruction they receive.
- The results of dynamic assessments provide educators with information about specific tasks and instructional methods that best meet the needs of individual children.
- Because cognition has to do with how learners acquire, store and utilise information, the best way to assess cognitive ability is to assess those thought processes that are involved in arriving at the products of cognition directly. Being process-based and judging the child's responsiveness to instruction, it becomes important for the educator, as dynamic assessor, to

examine how a child learns before educators hope to categorise the learner's ability to learn. Once educators know how a learner learns, they can generate specific, individualised prescriptions which will directly address the learner's needs. Thus dynamic assessment in the class can positively affect the quality of instruction the child receives.

- Other educators focus on the role of dynamic assessment in developing diagnoses and prescriptions for teaching. They wish to use the assessment to specify change in deficient cognitive functions, specific content areas and operations, and non-intellective components (motivation, feelings of competence).
- Dynamic assessment also gives educators valuable information about the learner's responsiveness to opportunities to learn new strategies and concepts, as well as providing appropriate teaching activities for individual children.
- The results of dynamic assessment can also result in a shift in the conceptualisation of the locus of failure, from the learner to the instructional technique. This is especially evident when the learner displays learning potential in the process of dynamic assessment, but is unable to learn in the class context. This is an important first step towards changing the focus of the educational assessment and the delivery system.
- The educator, as dynamic assessor, can identify and mediate effective alternatives in terms of learning styles and strategies. Learners are encouraged to use these tactics and strategies elsewhere, with informed support. The involvement and commitment of the educator is crucial as an ongoing log of successful and unsuccessful attempts to modify styles and strategies needs to be kept. Burden (1992: 106) sees assessment 'as a form of empowerment rather than enslavement': the researcher of this study project applauds this notion and envisages that by using the

proposed strategy, educators will empower both themselves and the learners.

- Another major implication is the early identification of 'at risk' learners and the provision of intervention strategies once the educator knows where the cognitive dysfunction is located.
- One of the main challenges of the dynamic assessment strategy is to be sure that the information derived is worth the investment required to get it and that the information will be used in such a way as to result in educational and other benefits to the learner.

Thus dynamic assessment can assess what the learner has already learned (pre-test performance); how easily or readily the learner learns; how readily newly acquired knowledge and/or skills are transferred following instruction; and whether the learner can generalise a rule and apply it to a new situation. Once educators know this, they can maximise strengths, re-mediate deficiencies and manipulate instruction so that it is most effective for the learner. The implication is that educators will have a better idea of how and what to teach, and can control individual differences in motivation, personality and social competence.

5.3 SHORTCOMINGS OF THE STUDY

The following are some of the evident shortcomings of the study:

- A major shortcoming of the pilot study (Chapter 3) is that it did not include a rigorous 'test-train-retest' format. The educators were not required to provide tangible proof that the learners had made academic gains. Although the educators perceived that this was the case, as was brought out in the interview, this was only corroborated by their subjective comments alluding to the fact that all the learners had made academic

gains in terms of the quality of the work and doing the work without coercion.

- Another major shortcoming was the fact that the input and training periods were too brief (approximately 1 hour 40 minutes). According to the literature, training is a key factor in expanding the practice of dynamic assessment. It is crucial that the educators and researchers develop efficient ways for implementing dynamic assessment in order to facilitate a broader acceptance of this approach. Training is the vital factor in developing such efficient approaches. The researcher was limited by the amount of time allocated to in-service training, which had already been designated at each school.
- Directly as a result of this, the researcher was not able to contextualise the shift to process-centred education in transformational OBE or to demonstrate the vital need for dynamic assessment. The researcher was not able to provide the theory base for the proposed strategy or to give practical experience in working with the cognitive map and with the learning phases. There is always more to learn than can be taught effectively within the time limitations of a finite training programme. This is especially true of dynamic assessment where some educators need to unlearn old concepts and techniques.
- The interactive nature of the assessment means that the educators have to make high-level inferences which are entirely subjective. As the training had not been extensive, this was especially problematic. Most of the educators wanted to change their questionnaires after they had 'fed off' the ideas of their colleagues in the informal interview which followed.
- The researcher believes that the educators were operating from a base of too much freedom, simply because they lacked the knowledge of the theoretical base which would have helped them to be more disciplined and scientifically rigorous in their approach. They had not been trained in the

finer art of being an observer, as opposed to an educator, or as a scientist as opposed to an educator.

- The original sample of 31 educators was too big for the pilot study. In retrospect, more valuable information would have been generated by an individual, structured, open-ended interview schedule with about five 'simpatico' educators.
- Although the anonymous questionnaire elucidated valuable quantitative information, it lacked some very pertinent questions; for example, questions about academic progress, social competence, transferability of newly acquired strategies and information, and the investment needed in order to modify cognitive structures. It would also have been important to ask such questions as: 'Which cognitive functions were most amenable to change?'; 'How much investment or intervention was needed to achieve change?'; 'What is the difference between assisted and unassisted performance?'; 'What other variables are related to the change?'; 'What was the response to the intervention?'
- It appeared that the pilot study lacked some scientific rigour, especially as regards the educators' biographical details, academic qualifications, years of experience and grades taught. It appears that the educators of the lower grades have practised OBE for some time.
- The researcher believes that, on reflection, a shortcoming of the study was that she was so intent to 'hook' the educators, using the criterion of intentionality and reciprocity so intently and enthusiastically, that she did not give sufficient attention to the other two non-negotiable criteria: those of meaning and transcendence.

5.4 RECOMMENDATIONS FOR FURTHER RESEARCH

The following recommendations flow from the preceding research:

- In order to overcome the subjective and inferential components which are integral to the mediational process, it is necessary to develop accurate rating scales and to establish appropriate categories of observation. There is a need to determine inter-rater reliability if the research is to determine whether a MLE has occurred.
- These rating scales could also be used within each section of the three learning phases. This could lead to an accurate checklist of the learner's cognitive functions and dysfunctions. This would further operationalise for the educator exactly which skills are required for each specific section of the phase.
- The reliability of these rating scales and between examiners will need to be addressed by dynamic procedures which rely primarily on non-standardised instruction and examiner judgement. This is a true dilemma of dynamic assessment – how to make it reliable without losing the essential characteristics which make it 'dynamic'. Research will need to pose questions which will adequately reflect the nature of the dynamic assessment process.
- The effectiveness of dynamic procedures should be examined for a variety of subject populations, particularly with those for whom traditional measures are of limited value. The assessment would have to be culture-free and preferably non-verbal.
- Researchers need to look at the extent to which dynamic measures can predict classroom tasks, learning in a classroom environment and learning in response to interventions generated by the assessment. This needs to be done under laboratory conditions.

- Another aspect to investigate is the extent to which the learner transferred newly acquired skills to other activities and to what extent these strategies were spontaneously applied in novel situations.

5.5 CLOSING PERSPECTIVE

Probably the most valuable contribution of dynamic assessment is the meaningful impact it can have on an educator's expectations of a learner's performance and how this optimistic alternative can impact on the learner's life. Dynamic assessment does require an open-mindedness to the possibility of structural cognitive modifiability. It was Theodore Herzl who said, 'If you will it, it is no legend.'

Dynamic assessment describes the nature of the assessment procedure. Not only does it provide answers to why the learner is not achieving, but more importantly, also how he or she can be modified to reach his or her potential. Issues of quality, meaning and process are all closely linked with dynamic assessment.

Lidz (1991: xi) states that dynamic assessment is a 'unique and important addition to the diagnostician's repertory ... When the diagnostic question concerns the responsiveness of the learner to intervention, the repertory of problem-solving processes employed or not employed, and the means by which change is best effected, the procedure of choice is dynamic.' There is, however, an insufficient data base to justify the uncritical use of the techniques and hence they should be used in addition to traditional assessment approaches. Thus it is crucial for educators and the field of dynamic assessment that research programmes be implemented which will demonstrate the efficacy of various dynamic assessment techniques.

It is this researcher's viewpoint that OBE can only be carried out successfully in an environment where the educator as mediator uses the skills and criteria of mediation, together with an understanding of the cognitive processes underlying the learning act, to dynamically assess what the learner needs to

change or modify in order to achieve the stated outcomes. Thus in-service and pre-service training in these skills and strategies should receive urgent and top priority. It is hoped that the strategy proposed herein will be part of the solution to the problem.

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ADDENDUM 1

ANONYMOUS QUESTIONNAIRE

PLEASE READ CAREFULLY AND CIRCLE THE APPROPRIATE RESPONSE.

Thank you so much for your input and participation.

1. Are you able to 'pinpoint' the phase (input-elaboration-output) of the learner's cognitive dysfunction?

| | | |
|-----|----|-----------|
| Yes | No | Uncertain |
|-----|----|-----------|

2. If 'yes', can you 'pinpoint' the specific area in the phase?

| | | |
|-----|----|-----------|
| Yes | No | Uncertain |
|-----|----|-----------|

3. Have you consciously and intentionally tried to use the mediation criteria?

| | |
|-----|----|
| Yes | No |
|-----|----|

4. Has this made a difference to the learner's :

| | | | |
|-------------|-----|----|-----------|
| attitude? | Yes | No | Uncertain |
| effort? | Yes | No | Uncertain |
| motivation? | Yes | No | Uncertain |

5. Have you consciously tried to strive towards a more:

| | | |
|-----------------|-----|----|
| learner centred | Yes | No |
| process-centred | Yes | No |

 approach?

6. Do you demonstrate an increased sensitivity and a more positive attitude towards:

| | | |
|--------------|-----|----|
| the learner? | Yes | No |
| the task? | Yes | No |

7. Are you more aware of (i.e. self-reflection):

| | | |
|--------------------------------------------|-----|----|
| what you are doing? | Yes | No |
| how you are doing it? | Yes | No |
| consequences/implications for the learner? | Yes | No |

8. Do you think that the assessment strategy (application of knowledge of mediational criteria + knowledge of cognitive dysfunction) is

| | | |
|----------------|-----|----|
| practical? | Yes | No |
| implementable? | Yes | No |
| user-friendly? | Yes | No |

9. Are you motivated to carry on using the assessment strategy?

| | | |
|-----|----|-----------|
| Yes | No | Uncertain |
|-----|----|-----------|

10. Would you like further input and/or training in this regard?

| | |
|-----|----|
| Yes | No |
|-----|----|

11. Comments: