Using Dynamic Assessment as an Innovative Learning Tool for Educators and Students

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One of the most noteworthy contributions to the field of dynamic assessment has been that made by Reuven Feuerstein and his colleagues. (Feuerstein etal 1980, 2006) who developed the *Learning Potential Assessment Device* (LPAD) and *Instrumental Enrichment* (IE) . These are dynamic tools for assessing the potential of children, adolescents and adults for growth in specific cognitive processes. The emphasis is upon the development of the cognitive skills and habits of mind that enable learners to assemble knowledge and learn how to learn. Compared with static testing measures, dynamic assessment changes the practice of testing in four areas: the structure of the instruments, the nature of the test situation, the orientation from product to process and the interpretation of results. (Feuerstein, Rand and Rynders. 1988).

Feuerstein's assumption underlying his basic premise is that intelligence is modifiable and quite drastically so. Feuerstein has made good on this assumption. He has taken retarded performers and effected quite substantial increases in their level of functioning. Using the term *retarded performer* rather than *retarded person.* Feuerstein has believed that it is the performance, not the person, that is retarded and hence that the retardation can be mitigated by improving the performance…He has argued that structural changes are possible in the organism through cognitive dynamic assessment and interventions. (Sternberg and Grigorenko. 2002).

A number of deficient cognitive functions can result from a lack of MLE . These are found to be deficient very often and they fall into four categories : impairment in cognition at the input, elaboration, output phases and affective motivational factors. Each specific phase has a list of related cognitive deficiencies which are amenable to change via different MLE strategies. It is important to note that accompanying mediation, the child is raised to a higher level of cognitive development and a passive-acceptant approach is replaced by an active modification approach on the part of the mediator. The active modification approach is based on the idea of the modifying environment (Beker and Feuerstein 1990) which is rooted in the assumption that fundamental change can be stimulated by planned, active intervention .

The objective, it should be emphasized, is not simply that students should be able to do specific tasks better, but that they should do them differently in ways that will better enable them to approach and master other tasks of the same kind in the future. (Beker & Feuerstein, 1990). This cognitive demand is highly necessary in our knowledge-based economy where so many individual intellectual, social as well as emotional choices have to be made . The child too, has to learn to adapt and Beker (1989) emphasises a need for him to establish cognitive and emotional flexibility and the capacity to modify his own thinking, feelings and behaviour in response to internal and external conditions.

Dynamic Assessment (DA): The Test-Teach-Retest model

Dynamic assessment (DA) is based on Vygotsky's model of cognitive development (Vygotsky, 1986). Within this model, the child's knowledge develops in social interactions

with more capable others. These experiences are culturally mediated and gradually become internalized as higher cognitive functions. According to Vygotsky, learning takes place in the 'zone of proximal development' (ZPD). A child acquiring new information initially requires maximal assistance from an adult, but eventually is able to assume greater responsibility for the activity as the information becomes internalised. The ZPD lies between the level of performance the child can reach unassisted , and the level that can be attained when adult assistance is provided. In DA, the goal is to establish the amount of change that can be induced during interactions with the examiner during the assessment process.

According to Tzuriel (2001) the development of DA in general and particularly for young children has evolved mainly because standard psychometric measures were not designed to provide information about individual's learning potential, learning processes of the child, mediation strategies, and specific cognitive functions. The use of norms in standardized testing is based on the assumption that all persons of a given age had been exposed to equal learning opportunities. Clinical experience and research findings however indicate that poor school performance and inadequate cognitive development reflect deficient cognitive processes, rather than low IQ.

In his book (Dynamic Assessment of Young Children; 2001) Tzuriel tried to establish DA as a useful and rich complementary approach that together with the standardized, normative assessment portray a holistic and accurate picture of cognitive functioning. DA appears to offer a more adequate assessment of handicapped persons (eg MR, sensory impaired, emotionally disturbed) and persons with learning disabilities. DA probably reflect more accurately individuals' learning capacity and relate closely to developmental variables such as the mediation patterns within the family. In addition, DA offers specific and accurate intervention processes rather than vague and general recommendations about treatment procedures.

Clinically, DA can assist clinicians in determining when and how to intervene but not all DA methods are equally useful for making diagnostic decisions with children with specific learning disabilities. Researchers examining DA with LD children have long advocated for the use of a test-teach-retest paradigm to assess children's learning potential. Most of the work using this paradigm has originated in the field of cognitive and educational psychology. Some of these applications are highly individualized and non-standardized and using somewhat unstructured intervention procedures (Feuerstein etal. 1980; Tzuriel, 2001) and these have high face validity . Within this paradigm, the examiner initially identifies deficient or emerging skills that may be related to a lack of mediated learning experience (MLE) . This is a key component within the test-teach-retest model.

Feuerstein's Mediated Learning Experience (MLE)

Feuerstein defines Mediated Learning Experience (MLE) as 'an interaction in which another human, usually the adult caregiver, interprets the world to the child.' (Feuerstein et.al., 1980). In a mediated learning experience, the teacher or mediator interposes himself or herself between the ID child and the environment. According to Feuerstein the ID child learns by means of two major systems : direct exposure and mediated learning.

Learning through direct exposure is based on Piaget's formula of S-O-R which translated means that the organism (O) or the individual LD child interacts directly with the stimuli (S) of the surrounding world and responds (R). In this kind of interaction with the environment learning is incidental. Mediated learning on the other hand is the more vital approach that

ensures effective learning. Feuerstein develops Piaget's formula of S-O-R further to include a human mediator between the world of stimuli, the organism and the response. His new formula for mediated learning is then S-H-O-H-R where H is the human mediator. The human mediator interposes himself between the learning organism and the world of stimuli to interpret, guide and give meaning to the stimuli.

Central to the MLE process is the theory of structural modifiability which represents a comprehensive (holistic) approach to problems of low levels of cognitive performance. According to Kaniel and Feuerstein (1989) structural modifiability relates to the manner and method by which the individual changes. This refers to a mental structure which, despite its possessing fixed characteristics, is also constantly developing and being modified. The basic premise of this theory is that the individual's cognitive system is constantly undergoing change since it is open and flexible.

MLE is a dynamic process by which structural cognitive modifiability occurs with the help of the mediator (teacher) who organises and interprets the world to the child. When an individual gives meaning to events, helps children select relevant from irrelevant variables, assists in abstracting rules for regularly occurring phenomena, and generally attempts to develop children's ability to think, that individual is engaged in mediated learning. The MLE approach creates an interactive process which allows the teacher to derive a great amount of information concerning the nature of the difficulties the ID child is confronted with in the cognitive tasks given to him. The dynamic assessment session is marked by a constant feedback process involving both the mediator and the mediatee, with the mediator constantly intervening.

According to Feuerstein and Krasilowsky (1970), many severely deprived adolescents in Israel had benefited from cognitive intervention programs based on MLE. Almost two decades of clinical experience with cognitive modifiability approaches applied to hundreds of socially deprived adolescents as well as experimental work done on groups of retarded individuals, have demonstrated the effectiveness of these methods to evaluate modifiability in youngsters above and beyond their low manifested level of cognitive functioning.

MLE basically has been used by mothers and fathers with their children all the time, usually without their thinking about it. However, many children have not experienced adequate MLE probably due to parents being very poor transmitters or receivers and as a result these children have not developed the adaptational skills on which further developmental learning depends. Sometimes the cognitive deficits in the child can be organic in nature or indirectly related to parental malfunctioning due to economic or marital stress and mental or emotional difficulties. In any event, when the needed MLE is provided through parents or any adult when that is possible, the cognitive deficits can be successfully resolved.

According to Feuerstein, many children who manifest low mental functioning do so not necessarily because of particular 'etiological' factors like heredity and/or organicity, but because of the lack of MLE. The deficiency produced by lack of MLE is mainly in the areas of attitude, orientation, habits and cognitive strategies of the child toward the world and toward himself. Such deficiency may not necessarily occur if MLE is made accessible. It is important to emphasise that MLE represents the quality of the interaction and is no way connected with any school subject matter. Feuerstein had developed ten criteria that

described mediated learning which may be seen in various types of situations, different environments and cultures.

1 intentionality and reciprocity
2 meaning
3 transcendence
4 competence
5 self-regulation and control of behaviour
6 sharing
7 individuation
8 goal planning
9 challenge
10 self-change.

All the criteria of MLE are interlinked and it is up to the creativity, flexibility and insightfulness of the teacher to respond to the child in ways which exploit the mediational potential of the dynamic relationship.

Children need to enhance their 'propensity' to use their experiences with stimuli in order to become modified and more experienced by this exposure. According to Feuerstein and Rand (1991), they must be rendered more 'flexible' so that their previous ways of thinking can interact with the new data by new ways of perceiving them, new modes of 'elaborating' them, and new and more adequate ways of responding to them. Through this process, they will become better able to benefit from experience.

The first goal of any intervention programme that aims at enriching the low achieving student will be to have them 'permeable' to the program, by creating in them the prerequisites for learning and that is done through increasing their modifiability. A number of subgoals are necessary and Feuerstein insisted that these must guide the construction of the programme and the selection of its materials and content. These are listed as follows:

1 correction of deficient cognitive functions
2 acquisition of prerequisite information
3 production of generalization and transfer
4 development of intrinsic motivation
5 creation of task-intrinsic motivation
6 changing the role of the LD child.

Case Studies

The following cases provide evidence of cognitive modifiability and the successful intervention of MLE. (Mediated Learning Experience) These studies indicate how certain kinds of adverse early experience can be eradicated by the systematic removal of certain depriving conditions and by the intervention of appropriate MLE strategies for the redevelopmental and adaptive processes to continue.

Case Study 1

Secondary school setting based on J.Wong's masters research (in Tan & Seng. 2005)

The purpose of this study is to investigate the effects of Specific Cognitive Functions Intervention (SCFI), developed and based on the concepts from Feuerstein's Instrumental

Enrichment Programme, on the cognition of Normal Technical students in a secondary school.

The rationale behind using SCFI is to help pupils understand their thinking process through content-free instruments as well as to find meaning in the experience of learning. If pupils could make meaning and purpose out of their learning, it would give them more confidence in their work. It would not only enhance the pupils' self-esteem and motivate them to learn but also motivate the teacher to teach them. Thus, through enhancing the cognition of the pupils, it led to an enhancement in their self-esteem as well as the drive to learn (motivation).

Results from studies on self-esteem and motivation lead educators to postulate a causal relationship between cognitive and affective growth. Study conducted by Pajares (2001) showed that positive dispositions such as optimism, perceptions of authenticity, self-acceptance and regard, and acceptance and regard for others are themselves related to academic motivation and achievement. Therefore, the rationale behind this programme is that the Specific Cognitive Functions Intervention (SCFI) will have positive effects both cognitively and affectively on the students.

Thinking well is often a matter of attitude or disposition, rather than intelligence. It is not enough to teach pupils to perform thinking operations and tasks. They should also be taught attitudes and willingness to carry them out on their own without being asked (Ennis, 1987). However, attitudes had been built up through personal experiences since they were born. It is hoped that with the enhancement of their cognitive functions through understanding their own thinking processes, their attitudes towards work may be changed.

In Arthur Whimbey's research reported in Nickerson, et al. (1985), low-aptitude pupils:

- were mentally careless
- failed to read instructions carefully
- did not make a complete effort
- were indifferent about their performance
- placed little value on reasoning as a way to solve a problem
- were more interested in the right answer than how to arrive at it

This aptly described the attitudes of the Normal Technical pupils at work. The difficulties faced by Normal Technical pupils in thinking can be a result of one or more of the categories listed by Nickerson, et al. (1985):

- Problem with thinking and learning styles
- Problem with abilities
- Problem with know-how; making errors in encoding, operations and goals
- Problem with cognitive overload

To think and learn effectively, one needs to have traits like attentiveness, precision, persistence, resourcefulness and orderliness. In order to perform a task successfully, a child needs to select a host of relevant subskills from a repertoire of skills which the child built up over his years of education. However, before the child could perform the task correctly, the skills required of the task must exist in his repertoire of skills for him to make use of. The likely outcome of a child deficient in some skills would be poor work done. However, this is often interpreted as carelessness or having low intelligence.

One of the skills lacking in Normal Technical pupils is the ability to analyse situations. Most Normal Technical pupils when faced with an influx of information have problems with handling them. They do not have the skills necessary to analyse them and use them meaningfully in their decision making thus leading to premature decisions that others may perceive as lack of cognition.

Research Model

Learning does not take place unless one is able to analyse a situation well. It involves planning one's course of action, communicating it and reflecting on it. Thus, the ability to analyse, plan and communicate works hand-in-hand to develop an independent learner. Performing these 3 skills requires one to acquire the following subskills:

- Comparison
- Sequencing
- Logical Thinking
- Categorising
- Inferring
- Accuracy
- Precision
- Impulsivity
- Summative
- Discriminative
- Selection
- Reasoning
- Finding relationship
- Perception
- Reflection
- Checking

These subskills are not mutually exclusive to each of the 3 main skills. Thus the research model shows a rotating concentric circle of subskills that are necessary for one to be proficient in any one of the main skills. Through the mastering of the main skills, the experience of learning will enhance his self-esteem, thus motivates him to learn more.

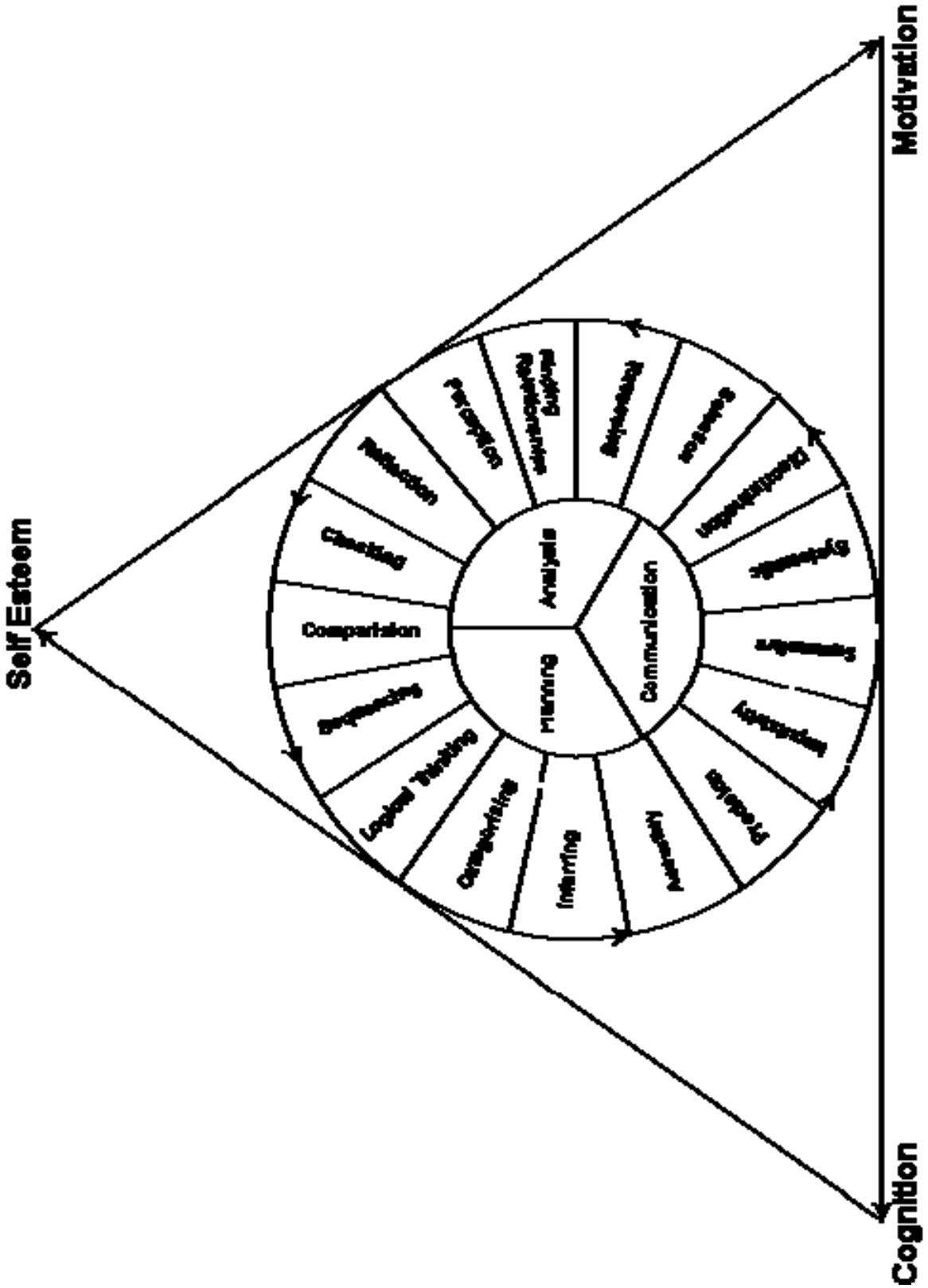

Figure 1: *The research model for this study*

Intervention

A set of instrument, Specific Cognitive Function Instrument, based on FIE concept, is developed to help the Normal Technical pupils to acquire the subskills. These were administered to the pupils over a period of 8 weeks as shown in Table 1.

Table 1: *Process of administering SCFI enhancing 17 subskills*

Cognitive Functions Addressed	Instrument Used	Mediated Learning	Time Frame
Systematic, perception, checking	Comparison	Pupils do the exercises, graded, returned and get pupils to comment on their way of deriving at the answer. Pupils were then taught how to do it systematically, checking on differences that were overlooked. Allow for demonstration by pupils using the existing and new worksheets.	Week 2
Impulsivity, precision	Organisation of Dots	Pupils were taught how to complete the exercise. Exercise is graded, returned. Pupils to share on how they derived at the answers and discover the possible causes of their mistakes. Pupils given another exercise for completion and graded. The grades of the new exercise are compared with the old one. This will stop once the pupils achieve improvement in the exercises.	Week 3
Accuracy, precision, summative, selection	Organisation of Dots	Pupils are given exercises that contained missing dots or extra dots to complete. After each exercise, pupils check for the number of mistakes.	Week 4
Precision, checking, comparision	Comparison	Pupils given exercises to be completed and timed. Working in pairs, they checked on each others' answers on completion of the exercise and report any differences to their partners.	Week 5
Discrimination, categorising	Categorisation	Pupils complete exercise and comment on how they arrived at the answer. Get pupils to discriminate the selected answer from the others by discussing the characteristics items in the exercise.	Week 6

Logical thinking, reflection, reasoning, cognition	Translative relations	Pupils complete exercise and gives explanation on how answers are derived. Partners exchange comments on the logic explained by each other. Pupils reflect on comments and compare their logical thinking with their partners. Teacher confirms the logical thinking process of each exercise.	Week 7
Sequencing, finding relationships	Numerical Progression	Pupils complete exercises and highlight the pattern in each exercise. Pupils draw simple numeric progression exercises for the class to solve.	Week 8
Systematic, precision	Analytical Perception	Pupils complete exercises and share on how they arrive at the answers.	Week 9

Sample

The sample was taken from a secondary school and the IE instrument administered to a group of Secondary 3 Normal Technical pupils. With only one class of Normal Technical pupils in the school both experimental and control group came from the same class. The two groups were segregated by the elective subject they take. 24 pupils taking Elements of Office Administration formed the experimental group while 14 pupils taking Technical Studies formed the control group. Mediated learning was used as the mode of delivery in guiding pupils in the completion of SCFI.

Results

The first exercise of Feuerstein's FIE Organisation of Dots was used as a pre- and post-test instrument for measurement of effects in cognition. Cognitive functions like planning, summation, categorisation, analysis, precision, restraint from impulsivity, reduction of egocentric behaviour and problem solving are skills required in the test. It was given to the pupils (n=38) participating in the study for both pre- and post-test. For all the 24 sets of dots to be completed, each pupil attempted to join the dots to form geometrical figures similar to those in the sample given with 1 mark given to each correctly illustrated set. The experimental group had scores for pre-test ranging from 12 to 24 with a mean of 17.21 and a standard deviation of 3.32 while the control group (n=14) had scores ranging from 9 – 23 with a mean of 15.71 and a standard deviation of 3.63.

In the post-test, the experimental group scores ranged from 15 – 23 with a mean of 19.71 and a standard deviation of 2.20 while the control group score ranged from 11 – 22 with a mean of 15.21 and standard deviation of 3.21.

Analysis of the difference in the pre- and post-test of the experimental group and the control group showed that 15 out of 24 pupils or 62.5% of the experimental group experienced an improvement in cognitive function and 2 out of 24 pupils or 8.3% experienced no change while 7 out of 24 or 29.2% experienced deterioration in cognitive functions. The control group, however, showed that 3 out of 13 pupils or 21.4% of the control group experienced an improvement in cognitive functions and 2 out of 13 pupils or

14.3% experienced no change while 9 out of 13 or 64.3% of the control group experienced deterioration in cognitive functions.

Table 2: *Changes in Cognitive Functions of Experimental and Control Group*

Cognition	Increase		No Change		Decrease	
	No.	%	No.	%	No.	%
Experimental Group	15	62.5	2	8.3	7	29.2
Control Group	3	21.4	2	14.3	9	64.3

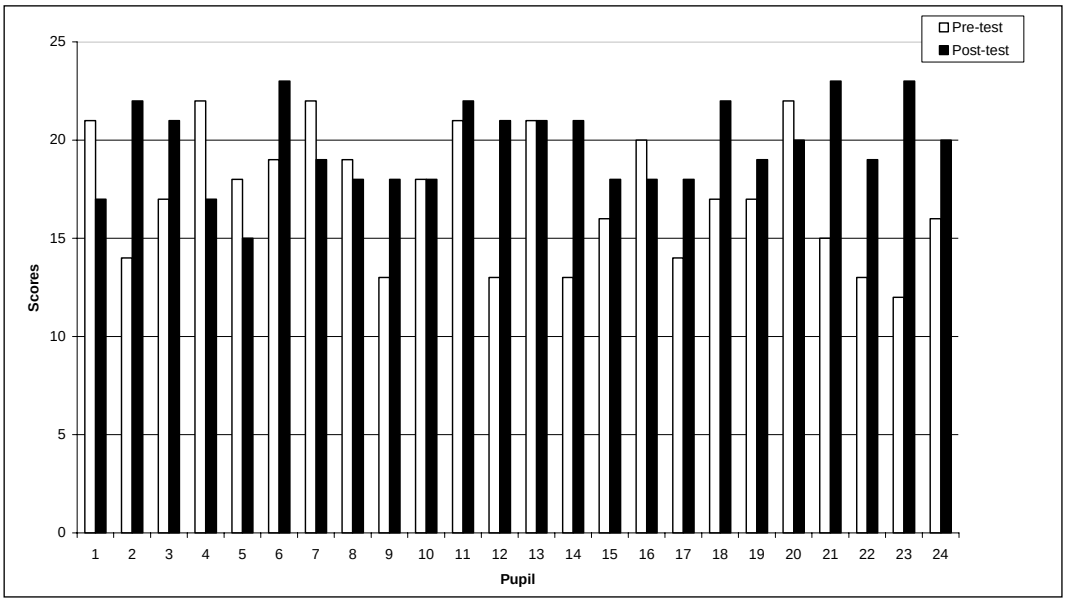

Figure 2: *Pupils' Pre- and Post-Test Scores for Cognitive Functions in the Experimental Group*

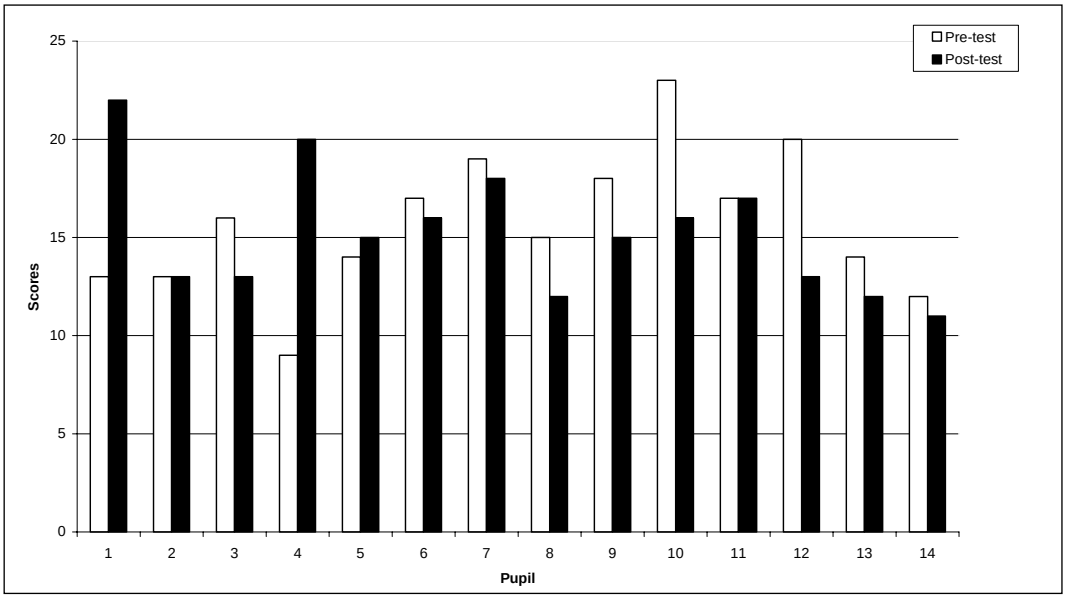

Figure 3: *Pupils' Pre- and Post-Test Scores for Cognitive Functions in the Control Group*

T-test was applied on this data and results showed that the intervention, showed an improvement (M=2.50, SD=4.44) in the pupils' cognitive functions between the pre- and post-tests, this improvement was not statistically significant, t(23)=2.76, p<.01, two-tailed. The control group experienced slight deterioration (M=0.50, SD=5.05) in cognitive functions in the pre- and post-test. This decrease is not significant, t(13)=-0.37, p<.01, two-tailed. Details are shown in Table 3 and Figure 4.

Table 3: *Pupil Score on Cognitive Functions in the Pre- and Post-tests for Experimental and Control Groups*

Group	n		Pre-test	Post-test
Experimental Group	24	Mean	17.21	19.71
		Standard Deviation	3.32	2.20
		t-test		0.011
Control Group	14	Mean	15.71	15.21
		Standard Deviation	3.63	3.21
		t-test		0.717

* Significant at the 0.01 level of confidence.

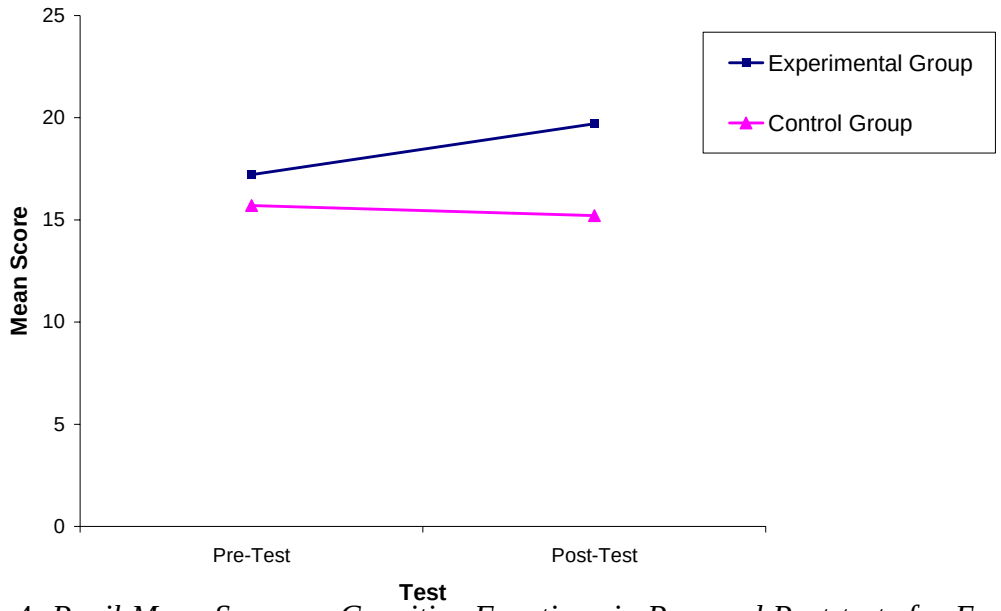

Figure 4: *Pupil Mean Score on Cognitive Functions in Pre- and Post-tests for Experimental and Control Groups*

Based on this statistical analysis, it appears that mediated learning and SCFI do not have significant effect on cognitive functions.

Discussion

In response to the research hypothesis, when tested for improvement in cognitive functions like accuracy, precision and restraint from impulsivity through the use of the FIE Organisation of Dots, the experimental group showed improvement in their scores although these were not significant (p<.01). The control group also showed an improvement in their mean scores although it was also not significant.

The use of Organisation of Dots as a pre- and post-test is limiting as it is not a test designed for measuring cognitive functions. However, it had been used to monitor the progress in cognitive development and performance over long periods of intervention (Seng, et al., 2003), thus making it possible to use it as a pre- and post-test for cognitive functions.

Although the results did not show significant improvement in their cognitive functions, there was there was significant improvement in some individual scores. The most significant was one pupil who moved from a score of 13 at the pre-test to a score of 24 at post-test. This score was nearly doubled over a period of 8 weeks of intervention. As the duration of the intervention was short coupled with the test used was limiting in measuring changes in cognitive functions, it was not sufficient to produce significant results.

A general observation was made at the post-test session. When given the same exercise for cognitive function as in the pre-test, majority of the experimental group sat through the entire test attempting each set of dots in the test. Most of them proceeded with confidence. Their attitudes towards completing the test during the post-test were different compared to the pre-test. There was no protest and query in the purpose of the test or complaints of waste of time. Several of them commented that they expected better performance than the pre-test. Most of them stayed on task until they had completed the test. The pupils were more accurate in their answers and they restrained from impulsivity. Though their post-tests scores were not significantly higher than the pre-tests, there was improvement in their scores as well as their attitudes. This change in attitude could have been due to their perception of their abilities as Thorkildsen, et al. (1994) found that competence in performing a task is one of the perspective pupils view as important in encouraging them to focus on a learning task.

On the other hand, the control group seemed to have problem remaining on their seats completing the tasks during the post-test. Several pupils gave up after one or two failed attempts at the tasks. Accuracy and precision were lacking. Pre- and post-tests showed that the control group could not identify the properties of the figures in the tasks. For example, they were unable to accurately identify an isosceles triangle from the group of dots. Some merely joined three dots randomly to form a triangle without carefully considering the properties of the geometric figure. The control group was only concerned with completing the test and handing in their completed or half-completed tasks. There were no attempts to re-look at their attempts prior to submission. The scores for the control group were generally lower or no change in the post-test compared with the pre-test.

Based on the results, it appears that mediated learning and SCFI has an effect on the cognitive function of the pupils though the change was not significant at 0.01 level of confidence. Facione (1998) believes that good thinking skills requires a critical spirit from the part of the pupils, ie., a probing inquisitiveness, a keenness of mind, a zealous dedication to reason and a hunger or eagerness for reliable information. All these qualities were seen in the experimental group.

The interesting aspect of MLE and IE is that the programme not only develops pupils' cognitive structures, it also transform the mediators. Their attitude towards their charges is altered. They no longer judge pupils simply on the basis of their success or failure in their subject, but are more concerned about pupils' overall mental processes in some specific activity (Debray, 1994). Teachers reported that their FIE experiences improved their teaching skills, their understanding of the learning processes, their ability to assess learning and their ability to develop and maintain pupils' interest not only for FIE classes, but also for

learning other subjects. Teachers also learn to priortise, model, and facilitate the development of teachers and education systems that are better focused on learning and cognitive development on the pupils (Ben-Hur, 2001).

Tan (2003) posited that the repertoire of MLE would be a tool for teachers to reflect on their own practices, peer review of teaching and mentoring of fellow teachers. With the change in the attitudes of the teachers, attitudes of pupils towards the lesson also take a transformation.

The teaching of thinking is not merely the transferring of thinking skills. Developing better thinking and reasoning skills may have as much to do with creating dispositions for good thinking as it has to do with acquiring specific skills and strategies (McGuinness, 1999, Ennis, 1987). This is translated to developing a positive attitude towards learning, simply put, doing task without being asked. This behaviour is evident in the experimental group in their post-test session where they started on the post-test tasks without a word of protest as compared to the behaviour of the control group during the same session.

This study suggests that mediated learning and SCFI helped not only to enhance cognitive domain but also the affective development of the Normal Technical pupils. Both pupils and teacher (mediator) participated in the programme benefited from the programme.

Since self esteem is linked to motivation and academic performance, the task of the school is to find ways to improve the pupils' self esteem. It would be ideal if the ways do not take up extra time or manpower in the already stressful and tight schedule of the teachers. The use of mediated learning and FIE needs to be carefully incorporated in the curriculum to reap its full benefits.

Case Study 2
Primary school setting based on J. Silver's research in England (.in Seng etal. 2003)

This case study describes the use of the Building Blocks of Learning for a whole class application in a primary school in the south west of England. Some children within a busy mainstream classroom were getting lost, intellectually, emotionally, and socially. Whilst they had been physically included within the social framework of the group, they were isolated and excluded by their learning disabilities.

This school was in the process of introducing MLE throughout the school - that is, they were in the process of changing the whole school culture. But changing a system takes time and in the process some children continued to fail. Robust action was called for and as a consequence, a group of twenty-two children from years 3, 4 and 5 (ages between seven and ten years) were placed together in a specially devised classroom to provide a nurturing, positive learning environment. Here the children could develop a feeling of belonging and sharing, considerations that reflect criteria for Mediated Learning.

The children were offered a structured classroom-based thinking skills programme to accelerate their individual learning, whilst providing them with a general set of tools which could be applicable to the whole group for the development of cognitive skills and psychological tools for all aspects of learning.

In order to establish the potential abilities of these children, DA was applied first to individual children and then the whole group, thus focusing on both the individual needs of the children and the social activity of the classroom in a DA experience.

Teachers, classroom assistants, speech and language assistants and where possible, parents were provided with the BBL taxonomy of terms, and with the specific concepts developed in the DA experience. All adults involved with the children were encouraged to communicate and share the children's newly acquired concepts and skills.

Using the BBL (Building Blocks for Learning) tools for further DA, regular reviews of the children's progress demonstrated abilities to a use of a higher level of expressive language and an understanding of more complex concepts and ideas. This form of process monitoring revealed how familiar labels gradually began to be applied into contextual learning. Applying MLE and open-ended questions, teachers demanded the same logical verbal reasoning developed within the assessment process and gave children a more positive approach to learning. Just as significant is the teachers' enhanced optimism as a result of this experience. Preconceptions and assumptions about the static abilities of this group of children were discarded as meaningful learning and learning potential was recognised and developed within this dynamic process.

This case study illustrates the effectiveness of good mediation within the assessment process. It describes how the division between assessment and intervention becomes blurred when the assessment process is dynamic. That is, in order to be dynamic, an evolving cognitive process over time is indicated.

The function of a good mediator is to help the mediatee become aware of their own cognitive development throughout the process of assessment; thus fostering in the child a more optimistic and proactive approach to learning. Ultimately, this should take place as an automatic aspect of all dynamic interactions. However, there is a great difficulty for some parents and teachers to know quite how to get started on this process - a framework is needed within which to present appropriately chosen vocabulary and concepts. The Building Blocks of Learning aims to offer such a structure for beginning the process of mediation which can then be taken further by more well-known and highly structured programmes such as Feuerstein's Instrumental Enrichment.

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