

**MEDIATED LEARNING EXPERIENCE**  
**A TEACHER INSERVICE TRAINING PROGRAMME**

*Gillian Helene Berkowitz*

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## ABSTRACT

There is an urgent need to address the educational crisis in South Africa where decades of unequal provision of resources, inferior black teacher training and insufficient mediation have left pupils with inadequate cognitive skills. Educational reform needs to be multi-dimensional and must include innovative teacher training.

Feuerstein's ten principles of mediated learning experience (MLE) were the focus of the teacher in-service training programme which this research aimed to implement and evaluate.

Fourteen Soweto primary school teachers formed the sample population for the study which had a within-subjects design. The pre- and post-intervention measures were MLE ratings of videotaped lessons independently scored by two raters and a questionnaire where participants rated their professional self-perception.

The intervention of twelve weekly sessions, provided theoretical and experiential elaboration of MLE principles. Results analysed on Wilcoxon Sign Rank Tests revealed a significant increase in subjects' use of four MLE principles, a decrease in one non-mediational behaviour and a significant increase in professional self-esteem. There was thus support for the value of MLE training in improving both behavioural and affective dimensions of teaching. Limitations of the study were discussed and suggestions for further research proposed.

## DECLARATION

I hereby declare that this research is my own work. It is being submitted for the degree of Master of Education (Educational Psychology) at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in any other university.

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*Gillian Helene Berkowitz*

**Gillian Helene Berkowitz**

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## **I. INTRODUCTION**

### **1.1 The need for dynamic education in a changing world**

"Democracy is not, for us at least, a set of formal rules of participation, but the lived experience of empowerment for the vast majority. If one takes the view that schools are among our leading political and ideological institutions, it is a contradiction to envision a democratic society when its inheritors, the kids, are forced to live under conditions of unrelieved subordination."

(Aronowitz & Giroux, 1987)

Education worldwide, has been labouring under the yoke of a disabling "classical curriculum" which portrays the learner as an empty vessel waiting to be filled with knowledge by the teacher-expert (H. Carl Haywood, 1990, Belle Wallace, 1991). This classical schooling has, by and large, fulfilled the requirements of the dominant society in reproducing "the important facts" and in maintaining the hegemony of intellectual and class domination. In the South African context particularly, the Bantu Education Acts of the 1950's have been described as perpetuating "inferior and somewhat more vocational education" for the purpose of reproducing a certain kind of labour for the masses (Burman & Reynolds, 1986).

As recently as the mid-1980's American educational policies have been criticized for focusing mainly on the provision of a highly skilled workforce required by the increasingly rapid introduction of new (computer) technologies in the workplace. However, even the "computer age", rather than demanding more sophisticated technical training, should require less task-specific

specialized education. In a rapidly changing world we would better serve our children by focusing on integrated schooling encompassing a "broad conceptually-oriented curriculum where processes of abstraction, the social and historical context of scientific and technological innovation, and preparation in the logical processes underlying all calculation are far more relevant to the changing workplace". (Aronowitz & Giroux, 1987, p.189.)

Many writers (De Bono, 1976; Haywood, 1990; Toffler, 1971; Torrance, 1965) have stressed our need to equip ourselves and our children not with static knowledge, but with dynamic skills and thinking strategies which will help us negotiate and respond to a rapidly changing environment "in which the time required to double the world's fund of knowledge will be down to two years" (Haywood, 1990). The notion of teachers as "transformative intellectuals" or as dynamic mediators of experience within a framework of active learning requires a philosophical shift:

1. From information giving to enhancing educability.
2. From stretching knowledge alone to stretching minds.
3. From present concepts of teacher roles as givers of information to mediators of experience and guiders of students' personal quests for cognitive growth and change.
4. From emphasis on achievement/knowledge criteria to emphasis on educability and lifetime enthusiasm for learning.

5. From the assumption that motivation is up to the students and their parents, to recognition of teachers' roles in motivating cognitive growth.

(H. C. Haywood, 1990)

## 1.2 Mediated Learning Experience

One such approach which emphasizes process rather than content and which embraces affective as well as cognitive components is Mediated Learning Experience. Reuven Feuerstein, Israeli professor of psychology and innovator in the field of cognitive enrichment has gone beyond the Piagetian notion that the child constructs his own intelligence during his interaction with the environment. Feuerstein stresses the vital role of a human mediator (parent, caregiver or teacher) who "enriches the interaction between the child and the environment with ingredients that do not pertain to the immediate situation but belong to a world of meanings and intentions derived from generations of culturally transmitted attitudes, values, goals and means" (Feuerstein, 1980).

Feuerstein claims that the "mediative value of human intervention" has the potential to enhance, sharpen, focus and frame the child's cognitive capabilities in ways which increase his capacity to benefit from direct exposure to stimuli in his world. By selecting, focusing and feeding back experiences, the mediator can intercede between the learning child and the environment in a creative, empowering way.

In this way, parents and teachers in their roles as mediators can positively affect the cognitive structure of the child by engendering appropriate learning sets and habits (Feuerstein, 1981) and by giving the child a sense of time and space through which experiences can be organised (Feuerstein & Rand, 1975).

"Our contention is that mediated learning experience is the foundation upon which cognitive structures are built and that, even as late as adolescence, major and significant cognitive modifications are possible" (Feuerstein, Rand, Hoffman & Miller, 1980).

MLE is not dependent on a specific content or modality of transmission. It is rather an intentional, interactive approach which may use a variety of mediational modalities (e.g. gesture, motor performance, verbal language) across unlimited content areas. It encompasses the four basic assumptions of "Invitational Education" (Paxton, 1990) optimism, respect, trust and intentionality, which contribute to a holistic world view celebrating boundless human potential.

A growing body of research is focusing on Feuerstein's "Instrumental Enrichment" (I.E.) application of mediational principles to teach thinking skills. This (paper and pencil) programme has shown positive educational outcomes in controlled studies involving various groups of learners, including preschool children (Tzuriel & Ernst, 1992), mentally retarded students (Feuerstein, Rand, Hoffman, Hoffman & Miller, 1979), learning disabled adolescents (Beasley, 1984), cultural minority children (Skuy, Gaydon, Hoffenberg & Fridjohn, 1990), deaf children (Katz & Buchholz, 1984) and gifted students (Hickson & Skuy, 1990; Skuy, Mentis, Arnott, Nkwe & Hickson, 1990 a; Skuy, Mentis, Arnott & Nkwe 1990 b; and Waksman, Silverman & Messner, 1982). Areas of improvement have included problem-solving, organisation and planning, systematic approach, motivation and self-esteem. Negative criticism of I.E. has been leveled at its requiring very extensive and specialised teacher training and its lack of continuity with

academic and realworld intellectual tasks. Some teachers have described I.E. materials as too abstract and unfamiliar, too repetitive and poorly presented, and culturally inappropriate (Blagg, 1991).

Relatively few studies (Blagg, 1991; Martin, 1984; Weller & Craft, 1983) have examined the value of a mediational approach to teacher training. Nevertheless, there seems to be a growing support for developing a mediational teaching style which will transcend both content and modality and which will aim to promote independent thinking and cognitive growth (Haywood, 1990). In the restrictive South African educational context, where "to teach children to think" has been "incompatible with the maintenance of the status quo" (Skuy, Mentis, et. al. 1991), there is a pressing need for innovative teaching approaches which will enable and empower the learner and will engender a questioning attitude, an attitude of wanting to know (De Bono, 1976; Williams, 1972). Feuerstein's theory of MLE offers the possibility of one such approach.

### **1.3 Teacher Professional Development**

The foregoing discussion has highlighted one of the considerations which motivated the research project; that is, the potentially valuable effects of a MLE approach on the cognitive development of the child-learner. The project was equally motivated by the beneficial and empowering qualities of teacher professional development (in-service teacher training) which has been shown to have an interactive benefit on teaching and learning by enhancing teacher effectiveness, student achievement, teacher self-esteem and student self-esteem (Rowe & Sykes, 1990; Smylie, 1988).

The benefits of teacher professional development on the quality of educational outcomes is supported by an ever expanding literature attesting to the efficacy of inservice professional development for teachers (Guskey, 1986; Ingvarson, 1987; Joyce & Showers, 1988). There is strong evidence for the effects of teacher behaviour on student achievement (Brophy & Good, 1986; Kash & Borich, 1978). Not only teacher training and professional expertise but also affective factors and professional self-esteem, impact on the overall teacher-learner interaction (Ashton & Webb, 1986; Smylie, 1988). The notion of teacher effectiveness stresses the importance of positive self-esteem as a determinant of good teaching. These opinions coincide with Maslow's notion that the self-actualising person is the most effective teacher. Teachers who feel positive about themselves are likely to create the best learning situations (Gregory, 1989; Maslow, 1968).

While teacher in-service training programmes have been shown to enhance the knowledge and skills of participants (Guskey, 1986; Haywood, Smith, Bransford, Deldos, Towery, Hannel & Hannel, 1982; Martin, 1984), recent research has suggested that professional development may also have a direct and positive effect on teachers' self perception (Rowe & Sykes, 1989; Smylie, 1988).

The foregoing discussion has highlighted the importance of both professional expertise and affective development for good teaching. Thus woven into the fabric of a dynamic and empowering partnership between teacher and learner, are the strands of innovative enabling teaching approaches; the importance of teacher training; the impact of professional development on knowledge, skills and teachers' self-perceptions; and the positive effects of self-actualising teachers on student achievement. A number of writers (Baron and Sternberg,

1987; Bhana, 1987) concur that success in the training of effective teachers requires the combination of knowledge (teachers' familiarity and understanding of topics), skills (specific things that teachers are able to do), and attitudes (philosophies, perspectives and opinions which inform their teaching).

This research project aimed to examine these interacting factors of knowledge, skills and attitudes within an action research paradigm (Colyn & Breen, 1989) enabling the teacher-participants to be integrally involved in the "identification of strategies of planned action which are implemented and then systematically submitted to observation, reflection and change" (Grundy & Kennis, 1984).

The project arose out of a request for teacher in-service training received by the Cognitive Research Programme (Division of Specialised Education, University of the Witwatersrand) from the teachers at the Zithathele Primary School in Soweto. The project fulfils part of the requirement of the M. Ed. (Ed. Psychology) course at the University of the Witwatersrand.

#### 1.4 Definition of terms

##### **Mediated Learning Experience**

MLE is a special kind of interaction, involving a human mediator who interposes himself/herself between the learner and the world of stimuli to promote effective learning by interpreting, guiding and giving meaning to the stimuli. In this kind of interaction, learning is intentional rather than incidental (Feuerstein, 1980).

Feuerstein has identified ten criteria or types of interaction which he believes are fundamental in mediation. These are:

**Intentionality and Reciprocity** - a desire to mediate on the part of the mediator and a reciprocal receptiveness on the part of the learner.

**Mediation of Meaning** - locating the stimulus within a meaningful context.

**Transcendence** - applying/bridging ideas to a broader context.

**Competence** - engendering a positive belief in the self, emphasising strengths.

**Regulation and Control of Behaviour** - promoting awareness of the need for controlled/planned behaviour.

**Sharing Behaviour** - encouraging cooperative learning.

**Individuation** - celebrating individual differences and valuing divergent responses.

**Goal Planning** - helping the learner set achievable goals.

**Challenge and Novelty** - encouraging creativity and risk-taking.

**Self-change** - promoting self-evaluation of individual progress.

In terms of these criteria, a Mediated Learning Experience will require that: the mediator shows a desire to mediate and the ability to set the scene for it (intentionality); that the mediatee is receptive (reciprocity); the mediator provides meaning to the task by showing or stating why the task is being done and the value or significance of the task (meaning); the mediator provides examples of the task's application to new situations and contexts, and extracts a principle or generalisation from the task (transcendence); the mediator encourages the mediatee to cooperate and share with others his/her ideas and problems (sharing). During this interaction, the mediator communicates a feeling of empowerment and competence to the mediatee (competence) and offers him/her unfamiliar and novel activities (challenge and novelty); the mediator communicates a respect for and celebration of that which is different (individuation); the mediator facilitates goal planning and promotes the use of behavioural and thinking strategies, using mistakes and errors as constructive learning experiences (self-regulation and control of behaviour). The feeling of competence combined with the ability to monitor one's behaviour leads to self improvement and an awareness of self change.

The first three MLE criteria are considered necessary and sufficient for a mediational interaction. The remaining seven criteria may function at different times where and when appropriate and serve to balance and reinforce each other. The list of criteria is not finite and the search for other relevant criteria is ongoing.

### **In-service training**

This term is used synonymously with professional development and refers to educational/skills training programmes designed to provide opportunities to expand knowledge and skills within an active working environment.

### **Primary School Teachers**

This refers to teachers of pupils from Grade One/First Grade (approximately 6-7 years of age) till the end of Standard Five/Seventh Grade (13 - 14 years of age). The Primary School Teachers participating in this study comprised fourteen teachers of the Zithathele Primary School in Soweto.

### **Self-Esteem**

This term is used interchangeably with the terms, self-perception and self-concept to describe the feeling (positive or negative) that an individual has towards him/herself. For the purposes of the present project, professional self-esteem/self-perception/self-concept refers more specifically to the (positive or negative) ways in which individuals perceive themselves in relation to their professional (teaching) roles.

## 2. METHOD

### 2.1 Rationale

Cognitive theorists and educators are becoming increasingly aware of the importance of training teachers who will promote in their pupils active thinking, self-motivated learning and creative problem-solving as contrasted with the classical approach where pupils are the passive recipients of their teachers' knowledge. Teachers therefore need to be trained as facilitators and mediators of experience rather than givers of information. This necessitates a paradigm shift not only in our notions of education, but also in our training of teachers. We need to prepare teachers with knowledge, skills and attitudes which will enable them to move away from their traditional role of authoritarian teacher-expert who merely transmit "the facts" to their pupils, towards a new role as authoritative mediator in an interactional process of teacher-learner exploration.

Previous research suggests that Feuerstein's framework of MLE offers a viable methodology for re-training practising teachers in an alternative approach to the traditional teacher-centred "passive curriculum". The whole ethos of the programme is one which encourages the departure from the established "disabling" teaching style and instead embraces a mediational "enabling" teaching style. Part of its appeal is that the MLE principles are overarching concepts which are not restricted to any one curriculum or body of knowledge. Feuerstein's ten principles of MLE are process-oriented concepts which may offer teachers an opportunity to reactivate and transform their teaching in a dynamic and mediational manner.

There is an expanding body of literature (Ashton & Webb, 1986; Brophy & Good, 1986; Gregory, 1989; Joyce & Showers, 1988; Osman, 1992; Rowe & Sykes, 1989; Smylie, 1988) on the strong positive link between teacher professional development and the quality of educational outcomes. These studies support the notion that professional development programmes enhance teacher professional self-esteem and that high self-esteem in teachers, in turn increases teacher effectiveness. The present research investigates the claim within the South African context utilising MLE training as a specific and potentially valuable approach for both professional development (knowledge and skills) and for enhancing teacher self-esteem. The investigation examines inter alia the effects of MLE teacher in-service training on the mediational teaching and professional self-perception of practising teachers.

The aim of the study was therefore to develop a model for the implementation of MLE as part of a teacher inservice training programme, and to test the effectiveness of this model. Specific objectives were:

- a) to devise a MLE in-service teacher training programme,
- b) to implement this programme and
- c) to evaluate whether the programme impacts upon the actual teaching behaviour and self-esteem of participants.

## **2.2 Research Hypotheses**

The research hypotheses focus upon the final objective of the study, namely the evaluation of the impact of the MLE programme on the actual teaching behaviour and professional self-esteem of participants (objective c). This objective encompasses a duality which is addressed by Hypotheses 1 and 2 respectively.

### **Hypothesis 1:**

Significant differences will be observed in the mediational teaching styles of teachers after their participation in the MLE inservice training programme.

Specifically:

#### **Hypothesis 1a:**

There will be an increase in their use of mediational teaching strategies from pre- to post-intervention.

#### **Hypothesis 1b:**

There will be a decrease in their use of non-mediational teaching strategies from pre- to post-intervention.

### **Hypothesis 2:**

There will be an improvement in the professional self-perception of teachers after completing the MLE inservice training programme.

### 2.3 Subjects

The sample comprised fourteen teachers (three male, eleven female) of Zithathele Primary School, Soweto. Subjects were self-selected volunteers who had requested in-service training from the University of the Witwatersrand Cognitive Research Unit. Their professional qualifications were two-year post secondary-school teaching diplomas as required by the South African Department of Education and Training and their teaching experience ranged from 5 to 25 years. Subjects functioned as their own controls.

**Table 2.1. Composition of the sample in terms of Age, Gender, Teaching Experience and Class/Grade Taught**

<b>Sample Size:</b>		14
<b>Age:</b>	Mean	40.21 years
	Standard Deviation	8.97 years
	Range	10 - 54 years
<b>Gender:</b>	Males	3
	Females	11
<b>Teaching Experience:</b>	Mean	13.29 years
	Standard Deviation	7.10 years
	Range	5 - 25 years
<b>Class/Grade Taught:</b>	Grade 1	2
	Grade 2	2
	Standard 1	2
	Standard 2	2
	Standard 3	2
	Standards 4 & 5	4 (subject teaching)

Zithathele Primary School is a Zulu-English medium primary school (first to seventh grade) situated in the impoverished black residential area of Orlando West, Soweto. The school serves the local community who are mainly unskilled and skilled workers of low socio-economic status, and is funded by the government Department of Education and Training. It lacks basic facilities such as electricity, a library and modern teaching equipment, while classrooms are overcrowded with as many as 45 to 50 pupils per teacher.

## 2.4 Measures

Two categories of pre- and post-intervention measures were included in the study.

- i) Ratings of teachers' videotaped lessons.
- ii) Measures of teachers' professional self-perception.

### 2.4.1 Analyses of a systematic rating of videotaped lessons to identify the targeted MLE principles/outcome variables

The measure used to rate and evaluate teachers' videotapes is the MLE Teacher Rating Scale (Cognitive Research Unit, University of the Witwatersrand, 1991) which lists and operationalises the ten categories of mediational teaching described by Feuerstein (1979). The frequency of teacher behaviours was recorded for each of the Mediational and Non-mediational criteria by two raters. (The scale is reproduced in Appendix I).

## **Raters:**

In order to assist with objectivity and reliability during the scoring procedures, two graduate students, familiar with MLE principles, independently viewed and rated each of sixteen (8 pre-intervention and 8 post-intervention) videotaped teaching sessions of 20 minutes duration. Ratings were carried out "blind" in that the raters did not know which sessions were part of the pre-intervention condition and which were part of the post-intervention condition. To achieve this objectivity, a random order of presentation of pre- and post-intervention videotapes was adopted.

Inter-rater correlations were assessed using the Spearman Rank Order Correlation Coefficient.

To facilitate rating, each category of MLE includes specific behavioural indicators which can be observed and recorded. (Refer to Appendix I).

Each teacher was videotaped both pre- and post-intervention while conducting a twenty minute lesson of his/her choice, according to his/her normal teaching programme. In this manner, it was hoped to assess a "typical" lesson being given to the teacher's regular class of students during normal teaching hours. Owing to time constraints it was not possible for every teacher to be videotaped at precisely the same time of day and this variable was therefore not controlled, presenting a possible methodological limitation. Teachers were videotaped early- mid- or late-morning according to their normal daily schedule. Each individual teacher was therefore videotaped at the same time of day for both pre- and post-test conditions.

For each 20 minute teaching videotape it was possible to observe and record the frequency with which subjects utilised both mediational and non-mediational behaviour in their interaction with pupils. To this purpose, each teacher "turn" (communicative interchange) was rated according to whether it communicated a mediational or non-mediational teaching style and categorised according to the specific principle being mediated as follows:

- a) **Mediational teaching** occurs when a teacher uses any of the ten MLE principles: intentionality and reciprocity, meaning, transcendence, competence, regulation and control of behaviour, sharing behaviour, individuation, goal planning, challenge and novelty, and self-change.
- b) **Non-mediational teaching** (Miller, 1991) occurs when a teacher uses strategies counterproductive or antagonistic to MLE in that they reinforce passive teacher-centred learning, rote learning, and focus on the end product (only one correct answer) rather than process of problem-solving.

For the purposes of this study, five categories of non-mediational teaching were used, based on those described in a recent study by Miller (1991).

- \* Teacher requests actions (gives instructions without explanation).
- \* Teacher elaborates content (imparts facts without checking pupils' level of understanding).
- \* Repeat after me (rote learning).

\* Yes/No questions.

\* Content questions (pupils merely repeat the facts taught).

#### **2.4.2 The Teacher Professional Self-Perception Questionnaire**

Teachers' professional self-perception was measured by means of a semantic differential questionnaire comprising 34 seven-point evaluative scales (see Appendix II). This instrument, cited in a study by Rowe and Sykes (1989) was adapted by these writers from the Professional Self-Perception Questionnaire developed by Elsworth and Coulter (1977). It was designed to measure the effects of teacher education programmes on selected dimensions of self-perception in trainee teachers. Teachers are required to record their self-evaluations by ticking one of seven positions between each of two extreme statements listed in the table (e.g. rigid, flexible). In accordance with the method used by Rowe and Sykes (1989) subjects were asked to provide two ratings for each scale, namely:

- a. a self-rating in terms of "myself as a teacher"
- b. an ideal-rating in terms of "the teacher I would like to be".

The results reported in this study concern only subjects' ratings of "myself as a teacher". The reason for teachers being asked to make two ratings, was to provide a reference scale (the ideal concept) according to which the underlying self-concept would be evaluated. It was believed that if the underlying self-concept had been presented alone, ratings would be inflated owing to the effect of social desirability. With the inclusion of the two scales, some differentiation between the ideal and the underlying self-concept was expected to yield a more credible impression.

## 2.5 Procedure

The fourteen teachers were all pre-tested a week prior to the commencement of the MLE training programme. Pre-test measures were their videotaped lessons and the Teacher Professional Self-Concept Questionnaire.

The experimental programme undertaken for this study was specially devised by the writer and took place weekly over a three month period, allowing twelve meetings of 120 minutes each. The programme comprised three phases: an introductory phase (one session); a working phase (ten sessions) and an evaluation phase (one session).

All pre-intervention measures were completed a week before the commencement of the programme. Post-intervention measures were completed two weeks after the programme had ended.

Data analyses were carried out on all fourteen self-perception questionnaires but video analyses could be carried out on only eight of the fourteen videotapes, as these had been recorded in English. The remaining six teachers had conducted their lessons in the medium of Zulu and although these videotapes will provide fruitful data for a future study, it was beyond the scope of the current research to combine English and Zulu analyses.

**a) Introductory Phase**

**Session One** comprised an introductory session which allowed subjects to participate in and experience an holistic exposition of Mediated Learning Experience and to contrast this approach with a more conventional "teacher-centred" approach (videotape available from the Department of Specialised Education). This was achieved via modeling and role play as illustrated by the following transcription of the introductory session (phase one).

The writer modeled the role of teacher who taught the same lesson using two different methodologies. The subjects were encouraged to assume the roles of pupils who would thus be exposed to the same content but taught via two contrasting approaches:

i) non-mediational

ii) mediational.

i) **Traditional lesson - pupils are passive recipients of information**

**Objective:** Pupils will learn about NOUNS and VERBS.

**Teacher:** "Today we are going to learn all about NOUNS and VERBS.

Repeat after me: A NOUN is the name of a person, place or thing".

**Pupils:** "A NOUN is the name of a person, place or thing".  
(Repeated a few times).

**Teacher:** "Can anyone give us examples of nouns?"

**Pupils:** (Volunteer some examples).

**Teacher:** "A VERB is a doing word, an action word".

**Pupils:** "A VERB is a doing word, an action word".  
(Repeated a few times).

**Teacher:** "Can anyone give us examples of verbs?"

**Pupils:** (Volunteer some examples).

**Teacher:** "Look at the sentences on the chalkboard. Which is the NOUN in the first sentence? Which is the VERB?" (This procedure is repeated for all the sentences).

Pupils are allowed to approach the chalkboard and indicate their answers. The teacher responds affirmatively or negatively, depending upon whether the answers are right or wrong.

**Teacher:** "Here are some worksheets. I want you to underline all the NOUNS in red and all the VERBS in blue."

**ii) MLE approach - teacher and students interact with active involvement of students**

**Objective:** Pupils will learn about nouns and verbs. Teacher will mediate the concepts utilising the ten principles of MLE.

### **INTENTIONALITY and RECIPROCITY:**

**Teacher:** "Today I have brought a special parcel for all of you. Who would like to open it?" The pupils open the parcel and discover a book inside. Discussion is encouraged.

### **MEANING:**

**Teacher:** "This book is full of words which tell us a story. Today we are going to learn how to use words for different purposes. What purposes can you think of?" Pupils brainstorm their ideas which the teacher acknowledges:  
"Good, we can use them to send messages, make up stories, songs, poems,

recipes and so on. Now let's find out how different words perform different functions. Look around the room. Let's each have a turn to NAME things we can see, touch and hear. All these things are called NOUNS/names. You can write your NOUN on the board."

"Now, let's all do something with our bodies and discuss what we are doing (e.g. smiling, clapping, etc.) These DOING words are called VERBS. You can write your VERB on the board."

### **TRANSCENDENCE:**

"Now that you know what NOUNS and VERBS are, let's have fun and practise using them in some games." Pupils are assigned small groups which take turns to play word-games devised by the mediator (Lucky Dip Mime Game, Noun and Verb Paper Chains, Hands and Feet Doing Words, Noun and Verb Cinquain Poems).

### **COMPETENCE:**

While pupils are learning by playing, the mediation of competence is achieved via verbal feedback (praise), non-verbal (smiling, gaze) and via the successful participation in the learning-games.

### **REGULATION AND CONTROL OF BEHAVIOUR:**

Pupils are advised to "think before they ink" and are given strategies whereby they can check their answers (e.g. To check whether a word is a NOUN place the before the word).

### **SHARING:**

Pupils have been assigned to small groups and been given games which are interactional and require them to share ideas.

### **INDIVIDUATION**

The nature of the games is such that the unique and creative contribution of each group member contributes to the success of the activity.

### **GOAL PLANNING:**

There is a definite goal built into each activity. e.g. creating a poem, decorating the classroom with word-chains. The overall goal of using language creatively is achieved.

### **NOVELTY AND CHALLENGE:**

The pupils are learning new language skills. The activities provide novel, challenging and motivating ways of learning.

### **SELF-CHANGE:**

At the beginning of the lesson, pupils are not aware of the different functions of words and are unable to use words in many different ways. They have now mastered the concepts of NOUNS and VERBS and have practised using them in challenging ways.

Finally, a brainstorm approach is used to encourage teacher-participants to generate ideas and to evaluate the contrasting approaches. The comparison embraces the following ideas:

**Traditional Lesson**

Passive listening

Teacher dominates

Content based - teaches what to think

Requires rote recall of facts and passive conformity

Piecemeal learning.

Learners are disempowered.

Without the power of action.

**MLE Lesson**

Active Involvement

Teacher-Pupil interaction

Skills based - teaches how to think

Requires using information creatively

Integrated learning.

Learners are empowered.

This classroom has the power of action.

**b) Working Phase**

Sessions Two through Eleven comprised the ten teacher inservice training sessions each of which focused on one of the ten targeted principles of Feuerstein's MLE approach. Each session was structured as follows:

- Review of the previous session including a discussion about the implementation of the mediational principle which teachers had attempted during the intervening week.
  
- Experiential demonstration by the facilitator with participation by teachers highlighting the particular MLE principle targeted for the session (for a detailed description of each session refer to Appendix III and videotapes).
  
- Theoretical input from MLE Working Manual (Skuy, Mentis, et. al. 1991.) This focused on:

Definition of the MLE principle targeted for the session.

Elaboration and discussion.

Applications of the principle to different contexts (home, classroom, community).

Completion of questions on work pages (active participation and self-evaluation by teachers).

Discussion and sharing of participants' ideas about ways of implementing MLE principles in their teaching during the coming week.

**c) Evaluation Phase**

Session Twelve comprised an evaluation session which included the participants' critical viewing of their own teaching videotapes, as well as informal oral and written evaluations of the programme.

**2.6 Design**

The study involved a repeated measures or within-subjects design. The independent variable was the MLE teacher training intervention and the dependent variables were:

- 1) The frequency and types of mediational principles implemented by subjects pre- and post-intervention;
- 2) The frequency and types of non-mediational principles implemented by subjects pre- and post-intervention;
- 3) Teacher professional self-concept ratings pre- and post-intervention.

The study attempts to examine the relationships between the independent and dependent variables in order to determine whether the results support or negate the research hypotheses.

Due to both the small sample size and the nature of the data, non parametric statistical measures were used to analyse the results. These took the form of Spearman Rank Order Correlation Coefficients to assess inter-rater reliability, the Wilcoxon Test for comparisons between pre- and post-intervention measures of the mediational and non-mediational behaviour and of professional self-concept. Column charts were used to provide a graphic illustration of pre- and post-intervention measures for each individual teacher.

### 3. RESULTS

The results are presented in three sections. In the first section (3.1) the consistency in the ratings of the two raters is discussed and a decision is made as to which mediational criteria are retained for further analysis.

In the second section (3.2) Hypotheses 1a. and 1b. of the study are addressed (sections 3.2.1 and 3.2.2 respectively).

Section 3.3 consists of two parts. In the first part (3.3.1) pre- and post-intervention teacher self-concept ratings across all subjects are compared for significance, thus addressing Hypothesis 2.

For a more in-depth understanding of the data, a second part (3.3.2) is included in the results. The Spearman Rank Correlation Coefficient is used to examine the interrelationships among pre-intervention measures, among post-intervention measures, and between each specific criterion on its pre- and post-rating. Examination of these correlations would provide an indication of whether teachers used mediational strategies consistently in the pre- and post-intervention situations considered separately, and whether post-intervention strategies could be predicted from pre-intervention strategies (i.e. whether the pre-intervention relative rank orders remained similar on post-test).

#### 3.1 Inter-rater consistency

In order to ascertain whether the ratings of the raters co-varied, the Spearman Rank Order Correlation Coefficient was computed for the two raters for the pre- and post-intervention conditions for both mediational and non-mediational teaching criteria. According to the critical values of the Spearman Rank Order Correlation Coefficient with 8 subjects, (0.74 and 0.64 at the 0.05 and 0.1 levels of significance respectively) agreement between raters occurred in 68% and 77% of ratings respectively. The 0.05 level was adopted, but because the small sample size required such a large mean difference for significance, it was also decided to retain the 0.1 level as this enabled the core mediational criterion of

Meaning to be included. Results should therefore be interpreted with caution at the lower levels of significance and may be regarded as indicating trends in the data. Inter-rater correlations for mediational criteria are presented in Table 3.1.

**Table 3.1 Correlations between the scores of the two raters - pre-intervention and post-intervention for mediational behaviour**

<u>Mediational Criteria</u>	<u>Pre-intervention</u>	<u>Post-intervention</u>
1. Intentionality & Reciprocity	0,90 **	0,90 **
2. Meaning	0,82 **	0,71 *
3. Transcendence	0,49	0,78 **
4. Competence	0,93 **	0,95 **
5. Self Regulation & Control of Behaviour	0,82 **	0,87 **
6. Sharing behaviour	0,33	0,27
7. Individuation	none	0,26
8. Goal Planning	none	none
9. Challenge	0,38	0,57
10. Self Change	none	none

\* =  $p < 0.1$     \*\* =  $p < 0.05$

On two of the mediational principles (Number 8: Goal Planning and Number 10: Self Change), both raters recorded zero occurrences on both pre- and post-intervention conditions. They concurred therefore, that subjects failed to use these mediational strategies on either the pre- or post-intervention ratings. These ratings were thus regarded as correlated. On a third mediational principle (Number 7: Individuation) both raters recorded zero occurrences on the pre-intervention condition, but did not concur on the post-intervention condition. On mediational principles Number 6 (Sharing Behaviour) and Number 9 (Challenge) no significant agreement was reached.

Inter-rater correlations for the non-mediational criteria are presented in Table 3.2.

**Table 3.2 Correlations between the scores of the two raters - pre-intervention and post-intervention for non-mediational behaviour.**

<u>Non-mediational criteria</u>	<u>Pre-intervention</u>	<u>Post-intervention</u>
1. Request Action	0,70 *	0,90 **
2. Elaborate Content	0,69 *	0,84 **
3. Repeat after me	0,90 **	0,59
4. Yes/No Questions	0,87 **	0,96 **
5. Content Questions	0,85 **	0,83 **

\* =  $p < 0.1$  \*\* =  $p < 0.05$

On four of the non-mediational principles (Number 1: Request Action; Number 2: Elaborate Content; Number 4: Yes/No Questions and Number 5: Content Questions) raters reached significant consensus on pre- and post-intervention measures. On principle Number 3 (Repeat after Me), consensus was reached on the pre- but not the post-intervention ratings. (Close inspection of the data revealed a possible explanation for the discrepancy: When Rater 1 recorded a sequence of "repeat after me" statements as one single occurrence, Rater 2 would often regard each repetition as a separate entity resulting in raised scores on this measure.) Despite low post-intervention consensus, both raters recorded a significant ( $p < 0.025$ ) reduction in teachers' use of rote repetition: "Repeat after me" from the pre- to the post conditions.

As the study focuses on change between pre- and post-intervention conditions, it was necessary to consider only those mediational principles on which there was significant inter-rater reliability on both pre- and post-intervention ratings. It should be noted, however, that observed changes in teachers' use of mediational strategies from pre- to post-intervention conditions, always showed a trend in the desired direction, even when inter-rater correlation was too low for inclusion.

In view both of this stringent criterion and of the small sample size, which demands a high correlation for significance, a  $p < 0.1$  level of significance has been adopted as the criterion level for inclusion of strategies. Thus the principles retained for further analyses are:

### Mediational Principles:

Number 1 - Intentionality and Reciprocity

Number 2 - Meaning

Number 4 - Competence

Number 5 - Self Regulation & Control of Behaviour

### Non-mediational Principles:

Number 1 - Request Action

Number 2 - Elaborate Content

Number 4 - Yes/No Questions

Number 5 - Content Questions

## **3.2 Changes in Mediational and Non-mediational Teaching strategies.**

This section is divided into two parts. In the first part (3.2.1) changes in the mediational teaching strategies are analysed while in the second part (3.2.2) changes in the non-mediational teaching strategies are analysed. Significant results are presented in Table 3.3.

**Table 3.3 Summary of significant pre-post intervention test score differences as analysed by the Wilcoxon Sign Rank Test**

<u>Mediational Strategy</u>	<u>Rater 1</u>			<u>Rater 2</u>		
	<u>n</u>	<u>W</u>	<u>p</u>	<u>n</u>	<u>W</u>	<u>p</u>
1. Intentionality & Reciprocity	7	0	0.01	8	3.5	0.05
2. Meaning	8	1	0.01	8	1.5	0.01
4. Competence	8	0	0.01	8	0	0.01
5. Self Regulation & Control of Behaviour	7	3	NS	8	3	0.05

Non-mediational Strategy	Rater 1			Rater 2		
	n	W	p	n	W	p
1. Request Action	8	2.5	0.05	8	3.5	0.05
2. Elaborates Content	8	11	NS	7	7	NS
4. Yes/No Questions	6	5	NS	5	5	NS
5. Content Questions	7	11	NS	8	13	NS

n = sample size      W = Wilcoxon sign rank score  
p = probability levels      NS = not significant

Note: Sample size (n) differs according to the number of ties.

### 3.2.1 Mediational Teaching Strategies

Raters 1 and 2 agreed that changes from pre- to post-intervention are significant in the case of mediational strategies Number 1 (Intentionality & Reciprocity), Number 2 (Meaning) and Number 4 (Competence). Rater 2 (but not Rater 1) found significant changes from pre- to post-intervention for Strategy Number 5 (Self Regulation & Control of Behaviour). There is therefore some support for the hypothesis that mediational behaviours increase after the MLE teacher training programme. Specifically, teachers demonstrated a significant increase in the desired direction in their use of four of the targeted MLE criteria, namely two of the core criteria (Intentionality & Reciprocity; Meaning) and two complementary criteria (Competence; Self Regulation & Control of Behaviour). Of the remaining six MLE criteria, raters recorded no occurrence either pre- or post-intervention in two cases (Goal Planning; Self Change). Both raters did observe positive trends in the desired direction for the remaining four criteria (Transcendence; Sharing Behaviour; Individuation and Challenge) however the lack of sufficiently high inter-rater correlation precluded further analysis.

### **3.2.2 Non-mediational Teaching Strategies**

On only one of the non-mediational strategies did raters agree on a significant decrease in non-mediational occurrences. There is therefore support only in one instance for the contention that non-mediational behaviours decrease after the MLE teacher training programme. (Both raters recorded a significant decrease in the non-mediational teaching strategy "Repeat after me" from pre- to post-intervention conditions, however their post-test ratings did not satisfy correlation criteria therefore this can merely be noted as a positive trend in the data).

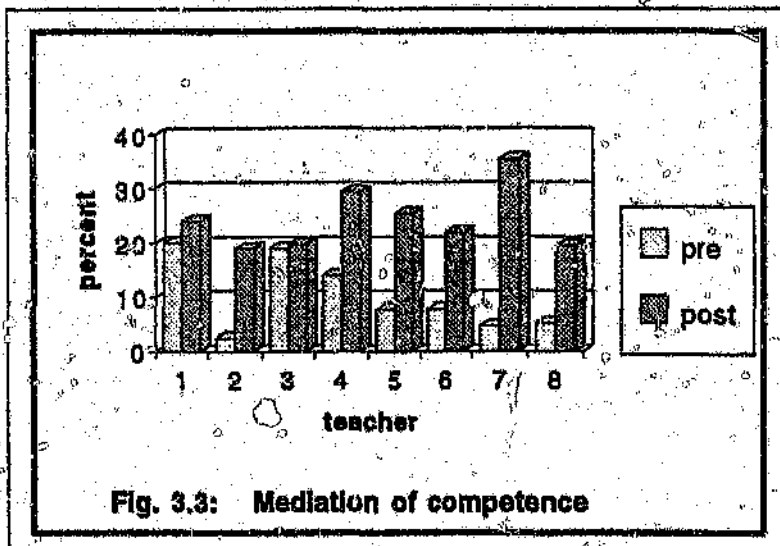
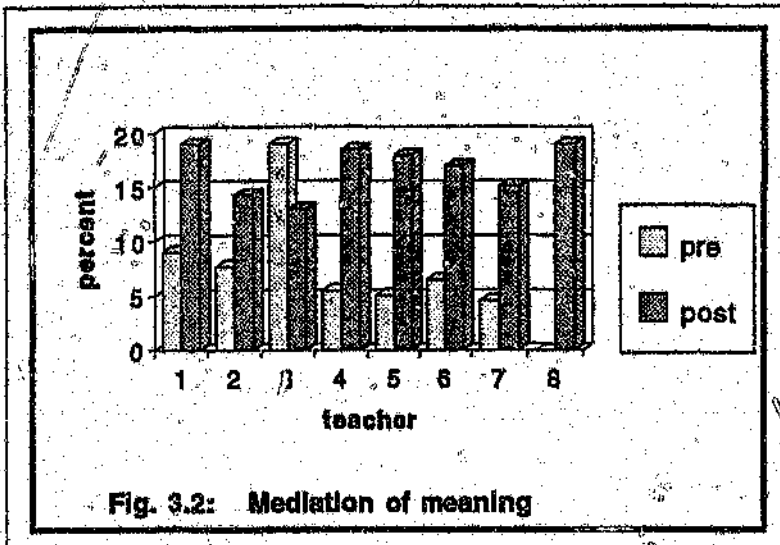
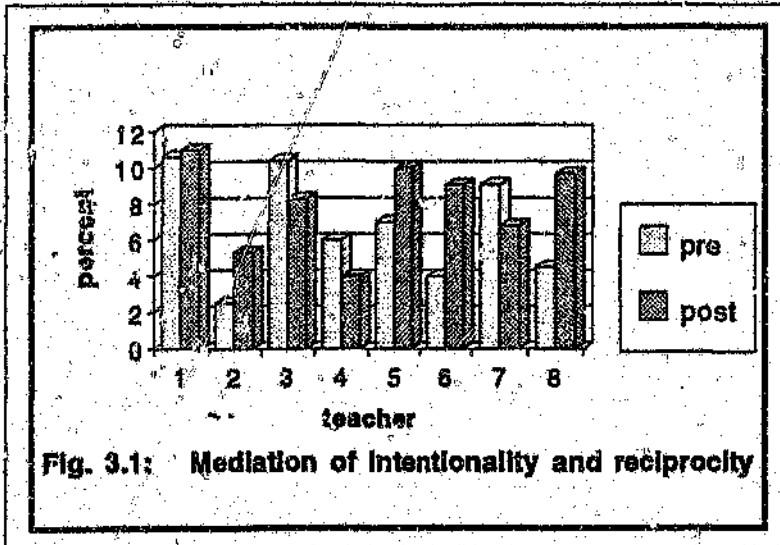
### **3.2.3 Detailed Investigation of Pre- and Post-mediation scores**

As difference scores considered by the Wilcoxon Test give no indication of the original magnitude of the pre- and post-intervention test scores, but merely their difference, it was decided to depict graphically the pre- and post-intervention scores for each strategy considered. Using this approach, differentiation between low change scores could be made owing to high original scores where there was little room for improvement versus where there was room for improvement and little change actually occurred.

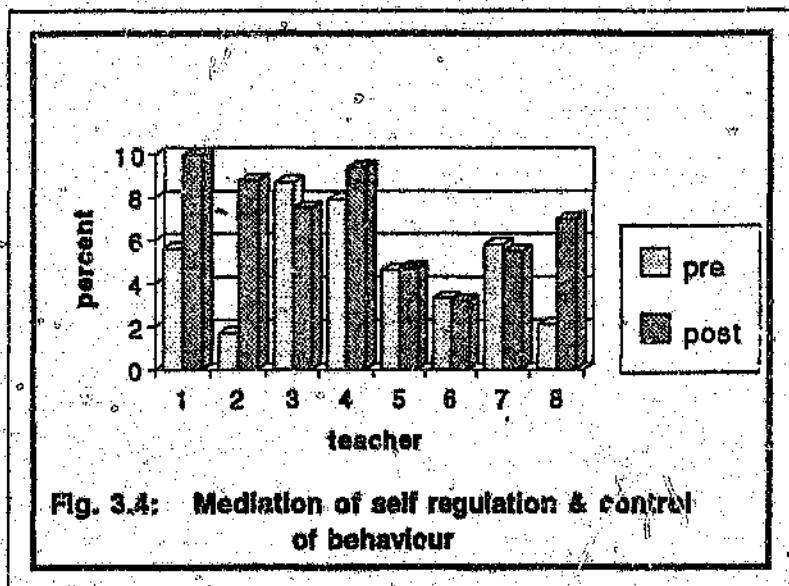
The regression to the mean effect whereby very low scores on pre-test increase substantially by chance to average scores on post-test, is rendered minimal by the non-parametric approach adopted. This effect on the data is thus not further considered.

Where both raters recorded consistent changes, mean percentage ratings were considered for graphic representation.

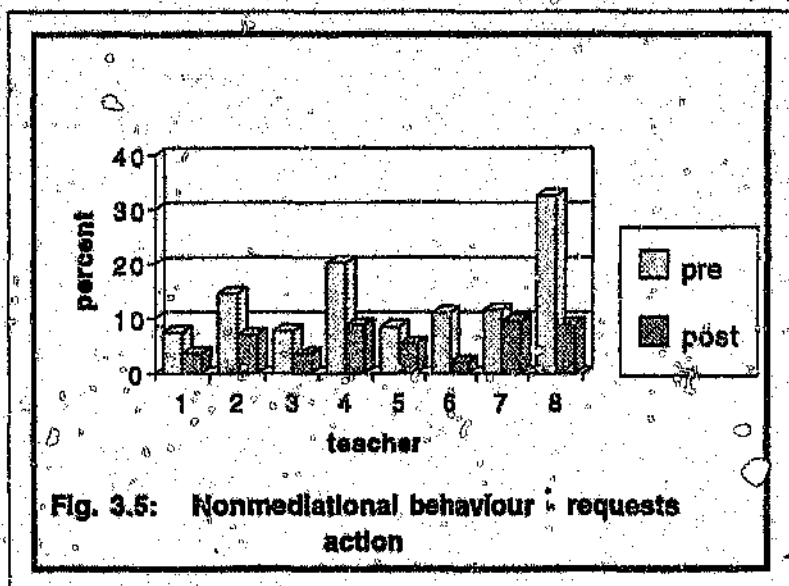
PERCENTAGES OF MEDIATIONAL BEHAVIOURS PRE AND POST INTERVENTION



MEDIATIONAL BEHAVIOUR



NONMEDIATIONAL BEHAVIOUR



As indicated by the preceding graphs, positive changes in the desired directions were observed for the majority of subjects and criteria namely:

Mediation of **Intentionality & Reciprocity** increased for five subjects and decreased for three subjects.

Mediation of **Meaning** increased for seven subjects and decreased for one subject.

Mediation of **Competence** increased for all eight subjects.

Mediation of **Self regulation & control of behaviour** increased for five subjects, decreased for two subjects and remained the same for one subject.

On the non-mediational criterion **Requests Action**, positive results occurred in the case of all eight subjects (indicating a decrease in their use of this behaviour).

Table 3.4 presents an overall summary of pre- post-intervention changes in the desired direction for all correlated criteria including teacher professional self-esteem, which is discussed in the following section.

**Table 3.4 Summary of changes in the desired direction for each teacher and each measure.**

	<u>Teacher Intent.</u>	<u>Meaning</u>	<u>Compet.</u>	<u>Self Reg.</u>	<u>Request</u>	<u>Self</u>	<u>(/6)</u>
	<u>&amp; Rec.</u>			<u>&amp; Control</u>	<u>Action</u>	<u>Esteem</u>	
1	+	+	+	+	+	+	6
2	+	+	+	+	+	+	6
3	-	-	+	-	+	-	2
4	-	+	+	+	+	+	5
5	+	+	+	+	+	+	6
6	+	+	+	+	+	+	5
7	-	+	+	-	+	+	4
8	+	+	+	+	+	+	6
	0.625	0.875	1.000	0.625	1.000	0.875	

The behaviours and self-esteem of seven of the eight subjects changed in the desired direction with four of the teachers changing favourably on all dimensions. Furthermore, for all criteria at least 5 out of 8 (62.5%) and more frequently 7 and 8 out of 8 teachers (87.5 < 100%) changed in a positive direction. This provides strong support for Hypothesis 1. According to the Binomial Test this result is significant ( $p < 0.05$ ).

### **3.3 Changes in pre- and post-intervention teacher professional self-concept.**

As explained, this section is presented in two parts.

In this section the pre- and post-intervention teacher professional self-concept scores for the total sample of fourteen teachers are compared using the Wilcoxon Test. Once again, the changes in pre- post-intervention scores are significant and occur in the desired positive direction indicating increased self-concept ( $T=1$ ,  $n=14$ ,  $p < 0.005$ ). The mean changed score equals 42.21 while the standard deviation is 28.99. (The data is non-symmetrical as revealed by the large standard deviation. For this reason the Wilcoxon was used in preference to the T Test). The data reveal significant overall improvements in teacher professional self-esteem providing strong support for Hypothesis 2. The pre- and post-intervention scores are presented graphically in figure 3.6.

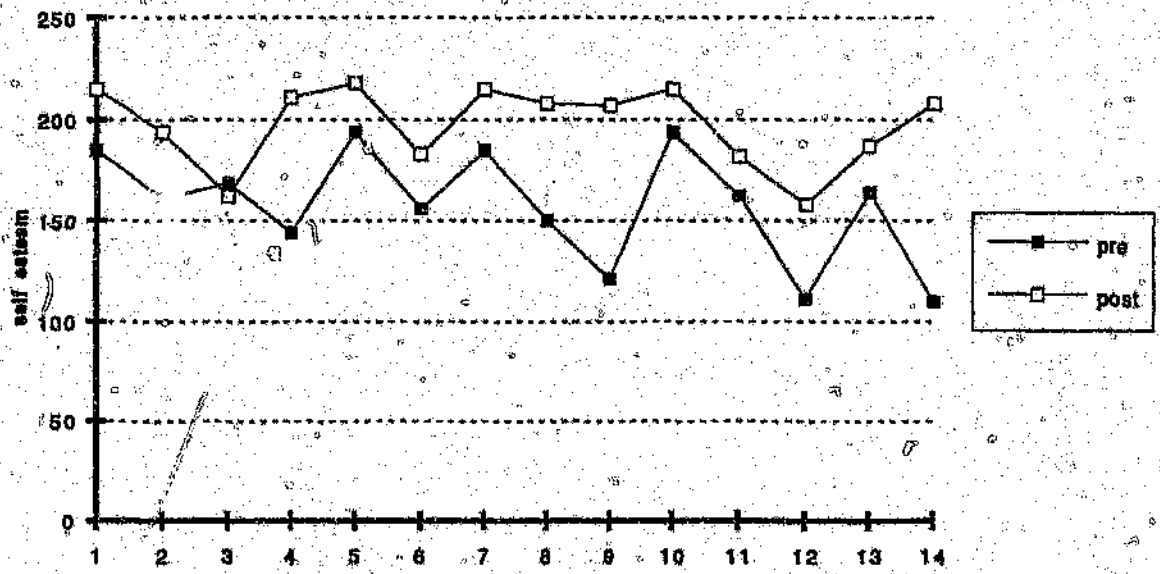


Fig. 3.6: Professional self esteem ratings - pre and post intervention (total group)

T

In this section the selected pre- and post-intervention scores on both teacher self-perception and on mediational behaviour are correlated using the Spearman Rank Order Correlation Coefficients to examine the possibility of interrelationships among the measures.

Each set of correlations consists of measures on which consensus existed between the two raters. As such, Transcendence (Mediational Principle No. 3) was included among the post-intervention measures, while Repeat after Me (Non-mediational strategy No. 3) was included among the pre-intervention measures.

**Table 3.5 Summary of significant Spearman Rank Order Correlation Coefficients between pre-intervention measures**

	I & R	Mean.	Compet.	Self R.	Req A.	Rep.	Self Est.
I & R	1.00						
Mean.	-	1.00					
Compet.	-	-	1.00				
Self R.	0.74*	-	-	1.00			
Req Ac.	-	-	-	-	1.00		
Repeat.	0.76*	-	-	0.91**	-	1.00	
Self E.	-	0.81*	-	-	-	-	1.00

\* 0.05

\*\* 0.01

The only significant correlations among pre-intervention measures are those between Intentionality & Reciprocity and Self Regulation and Control of Behaviour (Spearman = 0.74  $p < 0.05$ ); between Intentionality & Reciprocity and Repeat after Me (Spearman = -0.76  $p < 0.05$ ); between Self Esteem and Meaning (Spearman = 0.81  $p < 0.05$ ) and between Repeat after Me and Self Regulation and Control of Behaviour (Spearman = -0.91  $p < 0.01$ ). The correlation between Intentionality and Reciprocity and Repeat after Me approaches significance ( $p < 0.06$ ).

On post-intervention measures, the only significant correlation obtained was between Self Esteem and Self Regulation and Control of Behaviour (Spearman  $\rho = 0.71$   $p < 0.05$ ).

No measures were significantly correlated on pre-post intervention. In general, therefore, the pre-intervention, post-intervention, and pre-post intervention correlations are not significant. It should be remembered that 5% of all correlations are expected to be significant by chance. The few significant correlations may thus be spurious. These data indicate that teachers are not using strategies consistently either on pre- or on post-intervention. The observed changes are inconsistent across subjects and measures making it difficult to predict post-intervention outcome from pre-intervention performances. Some teachers are changing more than others. (i.e. They are changing their rank orders.)

## 4. DISCUSSION

### 4.1 Interpretation of results

The interpretation of findings is presented according to the research hypotheses:

**Hypothesis 1:** Significant differences will be observed in the mediational teaching styles of teachers after their participation in the MLE inservice training programme.

**Hypothesis 1a:** There will be an increase in their use of mediational teaching strategies from pre- to post-intervention.

The results of the Wilcoxon Test indicate that significant changes in the desired direction (increased occurrence of mediational teaching) occurred for four of the ten designated MLE principles/criteria namely:

Number 1 Intentionality and Reciprocity	} core criteria
Number 2 Meaning	
Number 4 Competence	} complementary criteria
Number 5 Self Regulation & Control of Behaviour	

The above findings are thus validatory of Hypothesis 1a indicating a significant increase in subjects' use of mediational teaching strategies from pre- to post-intervention for two of the three core MLE criteria (Intentionality & Reciprocity, Meaning) and for two complementary MLE criteria (Competence, Self Regulation & Control of Behaviour).

With regard to the remaining six MLE principles, raters concurred that no occurrences of Number 8 (Goal Planning) and Number 10 (Self Change) were observed either pre- or post-intervention. Although low inter-rater correlation precluded further analysis for the MLE principles of Transcendence, Sharing Behaviour, Individuation and Challenge both raters independently recorded trends in the desired direction (i.e. increased use of these strategies from pre- to post-intervention).

These outcome results thus provide overall validity data for Hypothesis 1a and lend support to the research aim of implementing MLE as an effective teacher inservice training programme. The differential improvement of some mediational strategies over others warrants further discussion.

A possible explanation for the significant improvement noted in certain mediational strategies and not in others, may lie in their familiarity to participants and the clarity and ease with which these concepts can be understood and put into practice. Thus new concepts which were nevertheless familiar and clearly understood by subjects, may have been more accessible to change than less familiar and more abstract concepts. Following this reasoning, more familiar MLE concepts would include:

**Intentionality & Reciprocity** - operationalised quite explicitly (refer to Appendix D) in terms which are already familiar to teachers: "Teacher comes prepared for the lesson and creates a sense of anticipation by changing classroom atmosphere", "Teacher is willing to re-explain when work is not understood".

**Meaning** - also operationalised in a clear and readily accessible manner: "The teacher explains the importance or value of a subject", "The teacher gives positive or negative feedback in explanation to a student's response".

Less familiar MLE concepts would therefore include:

**Transcendence** - "The teacher explains a concept or principle beyond the scope of the present subject matter", "The teacher explains how the underlying process in solving a problem can be applied to another situation".

This MLE concept may appear more abstract and less specific than the previous two and may therefore have been harder for the teachers to put into practice. In addition, the training and experience of teachers in the sample (indeed of the majority of practising teachers) have promoted the ethos of compartmentalised subject teaching as opposed to integrative teaching. Decades of compartmentalised thinking and teaching cannot be changed over a period of twelve weeks. Another difficulty with transcendence or "bridging" is clearly

expressed by Blagg (1991, p.103) who writes, "Many teachers were able to bridge to their own subject areas but had insufficient knowledge of other subject disciplines to help pupils make cross-curricular links".

Certain MLE principles may require longer training and practise in order to be successfully mastered. During the present research each of the ten MLE principles received equal prominence. Thus while certain concepts appear to have been successfully understood and applied, other more complex concepts may demand additional time and practice. These might include the MLE principles of **Goal Planning** and **Self-change** which teachers were unable to apply in either their pre- or post-intervention teaching sessions. It may well be that our traditional, authoritarian teacher-centred classrooms foster loci of control and evaluation which are external to the pupil, making the mediation of self-planning and evaluation relatively more difficult.

**Hypothesis 1b:** There will be a decrease in subjects' use of non-mediational teaching strategies from pre- to post-intervention.

In the case of the non-mediational strategies, inter-rater consensus revealed changes in the desired direction for only one of the designated strategies i.e. a significant decrease in subjects' use of non-mediational strategy Number 1 - **Requests Action**. Thus, Hypothesis 1b was only partially supported by the research data. A possible explanation for this result is that while the MLE teacher training programme focused explicitly upon the acquisition and use of the ten (positive) MLE principles, it was also proposed that certain (negative) non-mediational teaching strategies would be reduced in frequency. These non-mediational strategies were, however, never explicitly targeted during the teacher training sessions and were therefore only affected in an indirect incidental manner. This observation adds credence to the power of specific, focused mediation over incidental learning. "Whereas direct stimuli impact ... in a haphazard random fashion, mediated stimuli cannot escape ... attention and recognition." (Blagg, 1991, p.18).

In summary, statistical analyses of the data and overall trends support Hypothesis 1a suggesting that for certain mediational strategies, subjects did indeed demonstrate significant increases in the use of these principles in their regular classroom teaching practice. As participants were not exposed to any input other

than the MLE inservice training during this time period, changes in their teaching behaviour can tentatively be ascribed to this intervention. These data uphold the value of MLE teacher training as a potentially effective means of improving mediational teaching skills. Further subjective validation for this contention is found in the written feedback of the participants:

"I gained insight into new ways of teaching".

"The MLE approach is a challenge to teachers and pupils".

"I learned new ideas and skills which allow me to break away from rigid old methods".

"MLE is more child-centred".

The general consensus of opinion among participants was that everything they had learnt in the programme was of practical benefit and could be used with their pupils in the classroom situation.

Hypothesis 1b found partial support in that there was a significant reduction in only one of the non-mediational strategies employed by teachers. It would appear that deliberate, focused mediation is essential before behavioural change will occur.

**Hypothesis 2: There will be an improvement in the professional self-perception of teachers after completing the MLE inservice training programme.**

This research aimed at promoting a positive professional self view in addition to stimulating participants with opportunities to develop knowledge and skills. Various writers support the contention that change in professional self perception holds particular promise as a criterion for judging the effectiveness of teacher inservice training programmes (Elsworth & Coulter, 1977; Rowe & Sykes, 1989; Smylie, 1988). The results of this study revealed a highly significant overall increase in the teachers' ratings of their professional self-esteem ( $p < 0,005$ ) suggesting that they perceived themselves as more competent and confident teachers after participating in the programme. A breakdown of individual ratings showed a definite increase in self-esteem for all participants, with the exception of a slight decrease for one participant (see figure 3.6). These results thus provide strong validatory support for Hypothesis 2. While

acknowledging that the present teacher inservice programme is but one of many potentially valuable training courses which might enhance professional self-esteem, the results strongly uphold the positive effects of the MLE teacher inservice training on the professional self-perception of participants and support the notion that professional development has a direct and positive effect on teachers' self-perceptions.

It would thus appear that the MLE Teacher Training Programme has the potential to enhance teacher effectiveness by addressing the interacting areas of knowledge (cognitive domain), skills (behavioural domain) and by raising teacher professional self-esteem (affective domain).

#### **4.2 General implications of the results**

The present study, although limited, provides supportive data for MLE teacher inservice training as a viable and effective approach to enhancing teaching skills and attitudes. Not only has it the possibility for extending knowledge and honing mediational skills, but it also provides strong validation for the affective dimension of ongoing teacher education in general and for MLE training in particular.

#### **4.3 Limitations of the study, the programme and the measures and suggestions for further research**

While the results offered some significant improvements both in skills (increased use of mediational strategies) and in attitude (improvement in professional self-perception), certain limitations of the study, of the intervention programme and of the assessment measures need to be considered together with suggestions for future research.

##### **Limitations of the study**

A major limitation of the present study is the lack of control groups against which to evaluate the changes observed in the mediational behaviour and professional self-esteem of subjects. As this was not a rigorous experimental study the extent

to which results can be ascribed solely to the MLE intervention must be treated with caution. A more exacting evaluation of the programme might involve a three group design evaluating the outcome variables of:

- a. the MLE inservice programme given to an experimental group of teachers (E1)
- b. an alternative teacher inservice training programme (such as Instrumental Enrichment) given to a second experimental group of teachers (E2)
- c. a control group of teachers (C) receiving no inservice intervention.

Despite the limitations of the repeated measures within-subject paradigm, however, the present study was able to evaluate the effects of the MLE teacher inservice training course upon the selected outcome variables (mediational behaviour, professional self-esteem). As the teacher-participants represented a stable population, at the time receiving no input other than MLE training, any changes from pre- to post-intervention could most likely be ascribed to the intervention itself.

The small sample size is another limitation. This precludes generalisation to the larger population of teachers. Nevertheless this research can provide a useful pilot study informing future large-scale rigorously controlled experimental programmes.

The lack of high inter-rater consensus on certain strategies may be regarded as another limiting factor. Although both raters were post-graduate students familiar with MLE their manner of rating certain strategies may have varied. Ratings were done completely independently. Therefore, whereas one rater may have recorded repeated occurrences of a behaviour as but one incident, the other rater may have recorded each repetition as a discrete incident. (This discrepancy may have resulted in their observing similar trends but with low correlation).

Another explanation for imperfect consensus may be found in the overlap between certain mediational strategies such that one rater might have ascribed a certain behaviour to a particular MLE category while the other rater might have categorised the very same behaviour differently (e.g. Goal Planning/Challenge).

More rigorous training of raters may be necessary, to improve inter-rater correlations in future studies. (The present study allowed one supervised training session during which raters practised on two teaching videos).

### **Limitations of the programme**

The participants criticised the usage of longwinded terms in the MLE Training Manual, suggesting that terminology could be simplified and new concepts presented in a clear, comprehensible manner. This was well demonstrated during Session Four (Mediation of Competence), when the participants themselves facilitated the session, and successfully modified and simplified the language of the manual. (As the terminology used in the MLE Manual is designed for "first-language" English speakers, comprehension may have been difficult as participants have English as their "second-language").

Another unavoidable limitation of the programme was the time available. This was not always sufficient to fully integrate and implement certain of the concepts and is reflected in the differential results on certain MLE principles. A future programme should take into account the additional time needed to mediate more abstract and novel concepts.

### **Limitations of the measures**

While the use of videotapes affords a permanent, realistic and accessible measure of teaching behaviour, the MLE teacher rating scale could be further refined to avoid unnecessary overlap and duplication of strategies.

The Teacher Professional Self-perception Rating Scale (Elsworth & Coulter, 1977) provided a global measure of pre- and post-intervention self-esteem. The scale may be further factor analysed into clusters of attributes constituting affective dimensions such as "Orderliness", "Creativity", "Warmth and supportiveness". The interrelationships between these affective dimensions and specific mediational variables may provide additional fruitful data in a future study.

## Summary and conclusions

This study examined the effects of a specially devised MLE teacher training programme on the mediational teaching and professional self-esteem of inservice teachers. Significant results were obtained on four of the MLE strategies, positive trends were observed on four, and no changes were observed on two. For non-mediational strategies a significant decrease was obtained on only one strategy, while promising trends were observed on another. A significant improvement in professional self esteem was obtained for all but one participant. The overall findings of the study thus reveal positive changes in the mediational teaching behaviour and in the professional self-esteem of the teachers who participated in the MLE inservice training.

The literature on the importance of mediational approaches to teaching and learning presents a strong case in favour of MLE and the positive effects it has on both the child's intellectual and psychological development. The principles of MLE are aimed at facilitating an interactive "invitational" learning environment where pupils can develop feelings of competence, self-regulatory behaviour, and sharing behaviour as well as a sense of individuality and receptiveness to challenge and change. This approach stresses that learning must be placed within a meaningful, purposeful context and that concepts be linked and integrated - not presented in isolation. Feuerstein has stressed the importance of mediational teaching and learning and has warned that insufficient MLE will lead to cultural deprivation (failure to integrate the culture in which one lives), reduced modifiability and deficient cognitive abilities (Feuerstein, Rand, Hoffman & Miller, 1980). Adverse political and socio-economic factors have played a part in the educational and cultural deprivation suffered by black South African pupils (Burman & Reynolds, 1986), as has the limiting, disabling curriculum imposed by the system of Bantu Education. Mediated Learning Experience offers an educational approach which is curriculum-free and which may truly teach children "how to think and not what to think".

## REFERENCES

Aronowitz, S. & Giroux, H. (1986) Education Under Siege, London: Routledge and Keegan Paul Ltd.

Ashton, P. & Webb, R. (1986) Making a difference: Teachers' sense of efficacy and student achievement, New York: Longman.

Baron, J.B. & Sternberg, R.J. (1987) Teaching Thinking Skills: Theory and Practice. New York: W.H. Freeman.

Bhana, K. (1987) Thinking Skills Programmes: A solution to all problems? Conference Proceedings of the National Conference of the South African Association for Learning and Educational Disabilities, University of the Witwatersrand, Johannesburg.

Beasley, P.F. (1984) An evaluation of Feuerstein's model for the remediation of adolescents' cognitive deficits. Unpublished doctoral dissertation, University of London.

Blagg, N. (1991) Can We Teach Intelligence? A comprehensive Evaluation of Feuerstein's Instrumental Enrichment Program. New Jersey: Lawrence Erlbaum Associates.

Brophy, J. & Good, T.L. (1986) Teacher Behaviour and Student Achievement. In M.C. Wittrock (Ed.) Handbook of Research on Teaching. New York: Macmillan.

Burman, S. & Reynolds, P. (1986) Growing up in a Divided Society. Johannesburg: Raven Press.

Colyn, W. & Breen, C. (1989) Exploring action research: implications for teachers and researchers, South African Journal of Education 9 (2), P. 248.

De Bono, E. (1976) Teaching Thinking. London: Maurice Temple Smith.

Elsworth G.R., & Coulter, F. (1977) Aspiration and attainment: The measurement of professional self perception in student teachers. Occasional Paper, No. 11. Hawthorn, Vic: Australian Council for Educational Research.

Feuerstein, R. & Rand, Y. (1975) Mediated Learning Experiences: An outline of the Proximal Etiology for Differential Development of Cognitive Functions. Reprinted from International Understanding: Cultural Differences in the Development of Cognitive Process, Women in National and International Psychology, New York City.

Feuerstein, R., Rand, Y., Hoffman, M.B., Hoffman, M. & Miller, R. (1979) Cognitive Modifiability in retarded adolescents: Effects of Instrumental Enrichment. American Journal of Mental Deficiencies, 83:539-550.

Feuerstein, R., Rand, Y., Hoffman, M. & Miller, R. (1980) Instrumental Enrichment: An Intervention Programme for Cognitive Modifiability. Baltimore, MD: University Park Press.

Feuerstein, R. (1980) Instrumental Enrichment. Baltimore, MD: University Park Press.

Gregory, I. (1989) Self-Concept Development and Education, Teachers' Self Concepts. Elementary School Guidance and Counselling, 24 : 2.

Guskey, T. (1986) Staff development and the process of teacher change, Educational Researcher, 15(5): 5-12.

Haywood, H.C. (1990) A Total Cognitive Approach in Education: Enough Bits and Pieces! Presidential Address, Second International Conference on Cognitive Education of the International Association for Cognitive Education, Mons, Belgium.

Haywood, H.C. et al., (1982) Cognitive Education with Adolescents: Evaluation of Instrumental Enrichment, in A.M. Clark and A.D.B. Clark, Psychosocial Intervention: Possibilities and Constraints. Symposium, Sixth International Association for the Scientific Study of Mental Deficiency, Toronto.

Hickson, J. & Skuy, M. (1990) Creativity and cognitive modifiability in gifted disadvantaged pupils: A promising Alliance. School Psychology International, 11:295-301.

Ingvarson, L. (1987) Models of inservice education and their implications for professional development policy. Independent Teacher, 17(2), 23-32.

Joyce, B., & Showers, B. (1988) Student Achievement through staff development. New York: Longman.

Kash, M. & Borich, K. (1978) Teacher behaviour and pupil self-concept. Boston: Addison-Wesley.

Katz, M.A. & Buchholz, E.S. (1984) Use of LPAD for Cognitive Enrichment of a Deaf Child, School Psychology Review, 13(1), 100-105.

Martin, D.S. (1984) Can Teachers Become Better Thinkers? A Paper Delivered at the Annual Meeting of the Association of Teacher Educators, New Orleans, January 30, 1984.

Maslow, A.H. (1968) Towards a Psychology of Being, New York: Van Nostrand Reinhold.

Miller, R. (1992) Book of Abstracts, Third Conference of the International Association of Cognitive Education, Riverside, California, 1992.

Paxton, P. (1990) The Challenge of Invitational Education for Black Teachers in a Changing South Africa. Conference Proceedings, SAALED National Conference, University of Cape Town, September, 1990.

Purkey, W. (1970) Self-concept and School Achievement, Englewood Cliffs, NJ: Prentice-Hall.

Rowe K. J., & Sykes, J. (1989) The Impact of Professional Development on Teachers' Self Perceptions, Teaching & Teacher Education, 5(2) 129-141.

Skuy, M., Mentis, M., Nkwe, I., Arnott, A & Hickson, J. (1990 a) Combining Instrumental Enrichment and Creativity/Socioemotional Development for Disadvantaged Gifted Adolescents in Soweto: Part One. International Journal of Cognitive Education and Mediated Learning, 1(1): 25-31

Skuy, M., Mentis, M., Arnott, A. & Nkwe, I. (1990 b) Combining Instrumental Enrichment and Creativity/Socioemotional Development for Disadvantaged Gifted Adolescents in Soweto: Part 2. International Journal of Cognitive Education and Mediated Learning, 1(2):93-102.

Skuy, M. et.al. (1990) Predictors of performance of disadvantaged adolescents in a gifted program, Gifted Child Quarterly, 34, (3), 97-101.

Skuy, M., Mentis, M., Dunn, M., Durbach, F., Arnott, A. & Mentis, M. (1991) Mediated Learning Experience Working Manual. Vol. 1. Cognitive Research Programme, Division of Specialised Education, University of the Witwatersrand.

Smylie, M.A. (1988) The Enhancement Function of Staff Development: Organizational and psychological antecedents to individual teacher change, American Educational Research Journal, 25, 1-30.

Toffler, A. (1971) Future Shock, Penguin.

Torrance, E.P. (1965) Rewarding Creative Behaviour: Experiments in classroom creativity. New York: Prentice-Hall.

Tzuriel, D. & Ernst, H. (1992) Mediated Learning Experience in Free versus Structured Situations Among Pre-School Children of Low-, Medium- and High- SES. Paper presented at the Third International Conference on Cognitive Education, University of California at Riverside.

Wallace, B. (1991) Conference Proceedings, SAALED National Conference, September, 1991, University of the Witwatersrand, Johannesburg.

Waksman, M., Silverman, H. & Messner, J. (1982) IE Assessment of the Effects of a Cognitive Training Procedure on a Group of Gifted Students. University of Toronto, Unpublished Research Report.

Williams, F.E. (1972) A Total Creativity Program. Englewood Cliffs, NJ: Educational Technology Publications.

## Appendix I

### MLE TEACHER RATING SCALE

#### **Intentionality and Reciprocity**

1. Teacher arouses student interest and motivation.
2. Students ask questions relevant to the subject matter.
3. Teacher gives appropriate feedback on students verbal contribution.
4. Teacher is willing to re-explain when work is not understood.
5. Teacher comes prepared for the lesson and creates a sense of anticipation by changing classroom atmosphere.

#### **Meaning**

1. The teacher explains the importance or value of a subject.
2. The teacher explains the reason for focusing on a subject.
3. The teacher transforms material by changing frequency and/or intensity of presentation.
4. The teacher gives positive or negative feedback in explanation to a students responses.
5. The teacher asks more "how" and "why" questions - process questions.

#### **Transcendence**

1. The teacher explains a concept or principle beyond the scope of the present subject matter.

2. The teacher explains the relationship of the subject of the lesson to previous or future subjects.
3. The teacher explains how the underlying process in solving a problem can be applied to another situation.
4. The teacher promotes the use of work habits which are useful beyond present needs.

### **Competence**

1. The teacher selects and presents material appropriate to the students level of development.
2. The teacher phrases questions according to students level of competence.
3. The teacher encourages students to be aware of their progress relative to their own standards.
4. The teacher breaks down a complex task into its simpler parts to reduce anxiety.
5. The teacher praises successful steps towards completion of a task.
6. The teacher rewards participation in an activity.

### **Regulation and Control of Behaviour**

1. The teacher instills in students behaviour conducive to learning - good classroom management.
2. The teacher restrains the inappropriate impulsiveness of students.
3. The teacher encourages self discipline in students.
4. The teacher models respect, commitment and perseverance in classroom activities.

### **Sharing Behaviour**

1. The teacher applies effective group teaching methods.
2. The teacher encourages students to share their work experiences with each other.
3. The teacher shares her approach to solving tasks with students.
4. The teacher encourages students to help each other and facilitates peer tutoring.
5. The teacher encourages students to listen to each other.
6. The teacher encourages students to empathise with the feelings of others.
7. The teacher selects subject matter which emphasizes the importance of cooperation.

### **Individuation**

1. The teacher accepts divergent approaches in solving a problem.
2. The teacher encourages independent original thinking and gives opportunity for innovative work.
3. The teacher lets students choose part of their classroom activities and encourages diversity in use of free time.
4. The teacher enhances positive aspects of cultural pluralism.
5. The teacher supports the right of a student to be different.
6. The teacher refrains from asking for total identification with her values and beliefs.

### **Goal Planning**

1. The teacher fosters the need and ability of students to set realistic goals for themselves.
2. The teacher encourages perseverance and patience in the pursuit of goals.
3. The teacher explains to students the strategy underlying goal planning.
4. The teacher develops in the student the need and ability to review and modify goals according to changing needs and circumstances.
5. The teacher models goal directed behaviour: setting clear goals for each lesson.
6. The teacher instills an autonomous attitude in the students for their future.

### **Challenge and Novelty**

1. The teacher encourages intellectual curiosity.
2. The teacher encourages originality and creativity.
3. The teacher makes available to the students challenging, novel and complex situations.
4. The teacher encourages students to create their own examples and to present them to the class.
5. The teacher helps the student anticipate the satisfaction of completing a task.
6. The teacher encourages students to persevere with difficult tasks.

## **Self Change**

1. The teacher promotes self evaluation of individual progress.
2. The teacher discourages students from using external criteria for measuring progress.
3. The teacher de-emphasizes labelling of students.
4. The teacher generates an awareness of change within oneself.
5. The teacher models self change by sharing her growth and learning experiences.

Appendix II

THE TEACHER PROFESSIONAL SELF-PERCEPTION QUESTIONNAIRE

Please rate yourself according to the following criteria:

- X Myself as a teacher  
 0 The teacher I would like to be

warm	*	*	*	*	*	*	*	cool
chaotic	*	*	*	*	*	*	*	orderly
comforting	*	*	*	*	*	*	*	reproaching
friendly	*	*	*	*	*	*	*	hostile
free	*	*	*	*	*	*	*	constrained
spirited	*	*	*	*	*	*	*	apathetic
lucid	*	*	*	*	*	*	*	obscure
systematic	*	*	*	*	*	*	*	random
insulting	*	*	*	*	*	*	*	esteeming
creative	*	*	*	*	*	*	*	uncreative
disorganised	*	*	*	*	*	*	*	organised
conventional	*	*	*	*	*	*	*	unconventional
indifferent	*	*	*	*	*	*	*	eager
satisfied	*	*	*	*	*	*	*	dissatisfied
vague	*	*	*	*	*	*	*	clear
prepared	*	*	*	*	*	*	*	unprepared
jumbled	*	*	*	*	*	*	*	arranged
puzzling	*	*	*	*	*	*	*	informing
restrained	*	*	*	*	*	*	*	liberated
blurry	*	*	*	*	*	*	*	sharp
fresh	*	*	*	*	*	*	*	stale
mean	*	*	*	*	*	*	*	kind
adaptable	*	*	*	*	*	*	*	rigid
enthusiastic	*	*	*	*	*	*	*	unenthusiastic
inert	*	*	*	*	*	*	*	energetic
usual	*	*	*	*	*	*	*	unusual
imaginative	*	*	*	*	*	*	*	unimaginative
efficient	*	*	*	*	*	*	*	inefficient
conforming	*	*	*	*	*	*	*	non-conforming
rewarding	*	*	*	*	*	*	*	punishing
fulfilled	*	*	*	*	*	*	*	unfulfilled
stressed	*	*	*	*	*	*	*	relaxed
burnt-out	*	*	*	*	*	*	*	energised
confident	*	*	*	*	*	*	*	insecure

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**Appendix III**  
**MLE TEACHER TRAINING SESSIONS**

**Session 1**

**Aim:** To mediate Intentionality and Reciprocity

**Intentionality and Reciprocity**

Motivate the principle via a "Relaxation Underwater Fantasy". The facilitator has prepared the script and drawing materials (intentionality). The teachers will participate in the relaxation and fantasy (reciprocity).

**Meaning**

Discuss the relevance of the fantasy for unlocking creativity and for getting in touch with feelings and needs.

**Transcendence**

Discuss with teachers how this activity can be bridged into other teaching subjects, e.g. creative writing, drama, biology.

**Competence**

Work through the manual pages and exercises to familiarise participants with new concepts.

**Self-Regulation and Control of Behaviour**

Instruct teachers to "relax, breathe deeply and create a visual image" while listening to the fantasy script.

**Sharing Behaviour**

Teachers share their fantasy drawings and stories.

## **Individuation**

Facilitator and teachers observe that the same script can generate original, unique images in different people.

## **Goal Planning**

Participants are asked how each of their drawings might reflect an inner need or goal and what steps they could take to achieve their goal. Overall goals for the MLE programme are discussed.

## **Challenge**

Discuss the challenge of working in an affective- rather than a didactic mode.

## **Self-change**

Reflect how awareness of inner needs can change one's perceptions and deepen self awareness. Also, learning the MLE approach may lead to self-change in the approach used by teachers.

## **Evaluation of Session 1**

Positive aspects of the session included the teachers' enjoyment and enthusiastic participation in the fantasy-relaxation exercise as well as their feelings of sharing and nurturing one another. Among the images shared were:

Thembi: I see myself near a stream, enjoying an apple.

Zonke: I see my father bringing books and encyclopaedias.

Participants discussed what inner needs their drawings might reflect and how they might realise these needs.

The activity was an effective "ice-breaker" and also helped to introduce the MLE process as interactive teaching-learning and to introduce the mediator as a facilitator, rather than a lecturer.

The only negative feedback from the teachers concerned the terminology used in the MLE Manual (e.g. Intentionality, Reciprocity, responsivity, reciprocal, perceived relevance). They described some of the terms as "bombastic" and difficult to understand. (This observation was made during subsequent sessions but will not be repeated in the evaluations). We agreed to attempt to overcome this problem in future sessions by discussing difficult terminology and using simpler language to capture the underlying meaning.

## Session 2

**Aim:** To mediate Meaning.

### **Intentionality and Reciprocity**

Motivate principle via a number puzzle where completion of problems will enable participants to solve a riddle in code.

### **Meaning**

Discuss the relevance of learning arithmetic operations in order to solve problems.

### **Transcendence**

Relate the discussion to other problem-contexts such as shopping/money, baking, building and sewing.

### **Competence**

Work through the MLE Manual pages.

### **Self-Regulation and Control of Behaviour**

Check answers by using the inverse procedure. See whether the solution looks correct.

## **Sharing**

Two teachers collaborate on one riddle.

## **Individuation**

Note that individuals may have different (but effective) learning styles.

## **Goal Planning**

Discuss goals which teachers/learners can set e.g. learning one "times table" per week.

## **Challenge**

Apply basic arithmetical operations to a novel task such as building a picture (introduction to graph work).

## **Self-Change**

Note how much easier calculation becomes when "times tables" are fluent. Teacher can change his approach by using different activities to teach the concepts.

## **Evaluation of Session 2**

The teachers noted the importance of placing every lesson in a meaningful context and commented that bridging the lessons (e.g. applying math to baking, building) could highlight the purpose and everyday application effectively. They found the activity very motivating and observed that many MLE principles could be mediated during the same activity. The "terminology problem" was successfully negotiated by checking participants' understanding of concepts and by simplifying language where appropriate.

### Session 3

**Aim:** To mediate Transcendence

#### **Intentionality and Reciprocity**

Motivate the principle by using a theme, "shopping". A selection of groceries is brought to inspire a discussion of the many different things we can learn from grocery products.

#### **Meaning**

Discussion of the relevance of using a theme to integrate skills in many different areas (math, geography, art, etc).

#### **Transcendence**

Teachers discuss how they would apply the "shopping" theme to different areas.

#### **Competence**

Reinforce teachers for their original ideas. Work through MLE Manual.

#### **Self-Regulation and Control of Behaviour**

Use "brainstorm" technique to generate and develop ideas. Explain technique.

#### **Sharing**

Teachers group together to plan different lessons based on "shopping" theme.

#### **Individuation**

Each individual's contribution is discussed and valued.

## **Goal Planning**

Teachers plan how to implement lessons using an approach which integrates many subjects within one theme. They will try this approach during the coming week.

## **Challenge**

Use of a new integrative approach which bridges one theme to different subjects.

## **Self-Change**

Teachers present their lessons in a new way using "Themes across the curriculum"

### Evaluation of Session 3

The teachers enjoyed transcending the traditional "rigid compartmentalisation of subjects" by using a theme to integrate many different skills. During the brainstorming exercise they generated innovative ideas and were able to reinforce one another, thus mediating their own Sharing, Individuation and Competence. Participants felt that a theme approach is initially demanding as it involves teachers in extra preparation and time commitment.

### Session 4

Aim: To mediate Competence

#### **Intentionality and Reciprocity**

The teachers conduct the session. This facilitates their sense of competence and enables them to present the concepts in clear and simple terms. Teachers motivate the principle by means of role-playing.

#### **Meaning**

Discuss the importance of building self-esteem and competence in pupils.

## **Transcendence**

Relate discussion to other contexts such as home, work, adult-literacy.

## **Competence**

Discuss various verbal and non-verbal ways of mediating Competence. Work through M.F. Manual.

## **Self-Regulation and Control of Behaviour**

Discuss the use of reinforcement to encourage desired behaviour.

## **Sharing Behaviour**

Teachers share in the presentation.

## **Individuation**

Each teacher enacts his/her special way of mediating Competence.

## **Goal Planning**

Teachers build Competence by breaking lessons down into manageable steps with achievable goals.

## **Challenge**

Teachers try new ways of mediating Competence via role-playing. Try to reinforce pupils for positive attempts (not only for successful finished products).

## **Self-Change**

Teachers will try to mediate Competence frequently and differentially (in many areas: scholastic, behavioural, inter-personal).

## Evaluation of Session 4

The teachers presented the session well. This experience was successful in empowering them and raising their own sense of Competence and self-esteem. In working through the MLE Manual, they succeeded in simplifying terminology and making the ideas clear and accessible.

## Session 5

**Aim:** To mediate Self-Regulation and Control of Behaviour.

### **Intentionality and Reciprocity**

Motivate principle via an activity of "following instructions" - showing the negative consequences of impulsive behaviour.

### **Meaning**

Discuss the importance of regulating behaviour e.g. skim through tests before answering, "think before you ink".

### **Transcendence**

Relate discussion to other contexts e.g. preparing utensils and ingredients before baking, planning school projects.

### **Competence**

Work through MLE Manual.

### **Self-Regulation and Control of Behaviour**

Implement the principle via a robot poster reminding pupils to stop, think, then write. Encourage hyperactive child to sit still by providing him with cut-out footprints on which to place feet.

## **Sharing Behaviour**

Teachers share their ideas for mediating Regulation and Control of Behaviour.

## **Individuation**

Validate each teacher's contribution.

## **Goal Planning**

Discuss how Regulation and Control of Behaviour facilitates Goal Planning e.g. Self-instructions to "stop, scan exam paper and allocate time before answering" will help achieve a goal of high grades.

## **Challenge**

Discussion of the challenge to teachers of monitoring their own behaviour when implementing the MLE principles.

## **Self-Change**

Regulation and Control of Behaviour leads to Self-Change.

## **Evaluation of Session 5**

The activity generated amusement and a "hands on" understanding of how impulsive behaviour can cause negative consequences. Teachers acknowledged that pupils' behaviour is often "controlled" punitively and felt that they benefited from discussing other means, especially techniques to foster "self-control" in pupils.

## Session 6

**Aim:** To mediate Sharing Behaviour

### **Intentionality and Reciprocity**

Motivate principle via game of "feelings spinner".

### **Meaning**

Discuss relevance of pupils sharing ideas, feelings and resources in the classroom.

### **Transcendence**

Relate discussion to other contexts such as work, home and community.

### **Competence**

Reinforce and value teachers' ideas. Work through MLE Manual.

### **Self-Regulation and Control of Behaviour**

Mediator shares her own regulation and control of behaviour in monitoring the ten principles during sessions.

### **Sharing Behaviour**

Participants share their feelings.

### **Individuation**

Discuss how each individual's unique contribution enriches and extends the concepts being discussed.

## **Goal Planning**

Teachers plan different ways to mediate Sharing Behaviour in the classroom (group work, role-play, debates and discussions).

## **Challenge**

Discuss the challenge of fostering more Sharing Behaviour and ways to do this.

## **Self-Change**

Reflect how this principle requires a shift in teaching approach from competitive to cooperative learning.

## **Evaluation of Session 6**

The "feelings spinner" game successfully encouraged the teachers to share feelings and ideas. They observed how the "sum of everyone's contributions amounts to more than the individual parts". The teachers reflected how traditional teaching approaches tend to emphasize competition and "correct answers" at the expense of cooperation and diversity. They acknowledged the value of cooperative learning, but sounded a note of caution in that group work in very large classes (fifty pupils) may be noisy and difficult for teachers to monitor - careful, skilled planning of activities would be essential for this to succeed.

## **Session 7**

**Aim: To mediate Individuation**

### **Intentionality and Reciprocity**

Motivate principle via a "pick a word" and creates a unique (cinquain) poem.

### **Meaning**

Discuss the importance of encouraging and valuing individual ideas.

## **Transcendence**

Relate discussion on Individuation to other contexts e.g. home, work etc.

## **Competence**

Each individual's poem is valued. Work through MLE Manual.

## **Self-Regulation and Control of Behaviour**

Mediator shares the cinquain format which helps participants to structure and plan their poems.

## **Sharing Behaviour**

Teachers share their poems. Discuss the inter-relationship between Individuation and Sharing.

## **Individuation**

Each individual's original and unique poem is read aloud and appreciated.  
"Celebration of Diversity".

## **Goal Planning**

Discuss the attainment of this session's goal of "starting with a single word and a structure and creating a unique poem".

## **Challenge**

Discuss the challenge of presenting a novel activity and the sense of achievement in mastering it.

## **Self-Change**

Reflect how the novel activity unlocks a previously-untapped creative ability in each participant/learner.

## **Evaluation of Session 7**

The teachers initially doubted their creative abilities but discovered that they could realise the goals of the session and produce original poetry, if given sufficient structure and reinforcement. They commented that the session had highlighted the importance of encouraging and valuing individuality, while not losing sight of sharing and cooperation.

## **Session 8**

**Aim:** To mediate Goal Planning.

### **Intentionality and Reciprocity**

Mediate the principle via an application of teachers planning their own MLE lessons. Facilitator provides MLE lesson-plan sheet for teachers to use.

### **Meaning**

Discuss the importance of a step-by-step lesson plan in order to concretise each MLE principle and make it "real".

### **Transcendence**

Teachers encouraged to select diverse subjects so as to bridge MLE into many content areas.

### **Competence**

Teachers gain confidence in their ability to build MLE into their lessons. Work through MLE Manual.

## **Self-Regulation and Control of Behaviour**

MLE lesson plan gives a structure and format whereby teaching behaviour can be monitored.

## **Sharing Behaviour**

Participants share their plans, enabling the group to gain from different ideas.

## **Individuation**

Each teacher plans an original lesson in which MLE principles are utilised.

## **Goal Planning**

The goal of putting theory into practise is accomplished.

## **Challenge**

Discuss the challenge of using a new approach in the planning and implementation of lessons.

## **Self-Change**

Discuss how approaches to teaching and planning of lessons may be modified by acquiring the new knowledge and skills of a MLE approach.

## **Evaluation of Session 8**

Participants felt that the "hands on" experience of applying the MLE theory to an actual lesson plan, helped make the approach more concrete and viable. It would be easier to attain the goals of MLE with sound planning. However, as the concepts are still unfamiliar, more practice will be necessary. This will be facilitated at a later stage via videotaped microteaching.

## Session 9

**Aim:** To mediate Challenge

### **Intentionality and Reciprocity**

Motivate principle by means of a novel and challenging activity, Rey's complex figure drawing.

### **Meaning**

Discuss the value of exposing learners to new and unconventional tasks e.g. to simulate lateral thinking and sharpen problem-solving skills.

### **Transcendence**

Examine ways of providing unconventional and challenging tasks across curriculum.

### **Competence**

Competence mediated by the teachers' improvement on the Rey's figure drawing.  
Work through MLE Manual.

### **Self-Regulation and Control of Behaviour**

Teachers are assisted to regulate their performance by receiving verbal mediation which helps them monitor and improve their drawings.

### **Sharing Behaviour**

Teachers share their feelings about the task as well as their strategies for remembering the figure.

### **Individuation**

Teachers' unique problem-solving strategies are discussed and valued.

## **Goal Planning**

Discuss the importance of using planning and strategy in solving the "problem" of the complex figure drawing.

## **Challenge**

Challenge is mediated by providing the teachers with a novel, interesting task.

## **Self-Change**

Discuss the self-change and growth engendered by novelty and challenge. Problem-solving skills facilitate change.

### **Evaluation of Session 9**

The teachers found the activity to be novel, challenging and hence very motivating. They discussed the importance of always challenging the learner, but noted the difficulty of individualising activities in an overcrowded classroom. The interrelationships of Challenge and other MLE criteria were discussed.

### **Session 10**

**Aim:** To mediate Self-Change

#### **Intentionality and Reciprocity**

Mediate principle via the use of videos of pre- and post-intervention lessons.

#### **Meaning**

Discuss the importance of Self-Change, growth and professional development.

#### **Transcendence**

Participants reflect that Self-Change in one area can generalise to many areas e.g. home, friends, community.

### **Competence**

Positive Self-Change reflects growing Competence and is reinforcing to the learner.

### **Self-Regulation and Control of Behaviour**

Video teaching helps teachers to self-regulate their teaching behaviour.

### **Sharing Behaviour**

Teachers share in the micro-teaching experience and learn from each other's successes and mistakes.

### **Individuation**

Each teacher's unique teaching style and techniques are valued.

### **Goal Planning**

Microteaching can facilitate the planning and monitoring of behaviour change.

### **Challenge**

New approach and techniques provide a challenge to participants.

### **Self-Change**

This can be recorded and monitored via video microteaching.

### **Evaluation of Session 10**

The post-intervention videotapes are being filmed as part of an ongoing research project. Therefore the process of Self-Change is being monitored over an extended period and has yet to be evaluated.

MLE2

**Author: Berkowitz G.H**

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