

PARTICIPATION IN TEACHER TRAINING IN TWO COGNITIVE EDUCATION
PROGRAMS:
AN EXPLORATORY AND DESCRIPTIVE ANALYSIS

by

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Abstract

The purpose of this research was to examine the training, implementation and outcomes of Feuerstein's Instrumental Enrichment (FIE) and *Bright Start*-A Cognitive Curriculum for Young Children from the perspective of the teachers involved. The research was conducted by means of a survey distributed to all elementary schools in Vancouver and included 8 selected individual interviews. The 48 responding teachers had participated in a total of 114 training sessions, reflecting multiple trainings for 28 of the respondents. FIE and *Bright Start* were used in some way by about one third of the survey respondents, while Dynamic Assessment was used by over half of the respondents. Participants indicated a high use of mediated learning (MLE) and there were indications that MLE alone is having positive effects on teachers' practice. Factors that motivated teachers' participation in these trainings were: 1) school support 2) positive word-of-mouth-reports from friends and colleagues; 3) a search for improvements to teaching skills; 4) a match to a teacher's personal style. Suggestions for training improvement included: 1) better organization of the instructional time and materials; 2) improvements to the delivery of the training; 3) offering training in various formats; 4) increased opportunities for practice; 5) options for post-training support. Factors that positively influenced use of training included: 1) training in more than one program; 2) team teaching; 3) student success; 4) school support. Factors identified as not supportive of implementation included: 1) lack of post-training support; 2) isolation; 3) difficulties with the materials and manuals; 4) time limitations; 5) changes in teaching assignments. Suggestions to support increased use in schools included: 1) increasing the number of trained people in each school; 2) options for post-training support; 3) including the programs in Learning Centers; 4) increasing publicity. Outcomes for teachers included a sense of improved teaching skills, an increase in positive attitudes towards students ability to learn, and more awareness of students' learning needs. These programs appear to offer teachers a valuable classroom option.

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Chapter 1

Introduction

1.1) A Brief History of FIE and *Bright Start* in Vancouver

Since approximately 1986, the Vancouver School Board (VSB) has provided continued support for training of the programs that have evolved from the original work of an Israeli psychologist, Reuven Feuerstein. These include Feuerstein's Instrumental Enrichment (FIE), Cognitive Enrichment Network (CogNet), *Bright Start*, and a form of Dynamic Assessment (DA)¹. Individuals in Vancouver, frequently seeing less than optimal outcomes for students with special education needs, including students of cultural minorities and others from low socio-economic backgrounds, had pursued personal interests in FIE and DA from the early 1980s. It was not until the district's First Nations Education Consultant, Lorna Williams, began promoting the programs for this group, that training began under the umbrella of the Board. She was particularly concerned about the relatively large number of First Nations students who had difficulties with traditional schooling. Her belief was that, based on disrupted family experiences and cultural differences in learning style, many First Nations students were unable to make full use of our Western-style education system. Her search for solutions to this problem lead her to the work of Feuerstein, which is discussed in detail in Chapter 2. In spite of the fact that he developed his theories while

¹ Dynamic assessment is a generic term identifying a style of assessment and a group of assessment instruments whose goal is to assess an individual's learning potential. It will be discussed in detail in Chapter 2.

working with a totally different population of young people in Israel, there were many components that related to First Nations education. Feuerstein was dealing with immigrant children and youth who were in a new country, using a new language, and frequently coping with the traumas of war and long periods of refugee status following the Holocaust. The similarities with the First Nations in Canada, who are frequently subject to poverty, dispossession, and cultural and linguistic degradation if not destruction, were eminently clear.

FIE was the first program to be introduced, with the first group of teachers attending a summer training institute in 1986. By June 1992, 209 staff had been trained (Kettle, 1992). The VSB did its own evaluation (Kettle, 1992) which recommended continued support for implementation and training of staff in FIE across the city, at both the upper elementary and high school levels, in regular and special education classes, and with English-speaking and ESL students. At the same time, a training program was implemented in *Bright Start* - Cognitive Curriculum for Young Children, a kindergarten thinking skills program.

The number of program practitioners continued to grow, both at the intermediate and high school level with FIE, and at the early primary level with *Bright Start*. Also included were school psychologists and speech pathologists whose focus was DA. In 1989-90, the VSB supported a group of these professionals, as well as some teachers, to work with David Tzuriel at the University of British Columbia (UBC) for training and supervision in this alternate assessment method.

In 1991, the Mediated Learning Training and Research Society was formed as an independent, non-profit organization. Its mandate was the promotion of mediated learning, DA, and the related family of programs. The Society began with seed money

from the Variety Club, and support from the VSB in the form of a center at a Vancouver high school and 2 days secondment for a director. The Society now goes by the name of the Variety Learning Center (VLC) and operates with reduced support from the VSB (operating space and 1 day director secondment) and independent fund raising. It provides training in all programs as well as direct services to the community, and continues with its research function. Up until the mid-1990s, training in these programs had been offered by the VSB at regular intervals throughout the school year. Although recent budget difficulties have reduced the number of all professional development offerings, some training is still provided in FIE, *Bright Start*, and DA at considerable cost to participants in conjunction with the VLC. To its credit, and at considerable expense, the VSB, through individual schools, is still supporting teachers' interest in these programs. (Personal communication with Ingrid Jeffery, Director, VLC, August 8, 2001.)

1.2) A Personal History With These Programs

As a District Resource Teacher-Special Needs working mostly in poor and multi-ethnic areas of the city, I became interested in these programs in the early 1990s. The theory behind the programs made sense in relationship to my observations of the special students with whom I worked and my experiences in the Inner City. I took my first training in FIE in 1990 and went on to take training in *Bright Start*, CogNet, and DA, and finally, went to California to do the training to be a *Bright Start* Trainer. Over the years my interest has shifted to a more general interest in cognitive education and especially a component of this family of programs, called the Mediated Learning Experience (MLE), which is discussed in detail in Chapter 2. My belief is that MLE is the core of all of these programs, is critical in the achievement of the program goals,

and can be used on its own to support the development of thinking skills. It represents a significant shift from a traditional teaching style where the focus is most frequently on content, to an emphasis on teaching thinking processes that can be applied to learning in any subject area. I believe that this kind of educational change, when embraced at the classroom level, has the potential to affect learning outcomes in positive ways, especially for students who are faced with educational challenges.

As a teacher trying to use what I have been taught through my training in these programs, I have experienced frustration with my attempts to fully implement both FIE and *Bright Start*. The role of the Resource Teacher does not allow for the kind of consistency required to use the programs effectively. In my efforts to support classroom and resource room teachers, the story seems to be much the same. Limited teaching time and the many demands of busy classrooms seem to interfere with the use of programs that stand outside of the prescribed curriculum.

This problem of uneven levels of program implementation is not unique to Vancouver. There was general agreement on this problem during a discussion group of international trainers at the 1996 Conference of the International Association of Cognitive Education (Haywood, 1997). The consensus of this group was that there were two main reasons behind low implementation rates. The first, and most frequently cited reason, was not enough administrative support at all levels. The second reason was inadequate training, both at the initial stage and during classroom follow-up.

1.3) Purpose of the Research and the Organization of the Thesis

The purpose of this research is to look at training and implementation issues from the perspective of teachers who have completed training in two of these programs, FIE and *Bright Start*. It will focus on training and implementation experiences as well

as teachers' perceptions of the effect of the training on their professional practice. In the spring of 2000 I began this research project, and in 2001 I applied for and received a 10-week educational leave from the VSB to continue my investigations and complete the writing of this report.

Chapter 1 outlines the history of the use of these specific cognitive education programs in Vancouver and my experiences as a teacher working with them. It also identifies the purpose of the study. Chapter 2 looks at the theoretical framework of this family of programs. It includes a description of the FIE and *Bright Start* programs as they might be used in the classroom, and a description of the training course that prepares teachers for their use. A key component of the programs, the mediated learning experience, is described in detail. Chapter 3 reviews the international research base regarding effects of program implementation for FIE and *Bright Start* from the early years to the present. This research demonstrates what is known about the effects of these programs on children's concurrent and later academic success, and on teachers' skills. It also includes a brief review of the literature on educational change as it relates to the implementation of educational innovations at the classroom level. Chapter 4 describes the method and procedures used in this project. The chapter reports on the development, piloting and revision of a questionnaire, the sampling strategy used to recruit participants in the study, and the rationale and use of follow-up interviews with a sub-sample of participants. Chapter 5 presents the results from the questionnaires, and Chapter 6 presents the results from the follow-up interviews. Chapter 7 discusses the findings in relationship to motivational factors for training participation, training experiences, and teacher's perceptions of effects of the training on their practice. It also relates the findings to the factors affecting successful

educational innovation at the classroom level. The chapter also discusses the limitations of the research and the implications of the findings for current practice and for further research.

Chapter 2

The Theory, Practice and Training of Feuerstein's Instrumental Enrichment (FIE) and *Bright Start*

2.1) Feuerstein's Theory of Structural Cognitive Modifiability

Feuerstein based his theories on work that he did in post-World War II Israel, where he was faced with the task of assessing the learning of a multitude of other-cultured or culturally deprived, impoverished adolescent immigrants. [For Feuerstein's discussion of this work see Feuerstein, Rand, Hoffman, & Miller, 1980.] Feuerstein believed that standard psychometric procedures told little about the learning potential of these young people. These children tended to perform very poorly on standardized IQ measures, with scores that were often in the mentally handicapped range. When they were assessed for learning **capacity** rather than for specific **content**, the picture was much more optimistic. From this work came the theories of structural cognitive modifiability and mediated learning, his method of dynamic assessment which is known as the Learning Potential Assessment Device (LPAD), and finally the program that bears his name, Feuerstein's Instrumental Enrichment (FIE).

At the heart of Feuerstein's work (Feuerstein et al., 1980) are the theories of structural cognitive modifiability and mediated learning. Cognitive modifiability is the theory that "intelligence" is not a rigidly fixed ability, but rather that a child's learning potential consists in part of learned mental processes that can be developed and changed. One way that this can be done is through direct exposure to specific learning materials and activities in the environment, where the learner makes his own sense of his experiences. This view draws strongly on the Piagetian model of child development. Change can also occur through indirect means in which another

individual acts as the interpreter of the child's experiences, and causes the child to reflect on the meaning of the new learning. This is the mediated learning experience.

According to Feuerstein:

In contrast to learning by direct exposure, mediated learning occurs when a mediator interposes himself between the learner and the environment and interprets the world to the learner. ...Typically, mother-infant interactions abound with instances of mediated learning. ...temporal, spatial, causal, and other relationships not inherent in either the objects or the child's actions are mediated by the mother and other significant caregiving figures. In addition to transmitting all kinds of specific information that is simply not available via direct exposure, such as a knowledge of the past, mediated learning provides the kinds of experiences necessary for the building of cognitive structure. (Feuerstein et al., 1981, p. 273)

In situations where the early mediated learning experience has been inadequate- for whatever reason - Feuerstein argues that the provision of mediation at a later date, indeed into adulthood, can help to remediate cognitive functions that are faulty or inefficient. This, in turn, will produce permanent changes in the underlying cognitive structure by altering the thinking processes and allowing the learner to be more successful. Some children may have academic learning difficulties as a result of deficient cognitive functions caused by inefficient or inadequate mediation.

2.2) Mediated Learning Experiences (MLE)

There has been an increased interest in MLE in the 1990s. Mediated learning is now seen as a tool for the potential development of the cognitive processes and of learning. It can fit readily into classroom instruction (Dixon-Krauss, 1996; Rodriguez & Bellanca, 1996; Skuye, 1996) but is not itself an instructional program. It can be more correctly characterized as a teaching style and, as such, does not take time away from the regular curriculum.

As noted by Feuerstein (Feurstein et al., 1981) above, mediated learning has its origins in parent-child interactions. The mediational parent enhances the meaning that the child makes of an experience in a way that would not have been possible if the child were left to do this alone. For instance, the experience of a youngster viewing a construction site busy with workers and machinery would be limited by what was available to the senses and individual interpretation. If a parent was present who could explain what kind of building was going up, what the workers were doing, and what function the machinery played, it is obvious that the child would learn much more from the experience. The application of MLE in the classroom differs from the parent-child interaction in that it is applied systematically and thoughtfully across learning situations, and is based on information that the teacher has gathered about the specific learning needs of the individual students in the group. DA can play a key role in determining the need for mediation.

Feuerstein identified the following 12 parameters of MLE:

- 1) Intentionality and reciprocity;
- 2) Transcendence;
- 3) Mediation of meaning;
- 4) Mediation of feeling of competence;
- 5) Mediation of regulation and control of behavior;
- 6) Mediation of sharing behavior;
- 7) Mediation of individuation and psychological differentiation;
- 8) Mediation of goal seeking, goal setting, and goal achieving behavior;
- 9) Mediation of challenge: the search for novelty and complexity;
- 10) Mediation of an awareness of the human beings as a changing entity;

- 11) Mediation of the search for an optimistic alternative;
- 12) Mediation of the feeling of belonging.

(Feuerstein, Klein, & Tannenbaum, 1991, p. 15)

Of these 12, the first 3 are identified as crucial to MLE, and without them no mediation can take place. The others are incidental to individual situations and are used at the discretion of the mediator. Feuerstein et al. (1980) stressed that the quality of MLE is represented by the presence of the first three components. Intentionality refers to the actions of the mediator that signal to the child the mediator's intent to interact with the child. Reciprocity refers to the child's interest and involvement in the interaction. In mediation of meaning, the mediator works with the child to make meaning from the experience, embedding it in prior knowledge and current context, thus giving it value. Mediation of transcendence happens when the mediator moves from the situation at hand and relates the experience to the broader world around the child. Although the use of language is optimal in mediation, it is not necessary; mediation may take place in all modalities, including the use of gestures, models, and mimicry. Mediated learning as defined in this way is a complex interaction between adult and child. Feuerstein claimed that it is the quality and quantity of MLE that have been present that allows individuals to make the best use of direct learning experiences at later points in their lives (Feuerstein et al., 1980).

MLE at school age can be of most benefit to those children who are educationally at-risk, including those who are gifted (Tannenbaum, 1991), are culturally different (Emerson, 1991), come from disadvantaged backgrounds (Sewell & Price, 1991), and are identified as having special educational needs as a function of, for example, a mental handicap (Feuerstein et al., 1980).

2.3) A Description of the FIE Program

It was in light of the theories of structural cognitive modifiability and mediated learning, as well as their experiences with dynamic assessment, that Feuerstein and his colleagues developed the intervention program that has now become known as Feuerstein's Instrumental Enrichment (FIE). The primary objective of the program

...is to increase the capacity of the human organism to become modified through direct exposure to stimuli and experiences provided by the encounters with life events and with formal and informal learning opportunities (Feuerstein et al., 1980, p. 115).

Sub-goals are aimed at the correction and enhancement of cognitive processes and the development of language, intrinsic motivation, learning strategies, and an enhanced sense of self-esteem. FIE was originally designed for use with adolescents but has also been used with students as young as 9 years old through to adulthood. It consists of 14 units made up of paper and pencil exercises that, while not looking at all like typical "school work," are designed to support the development of various thinking processes. The units are identified as follows:

- 1) Organization of Dots
- 2) Orientation in Space
- 3) Comparisons
- 4) Analytic Perceptions
- 5) Categorization
- 6) Family Relations
- 7) Temporal Relations
- 8) Numerical Progressions

- 9) Instructions
- 10) Illustrations
- 11) Orientation in Space II
- 12) Syllogisms
- 13) Transitive Relations
- 14) Representational Stencil Design

(Feuerstein et al., 1980, p. 126)

Samples of the activities can be found in Appendix A.

The program is designed as an intensive “stand-alone” curriculum requiring 3 to 5 hours of instruction per week over a 2 to 3 year period. Lessons are typically 40 to 60 minutes in length and are divided into three main sections. The first is a preparation phase, in which vocabulary necessary for the lesson is taught and reviewed and strategies are developed for successful completion of the exercise. The second part involves doing the exercise. During this part of the lesson, the teacher models and reinforces the use of strategies and generally mediates the completion of the activity, checking answers with the students and discussing different possibilities. The final, and perhaps the most important part of the lesson is a discussion that helps students generalize, or relate the process that was used to complete the exercise to other areas of their lives. The lesson concludes with a summary generated by the students of the activities just completed.

As previously discussed, a key component of the program is the mediated learning provided by the teacher. Lessons are taught in a mediational style and concepts are generalized, or bridged, to the real world of the student. The bridging component is one of the more challenging parts of the instruction. It requires skill on the part of the

teacher to help students make meaningful links between classroom activities and the activities of their daily lives. To facilitate this bridging process, it is helpful if the teacher who teaches the students at other times during the school day also provides instruction in FIE, or at least has an understanding of the program.

Because there are no particular assessment tools that accompany the program, student progress must be monitored by the FIE teacher's evaluation of mastery as the student progresses through the instruments. The goal of the program is to enhance the ability of the student to benefit from classroom and other instruction, and so progress in academic subjects should also be monitored. Overall program effects are difficult to monitor because the areas targeted for change are not ones that are normally assessed, being process- rather than product-oriented.

2.4) FIE Training

There are four objectives for teacher training in this program: 1) knowledge of the theoretical framework; 2) ability to complete the activities; 3) understanding of mediation and related management strategies; and 4) development of skills to support bridging and the development of the cognitive functions (Feuerstein et al., 1980, p. 293). These four goals are reflective of the complexity of the program and the new learning that must take place before a teacher can successfully use it.

Training models vary. The original Israeli model included initial workshops during vacations followed by several inservice sessions throughout the school year. There was a heavy emphasis on practical classroom experience, with program consultants meeting with teachers for classroom observation and discussion every 2 weeks until all the units were covered (Feuerstein et al., 1980). North American models

that have evolved in the intervening years tend to be workshop sessions with follow-up support by the individual trainer.

The model that is currently in use in Vancouver divides the training into three levels, each consisting of approximately 35 to 40 classroom hours of instruction, typically completed over one week, but sometimes spread over a weekend and evenings. Level I usually includes the first three instruments as outlined earlier. Level II includes instruments 4 through 11, and Level III includes instruments 12 to 14. To be trained in all three levels requires between 100 and 120 hours of instruction. In Level I training, about 8 hours are spent on theory, the history of the program, and supporting research, spread throughout the sessions. The majority of the remaining time is spent working through the student pages, with instruction and discussion about MLE, bridging, and vocabulary. Level II is similar in that it reviews the theory and covers the relative instruments. A major focus of the Level II training is on the identification and development of the cognitive processes. Level III is similar again, covering the appropriate instruments and providing continued discussion and practice in all aspects of the program. The fact that the participants have an opportunity to work through and solve the student pages of the instruments themselves while receiving instruction and practice in mediation and bridging is an important part of the training. It supports teachers in identifying their own thinking style while at the same time developing an understanding of the experience from a student point of view. However, there is little provision for formal follow-up in the Vancouver model. The trainers and the VLC staff are available informally for consultation at a teacher's request and from time to time, follow-up meetings have been offered.

Trainees receive a copy of the teacher's manual for FIE (Feuerstein & Hoffman, 1980). It includes sections on the theories of structural cognitive modifiability and mediated learning, and descriptions of the cognitive functions as defined by Feuerstein. There are suggested outlines for teaching each lesson as well as ideas to support bridging and vocabulary development. The student pages must be purchased separately in packages for each instrument.

2.5) The Theory and Development of *Bright Start*

As FIE research was proceeding, Carl Haywood and his colleagues at Vanderbilt University saw a need for a program similar to FIE for use with young children at risk for academic failure. While FIE focused on the development and remediation of cognitive functions with older children who were struggling with learning, these educators believed that a program that had a similar focus for young children could be useful for early intervention to help prevent school failure. The *Bright Start*² program was designed in response to a belief that one of the major causes of school failure rests with the lack of development of underlying cognitive functions necessary for effective learning. Therefore, if the learning and thinking skills needed for academic achievement could be developed early in the school experience of these children, they would be better equipped for academic success.

There are three theoretical pillars on which *Bright Start* is based. The first, and a major contributor, is Feuerstein and his theories of structural cognitive modifiability

² The Cognitive Curriculum for Young Children: *Bright Start* (Haywood, Brooks, & Burns, 1986.) may also be referred to as CCYC or BS. In this document, in accordance with recent literature, it is referred to as *Bright Start*.

and MLE. The second major foundation is the work of Piaget, who is recognized for his work on the sequential development of the cognitive processes. The third theorist, Vygotsky, is credited for his work on the social-contextual nature of learning. Haywood also referred to his own work on the development of intrinsic motivation (Haywood, 1968, 1971).

2.6) A Description of the *Bright Start* Program

The program was designed for use with preschool-age children of normal intelligence who were identified as being at risk primarily because of poverty or cultural minority status, but it is also used with kindergarten and grade one students, as well as with children with disabilities such as mental handicaps and hearing or vision impairments (Vanden Wijngaert, 1991; Warnez, 1991). It has five components, all of which are deemed necessary to effectively meet the needs of the developing child who is at risk for learning problems. The first of these components is a grounding in a solid theoretical base, as discussed above. The second component revolves around seven units designed for small group instruction and includes the following topics: Self Regulation, Number Concepts, Comparison, Role Taking, Classification, Sequences and Patterns/Seriation, and Letter-Shape Concepts. Sample lessons are reproduced in Appendix B. The small group units provide guidelines for daily 20-minute lessons that are to be conducted with groups of 4 to 8 children. The purpose is the systematic teaching of thinking processes and strategies for learning. The third and major component of the program is the mediational teaching style (as discussed earlier) that is to be used not just at times of direct instruction, but throughout the day. Linked to this is the fourth component, which is a mediational behavior management system based on the principles of MLE. A final component is a parent program which focuses on giving

parents an opportunity to explore a mediational parenting style and includes specific home activities for parent and child. Parents are also encouraged to visit the classroom where mediational teaching can be seen in action.

There are six goals of the program as stated by the authors in the teacher's manual (Haywood, Brooks, & Burns, 1992, p. iii). These goals include:

1. The development and elaboration of basic cognitive functions;
2. The identification and remediation of deficient cognitive functions;
3. The development of task-intrinsic motivation;
4. The development of representational thinking;
5. The enhancement of learning effectiveness and readiness to do school learning; and
6. The prevention of inappropriate special education placement.

The program itself differs considerably from FIE. Whereas FIE consists mainly of stand-alone lessons that are taken from the units of the program and that include a generalizing or bridging component to children's experiences, *Bright Start* is embedded in the entire school day. The teacher identifies a cognitive function of the day, which relates to the small group lesson and which is referred to throughout the daily program. The *Bright Start* day includes planning and summary times, large and small group lessons and related activities, with bridging demonstrations and discussions occurring throughout the day. The teacher uses a mediational teaching style in as many interactions as possible and places the focus on the process of an activity rather than its outcome.

2.7) Bright Start Training

Training in this program in Vancouver, follows the same format as FIE. It consists of one session of about 35 to 40 classroom hours, usually over one week but sometimes split up over a weekend and a series of weeknights. It includes lectures, small-group activities, and lesson planning. Each small group unit is examined in detail, and participants have an opportunity to develop their own lessons according to program guidelines. Large group lessons are taught in the same way. Particular attention is paid to MLE and the concept of bridging for young children.

Trainees receive a teacher's manual that gives information on all the components of the program. Each small group unit has its own handbook, which identifies the skills to be learned, the cognitive functions to be developed, and activities to support specific goals. It also provides bridging examples with each lesson. Unlike FIE, there is no further cost after training as there are no student pages to purchase. Teachers create their own lessons with the guidance of the manual. Optional support materials that reduce lesson preparation time are available at extra cost.

Follow-up support to the training in Vancouver has been limited. After-school meetings have been offered from time-to-time, but tend to be poorly attended and eventually cease because of lack of interest (Personal communication with Ingrid Jeffery, Director, VLC, August 8, 2001).

2.8) Related Programs

There are four other programs in this program family that were developed from the same theoretical base as FIE and *Bright Start*. Although training has been offered in these programs through the Variety Learning Center, they are not the focus of this research. Information can be found on these programs in Appendix C.

2.9) The Research Questions and Significance of the Study

Chapter 2 has reviewed the theoretical and program foundations for both FIE and *Bright Start* and Chapter 3 reviews the literature on the effects of these programs on children and teachers. However, very little is known about the teachers who undertake the training for these two programs, what motivates them to take the training, and what factors affect the level of program implementation. The information gathered in this study can be useful on several levels. The first is at the level of the sponsoring agency, in this case the VSB. This Board has invested considerable resources in training staff in these programs over the years and it would be reasonable to assume that this represents a commitment to the programs and the underlying theory as effective tools for developing the thinking skills of at-risk students. The information gathered in this study can give some indication of the effectiveness of training and increase our understanding of the factors that result in successful implementation.

This information can also be useful at the training level. The format of the training of both the programs has stayed much the same since the beginning, but there has been no systematic review of the effectiveness of the training (Haywood, 1997). This research can provide some insight into how the participants experience the training, and exploring this area with them can add some insights into the effectiveness of the training process.

This research may also be valuable to the international cognitive education community. First-hand information from teachers about their experiences with training and use of these programs may provide some clues to solving the puzzle of uneven implementation rates. Implementation of a new classroom activity requires, at the very least, the co-operation of classroom teachers, and for optimal results, their enthusiasm.

Finally, the research can be of benefit to the teachers who are the front-line workers in the education system. Any effects on teachers' behavior will have a direct influence on their students' experiences of learning. Although limited to examining a particular kind of training, this study will offer some insights into the motivations behind teacher choices in professional development, and what factors influence the assimilation and use of new learning. This is particularly relevant to these programs because in addition to learning the content of the programs, teachers must also learn the unique teaching style that is imbedded in them. This study will add some information to our understanding of the factors that influence these personal learning processes.

The research project was designed to address the following five questions:

1. What are the personal and professional characteristics of the teachers who have taken training in these programs?
2. What were the reasons that these people chose to invest their time, energy, and in some cases their own money, in this training?
3. In what ways were these programs implemented after training?
4. What reasons did teachers give regarding their decisions about program implementation?
5. What were the outcomes of the training for teachers in terms of personal and professional change and their perception of effects on their classroom practice?

Chapter 3

Literature Review

The major focus of this research is teachers' perceptions of their training experiences in FIE and *Bright Start*. This chapter reviews the research literature on the effectiveness of these programs on children for one major and compelling reason: these programs work. Although results across individual studies tend to vary somewhat in effect sizes, depending on ages and learning characteristics of the samples and the nature and extent of program implementation, these programs overall have been found to be of benefit to the children who participate in them. Because a major focus of this research is to explore ways in which the training for these programs can be made more effective, it is important to review and highlight the central argument that they have been found to be beneficial for children.

The programs have been in use for more than two decades (in the case of FIE and the supporting assessment instruments) and for over a decade (for *Bright Start* and others), and so there is a considerable body of research that is available, although by far the majority of studies were attempts to replicate the original and appeared in the 1980s.

3.1) The Impact of FIE on Children

The original efficacy study and a follow-up study are described in Instrumental Enrichment: An Intervention Program for Cognitive Modifiability (Feuerstein et al., 1980). This work was almost immediately followed by a number of other experimental studies designed to assess the effects of FIE on various populations (see Blagg, 1991; and Savill, Twohig, & Rachford, 1986 for reviews). The original research in Israel was

based on a control group design, with 218 students who were 12 to 15 years old and were assigned over a 2 year period, to either the general education (GE) group or the FIE group. A set of 57 matched pairs was chosen as the sample for testing pre- and post-treatment. Tests administered included Thurstone's Primary Mental Abilities (PMA; Thurstone, 1962) (pre-test scores were also used as one of the criteria in matching the pairs), the Project Achievement Battery (a set of tests designed specifically to identify academic achievement), two teacher-administered classroom participation measures, and the Levidal Self-Concept Scale (Levine & Katz, 1971). Six additional tests were administered only post-treatment. Data were analyzed by analysis of covariance, with the PMA pre-test scores being used as covariant for measures that were administered only after treatment. Results showed a significant gain for the FIE group on measures of general intellectual ability. There were mixed results on the measures of classroom participation and no significant differences between groups on the Levidal Self-Concept Scale. The follow-up study, done 2 years after the completion of the first study, was interested in the durability of the initial effects of the treatment condition. It consisted of 184 subjects from the original group who had entered the Israeli Army and had been given an intelligence test upon entry. The results of an analysis of covariance, using the pre-test PMA scores as covariant, found that the significant gains for the FIE group over the GE group had been maintained. In a further, and unclear, evaluation of the data, the authors claimed positive effects for not only maintenance of changes, but for increases over time. This theory is identified as the divergent effects hypothesis (Feuerstein et al., 1980).

As might be expected, these initial reports raised much excitement and controversy. Although the reported results of this set of studies were promising, there

were problems with the research design and analysis of data. One of the first critiques (Bradley, 1982) questioned the validity of the measures used, identified weaknesses in the reported statistical techniques, and raised several more procedural problems to be addressed by future researchers. Another critique (Sternberg & Bhana, 1986) reviewed several programs designed to teach thinking skills. Its discussion of FIE identified similar problems to those identified in the earlier review but it was optimistic about the possibilities of the program.

Savill et al., (1986) completed a comprehensive review of the empirical research on FIE, including the original work as well as replication studies in Venezuela, Nashville, and eight other sites, and found several problems. One area of difficulty that was identified (and one that is common to much educational research), relates to the non-random assignment of the subjects as well as reduction in the numbers of subjects due to general attrition. This problem was compounded by the fact that the authors failed to account for it in either the data analysis or in their discussion of results. Other problems related to the nature of the assessment measures used and how they were administered. Some tests were given pre-and post-experiment, while others were administered only post. This leaves some questions about what was being compared to what. Furthermore, some non-standardized measures were used, including, the Project Achievement Battery and the classroom participation scales. The latter were completed by teachers who were aware of the treatment condition of their students, thus raising the question of objectivity regarding the scores. There was also a question raised by the lack of reported gains on the self-concept measures, despite the fact that increased self concept is an explicit sub-goal of the FIE program. In spite of the design weaknesses and interpretation problems, Savill et al., (1986) concluded that:

“Within the total set of studies, however, there is a subset that produced data that are striking and suggest that FIE may indeed be having an effect even though it is not clear just what this effect means” (p. 401).

The Student Assessment and Research Branch of the VSB published its own evaluation report on FIE only a few years after the program had been adopted in the district (Kettle, 1992). Data were collected from a total of eight secondary alternative program classrooms, four of which implemented FIE and four which continued with the regular program over the course of a school year. Pre- and post-tests were administered to measure cognitive abilities, self-esteem, and perceived sense of locus of control. The results indicated a significant positive effect of FIE students' on cognitive abilities. The author noted that the results, although positive, must be viewed with caution because of high attrition rates and uneven implementation of the program across groups. However, the report concluded with a recommendation for continued support for the program in the district.

Research on FIE continues, with pockets in many countries, including South Africa (Skuy, Lomofsky, & Fridjhon, 1993), Canada (Mulcahy, 1993; Silverman & Waksman, 1988; Wilgosh & Mulcahy, 1993), and Great Britain (Shayer & Beasley, 1987). Although conclusive evidence of program efficacy is still absent, results continue to be intriguing. For example, Mulcahy (1993) compared FIE and another thinking skills program and concluded that both programs were successful in improving student thinking, especially for learning disabled students. However, many studies remain unpublished or are available only from the program developers or those closely connected to them; and, of those that are published, few appear in independent, refereed journals (Sternberg, 1991). Much of this research now focuses on elements of

Feuerstein's work rather than the program itself, and especially on the process of DA and the concept of MLE.

3.2) The Impact of *Bright Start* on Children

A team led by Carl Haywood, working at Vanderbilt University, developed *Bright Start*. The original efficacy study (Haywood, Brooks, & Burns, 1986) was done in Nashville, Tennessee. The subjects included 27 pre-school children identified as mentally handicapped, all taught using the *Bright Start* program, and 92 same-age children identified as 'at risk' (due to low SES), half assigned to a *Bright Start* classroom and the other half to a regular Head Start classroom. The treatment was over a 7-month period, with pre- and post-testing using the McCarthy Scales of Children's Abilities (McCarthy, 1972), recognized as a measure of overall cognitive ability. The results indicated a considerable gain on the General Cognitive Index of the McCarthy for the *Bright Start* groups identified as mentally handicapped, and 'at risk,' while the Head Start group made only a small gain. There were also significant gains for both the experimental groups on the Quantitative, Perceptual Performance, and Memory sub-scales. The students with mental handicaps also gained on the Verbal sub-scale, thus making gains in all four areas.

Two different sets of studies attempted to replicate the results of the original with some success. The first of these was done in Calgary (Samuels, Fagan, MacKenzie, & Killip, 1987). The subjects included several groups of preschool-age children in a paediatric hospital who were identified as either pre-learning disabled, mildly mentally handicapped, or emotionally disturbed. Groups were assigned to either a *Bright Start* class or a regular pre-school program and testing was done pre-and post-treatment over 6-7 months. Measures used included the McCarthy Scales of Children's

Abilities (McCarthy, 1972), as well as two language measures. Results showed significant gains for the *Bright Start* groups on the McCarthy Scales similar to the original work.

The second set of studies (Cole, Mills, & Dale, 1989; Dale & Cole, 1988) involved 83 children with mild mental handicaps assigned to either a mediated learning classroom (ML) which used the *Bright Start* program, or a direct instruction classroom (DI) for a period of 180 days. Pre-and post measures over a 6-month period included McCarthy Scales of Children's Abilities (McCarthy, 1972), as well as a variety of language and early school achievement tests. The results indicated that the different groups showed gains in the skill areas that were the focus of their respective programs; that is, the ML group showed gains in processes of learning, as predicted, while the DI group showed gains in specific skills areas.

Another study that indicates some interesting positive results of a partial implementation of the *Bright Start* program was done in Marseilles, France, a city that has a relatively large North African immigrant population (Paour & Cebe, 1997; Paour, Cebe, Lagarrigue, & Luiu, 1993). The study included 80 children, 60 of whom attended the same school and were from immigrant, low SES families, and were thus identified as at risk for academic failure. These children were divided into two groups, a control group that was in a regular kindergarten program, and an experimental group that received two units of the *Bright Start* curriculum, Self-Regulation and Comparison, at the rate of one lesson a week over the course of a school year. The other 20 children, who constituted a second control group, were from a neighboring town and from families of mid-to-high SES. At the end of the school year, all groups were given a battery of 10 assessment measures, including school achievement and

psychometric tests, a measure of intrinsic motivation, as well as several metacognitive and Piagetian tasks. This battery was designed to test not only school achievement, but also some of the areas that *Bright Start* claims to effect (i.e., metacognition and motivation). Results indicated that the experimental group showed greater gains than the low-SES control group on almost all of the cognitive measures, as well as on the school achievement measures of general information and reading. One reading task, the decoding of novel words, showed a significant gain for the experimental group, which the authors interpret as indicating that these children had developed the motivation and metacognitive skills to persevere at challenging tasks as opposed to learning only specific information. This same group of children was followed through to the beginning of grade 2, when all students at this grade level participate in the French National Ministry of Education Examination. An analysis of results indicated that the experimental group continued to show significant gains over the control group.

Although the results of this research are encouraging, there are some problems with the study. There was no random assignment to groups. The control and experimental groups each consisted of half of two kindergarten classes in the same school. The lack of any pre-testing exacerbates this problem. Also, many of the measures used as post-tests were not standardized measures. However, the longitudinal results on the National Examination are encouraging, supporting the hypothesis that the teaching of cognitive skills can generalize to academic learning. These results are particularly impressive, given the small portion (2 units out of 7) of the *Bright Start* curriculum that was used with the experimental group.

Another set of Israeli studies (Tzuriel, Kaniel, Zeliger, Friedman, & Haywood, 1998) also reported positive findings. The purpose of the study was to look at the effect

of the *Bright Start* curriculum on task-intrinsic motivation and the development of children's 'learning-how-to-learn' skills. Fifty-one kindergarten children were randomly selected from classes in schools in similar low socio-economic neighborhoods and randomly assigned to either the control or experimental group. The experimental group were instructed in two of the *Bright Start* units (Classification and Seriation) over a 3-month period, while the control group were instructed in an Israeli Ministry of Education basic skills program over the same period. Static measures of cognitive development, visual memory, concept formation, numbers, and motivation were administered both pre- and post-treatment, while dynamic assessment measures were administered only post-treatment. DA uses a test-teach-test format with the teaching phase done in a mediational style. The *Bright Start* group showed greater improvement than the control group on all the static measures. Greater gains were also seen for the experimental group on the measure of task-intrinsic motivation. The dynamic assessment tasks revealed that the *Bright Start* group performed at a higher level overall and that they also increased their scores more from the pre-mediational phase to the post-mediational phase than did the control group. The authors suggested that this finding indicates that the *Bright Start* children will be better prepared to benefit from mediational teaching in the future. The limitations of this study are similar to those previously discussed. The authors called for more research on the sources of the effects, including fidelity of application, teacher effects and the level of mediation used by the teacher. As with the research on FIE, this body of work is showing enough positive indicators that it appears to be worthwhile to pursue further investigation.

3.3) The Impact on Teachers of Training in FIE and *Bright Start*

Although these programs were designed to develop children's thinking skills, from the outset it was clear that they also had an impact on the teachers who taught them, although there is almost no formal research to support this. Observations from the original research on FIE (Feuerstein et al., 1980) suggested that there appeared to be changes in teacher attitudes as the study progressed. These changes included teachers' increased understanding of the importance of process in relation to content in learning, and, as the teachers saw students progress, a general increase in their expectations and optimism about students' abilities to learn.

The VSB's Evaluation of Instrumental Enrichment (Kettle, 1992) also included an evaluation of the program's effects on teachers. Of 47 staff in the study who had implemented the program, 89% indicated that it had a positive effect on their teaching practice. Within this broad category, 62% indicated a positive effect on their understanding of the learning process and 53% noted that it positively affected student-teacher relationships.

Some research has attempted to look at teacher behaviours in relationship to MLE. Juliebo (1985) found significant differences in the quality of mediation between home and school. In a brief report of the research, home mediation of literacy behavior was compared with teacher mediation of the same behavior in a kindergarten classroom. Criteria for the identification of mediated learning interactions were identified. The interactions on which the study focused included the first six mediational parameters, as identified by Feuerstein (1980). In her report, the author described mediational behaviour at home and at school, and identified some major differences. The home was described as being more responsive to the child than the

kindergarten. The author suggested that the needs of the group and the demands of the curriculum interfered with the teacher's ability to respond to individual needs. This study offered no demographic information, no information regarding sample size or selection, or any details about the way the observations were done. In light of this, little confidence can be placed in these results. However, it raised the issue of the quality of the mediation that can occur in a classroom, given the complex nature of the teaching role.

One other study was found that evaluated the effects of *Bright Start* on teachers' behavior (Tzuriel et al., 1998). This research compared the mediational teaching style of 11 teachers who had been trained in *Bright Start* and had taught the program in their classroom with 11 teachers who had not had the training. An observation instrument (The Observation of Mediation Instrument; Klein, 1987) to measure mediational behavior was used to evaluate both groups. The results indicated that the *Bright Start* teachers used more mediational teaching strategies in general. Mediating for transcendence, which reflects the emphasis in the program of teaching for generalization of the processes of learning, was especially increased.

Several of the scholars (Ben-Hur, 1998; Kozulin & Presseisen, 1995; Tzuriel, 1998) in the field of cognitive education have expressed a belief that successful implementation of FIE and *Bright Start* is at least partially dependent on a thorough understanding of MLE. These same scholars also recognize that it is difficult to develop expertise in this challenging technique. Haywood (1997) suggested that some of the difficulty may rest in inadequate levels of training and post-training support and he offered some possible solutions. These ideas included: (a) exploration of different training formats; (b) ensuring that a number of teachers are trained at any one site; (c)

post-training support provided in the classroom; and (d) regular meetings of support groups.

3.4 Issues Regarding Educational Innovation

The literature on educational change is extensive. This section will highlight some of the issues regarding personal change that seem particularly relevant to individual teachers and their attempts to augment their skills by taking training in these programs. As has been described, participating in training for FIE, *Bright Start*, and the related family of programs is an individual choice in the Vancouver. These programs have not been promoted as a system-wide innovation, but rather, are simply provided as professional development options for teachers and other staff. The programs differ considerably from traditional classroom instruction, and in this way could be considered educational innovations.

The literature on educational change has identified some of the factors that motivate system and teacher change. Teaching is a profession that can be characterized, in part, by the qualities of isolation and individualism (Hargreaves, 1992; Lortie, 1975). The closed classroom, with the single teacher at the head of the class, is the traditional model for the profession. Teachers approach their role from the perspective of their individual experiences and beliefs, and individual teaching practices tend to be highly idiosyncratic. Hargreaves (1992) argued that isolation and individualism, as choices rather than habits, could be positive work place attributes, leading teachers to their unique areas of expertise. Hargreaves (1994) also talked about guilt, in its positive and negative aspects, as an emotion that is experienced throughout the teaching profession. The negative aspects of guilt can include cynicism, depression, burnout, and exit from the profession. On the positive side, guilt can be a motivator, inspiring teachers to

search for the tools they need to develop their craft and experience success in the classroom. Huberman (1992) argued that “perceived instructional effectiveness is one of the core predictors of professional satisfaction”(p. 122).

Huberman (1992) also suggested stages for the professional life cycle of teachers. Following the first two stages of survival and stabilization, he identified the next stage as experimentation. It is in this stage that teachers seek new ideas and are prepared to try different strategies in their classrooms in an effort to further develop classroom skills. Next, mid-career teachers, similar to members of other professions, tend to move into a period of taking stock and making decisions regarding future directions (Evans, 1989; Huberman, 1992). Evans suggested that it is at this stage of their career that teachers may need support to continue their professional development. This might include opportunities to identify an area of specialization, or an area in which they might make a particular contribution. It could also include encouragement to take on mentoring roles, or to pursue an educational innovation. All of these suggestions have the potential of leading to greater job satisfaction for mid-career teachers.

The literature also identifies some of the challenges that influence the outcomes of educational innovations, as well as some of the factors that support success. Teachers tend to object to top-down directives for new initiatives (Ungerleider, 1993). Hargreaves (1997) referred to this as “the obstinate problem of teachers’ resistance to imposed change” (p. 13). Teachers need to have input into decisions regarding their workplace, and increased control over such things as curriculum and budgets (Evans, 1989). Teachers are more likely to embrace innovations if they do not contradict

teachers' personal beliefs and values, and if the innovations fill a perceived need (Fullan, 1991).

Huberman (1992) argued that teaching is a craft, and as such, leads teachers to experiment with different sets of materials, and to try different teaching techniques. He suggested that as teachers achieve increasing degrees of success in the classroom, they are more likely to continue to experiment with new ideas. Following from this, professional development offerings are more likely to meet with success if they match the needs of individual teachers. This is, in effect, proposing a move away from the traditional style of in-service, where large groups of teachers come together to hear an expert, to one that is more individualized, and preferably within the teachers' workplaces.

Fullan (1996), in his discussion of systemic reform, suggested another way to support educational change. This is the development of a network, which he identified as a systematic, focused group of teachers and other professionals who work together towards school improvement. Although Fullan was discussing the goal of broad system change which would improve overall outcomes for students, this idea has merit on a smaller scale for any innovation. The network could fill a need for what Hargreaves (1997) identified as the emotional aspects of educational change. These aspects include trust, shared meaning, collaboration, and moral support. Common sense dictates that a network characterized by these qualities would be supportive of a positive climate in which teachers and innovations could thrive. However, common sense also dictates that the creation of such a network may be more easily said than done. This issue, and the related issues discussed above, all speak to the need for more research in this area.

3.5) Summary

The research in both of these programs, although not conclusive, is consistently optimistic; many of the limitations of the research noted in this chapter are common to efficacy studies in general (Sternberg, 1991). Interest in the programs continues world wide, throughout North and South America, Europe, Africa, and the Far East. The body of literature continues to grow, with evidence of use of the programs not only with students who are blind, deaf, or mentally handicapped, but also with those with mental illness, giftedness, brain injury, and autism. In the case of FIE, use has extended from the schools, to the work place to institutions for the elderly (Library of the International Center for the Enhancement of Learning Potential, 2000). Closer to home, the VLC has recently trained groups of professionals in North and West Vancouver, Richmond, Nanaimo, Duncan, and Mount Currie. This does not include individuals who have come to Vancouver for training from as far away as Saskatchewan and Texas. It seems that FIE, *Bright Start*, and the related programs are being increasingly recognized as useful tools for the development of thinking skills across continents and populations.

The effect that training in these programs has on teachers is unclear. There is some evidence that teachers develop greater skills with MLE after training. It is also suggested that the level of training and post-training support may affect the level of implementation of the programs, and the use of MLE.

Some of the factors that might be influential in teachers' interest in these programs, as well as some of the factors that might support program use, as identified in the literature on educational change, are discussed.

Chapter 4

Methodology

The research methodology was designed to generate descriptive quantitative data from as many teachers as possible who had participated in FIE and *Bright Start* training. The challenges in identifying and contacting these teachers are described below. In addition to the quantitative data generated by the survey instrument, follow-up interviews were planned for a small sub-sample of those who had participated in the survey. While the surveys were designed to generate data on the breadth of the program participants as a whole, the qualitative interview data were intended to provide the opportunity to understand in greater depth the specific experiences and insights of a number of cases taken from the larger pool of respondents.

4.1) Development and Pilot of the Survey

A short survey was developed to target the experiences of teachers trained in FIE and *Bright Start*. The goals of the survey were to gather information in four specific areas: (a) demographics; (b) training experiences; (c) program implementation; and (d) perceptions of other outcomes of training related to teaching practice. The survey was also used to identify sub-groups of respondents for the interview component of the study. The survey format included short answer and checklist-type questions, but also had room for written comments. The survey was divided into four sections, one assigned to each of the topics as noted above. Because training has been done in the district in the other programs within this program family (as identified in an Chapter 2), a space was included on the survey for respondents to add information about their experiences with those programs as well. A covering letter described the

survey and details of participation. Confidentiality was assured through the addition of a cover page that recorded identifying information.

A first draft of the survey was pilot-tested on three teachers. As a result of the pilot, the following 4 questions were added to the survey:

- Question B11 centered on the quality of the printed materials that were given to trainees.
- Questions B7, C6 and C7 asked participants to reflect on their understandings of the theoretical framework of the programs, and the theory and use of mediated learning techniques.

In its final form, the survey took about 15 minutes to complete, excluding any written comments. A copy of the complete survey package is provided in Appendix D.

4.2) Sample Selection and Administration of the Survey

The fact that training in Vancouver has taken place under different umbrellas (VSB and VLC) and over many years made it extremely difficult to identify program participants. Lists of participants were in different locations, were disorganized, and were out of date. There was also no way of identifying those who were currently teaching at the elementary level in Vancouver and those who were trained and working either with older students, in other locations or in another capacity in the school system. Thus, there was not one straightforward source of information from which to contact participants. A general distribution of the survey to all VSB elementary schools seemed to be the best solution to this problem. Though more cumbersome, this approach would allow teachers to be reached in their work place, where decisions are made about the use of these programs.

Permission for teacher participation was granted from both UBC, and the VSB. The survey was distributed early in November, 2000, to the administrators of all 90 elementary schools and annexes of the VSB, through the internal mail system. The package included a covering letter requesting distribution to trained staff members and return as soon as possible. A copy of the covering letter to administrators is included with the survey package in Appendix D. The goal was to receive all completed surveys before the Christmas break.

Survey distribution was followed-up in a number of ways:

- A target group of 37 schools was identified for follow-up. This included a group of 10 schools, known as Inner City Project schools. These schools have been identified because of high levels of poverty and other social concerns in their catchment areas, and they receive additional funding for staff and programs to serve the needs of their student populations. Another group of 8 schools that receive partial funding for additional services, and a final group that have food programs, made up the target group. This group was chosen because the remedial nature of these programs increased the likelihood of their use in these schools with high at-risk populations. Administrators of the schools were telephoned to check that the survey had been received and to encourage their distribution to staff. As several schools had not received them, a second mail-out was completed by the first week of December, and the return deadline extended until the end of January, 2001.
- Additional copies of the survey were distributed at meetings of District Resource Teachers and Inner City Project Teachers, following a presentation about the research project.
- Additional copies of the survey were mailed to District and Area Learning Services staff following a phone call to request their help in the distribution of the survey to appropriate staff in the schools that they visit.

Most of the surveys were returned through the VSB internal mail system and some were hand-delivered. The cover page was removed in accordance with confidentiality and securely stored. The cover pages from the group of participants who indicated permission to contact them for the follow-up interview were stored separately. Data were coded by question and program.

Regardless of where they appeared on the document, written comments were sorted and categorized following the survey headings of training, implementation, and outcomes. They were further broken down into additional categories relating to individual topics under these main headings. Thus, under training, comments were sorted into the following groups:

- (a) instruction and trainers,
- (b) the challenge of learning new theory and techniques,
- (c) program manuals and materials, and
- (d) post-training support.

The groups under implementation included:

- (a) experiences with implementation,
- (b) experiences with partial implementation,
- (c) experiences using a mediational teaching style, and
- (d) reasons for not using the program.

This last category was further broken down into the following groups:

- (a) materials,
- (b) time,
- (c) curriculum pressure,
- (d) isolation,
- (e) training/support,
- (f) teaching assignment,
- (g) school support,

- (h) personal development, and
- (i) particular difficulties for resource teachers.

Finally, the groups under the heading, outcomes, included: (a) general perceptions of effects, and (b) suggestions to support implementation/program effectiveness.

4.3) The Interviews

As the answers for the remaining research questions come partially from the interview data, the following section gives information about the development of the interview format, the selection of the interview participants, and a brief description of each individual interviewed.

The purpose of the interviews was to seek more in-depth information from selected candidates. To this end, a series of questions was developed from the basic survey topics with the purpose of encouraging participants to describe their experiences with the programs in detail. Topics that were expanded in the interview format included: (a) factors that influenced teachers to take the training, (b) the effects of school sponsorship on that decision, and (c) the topic of perceptions of outcomes. Themes from the survey comments, specifically, the challenge of learning new theory and techniques, and the program manuals and materials, were also included in the development of the interview questions. The interview format was piloted with one individual and was found to be reasonable in length and to yield the information desired, while allowing time for expansion of topics as needed. The same general format was followed for each interview. The interview questions and the Informed Consent Form are reproduced in Appendix E.

Interview candidates were selected from a set of categories arrived at after an analysis of the completed surveys. Of the 48 responses, 33 were interested in

participating in the interview portion of the research. This group was first divided into 3 categories: (a) enrolling classroom, (b) resource teachers, and (c) other professionals. This last group was eliminated. The interview candidates were selected from the classroom and resource teacher groups because the primary role of these two groups is classroom instruction.

The remaining 31 teachers were identified as having either training in only one program, or training in two or more programs. These groups were separated by program, with teachers who had trained in two or more programs identified by the program with which they had the most experience. Finally the groups were further divided into those who were currently implementing a program, those who had used a program in the past, and those who had never used their training. The groups were further reduced when those teachers with a close relationship to the researcher had been eliminated. A total of 14 candidates remained, and from these 14, selections were made at random from each category. If a contacted person was unable to participate within the time frame available, the next person on the list was telephoned. The end result was 7 scheduled interviews, averaging an hour each, unless otherwise noted. Interview 7 included two teachers, as described below, with a final result of 8 interview participants. They included the following:

- Interview 1: a primary classroom teacher with 5 years of teaching experience, only trained in *Bright Start* and currently implementing it. This teacher was enthusiastic about the program but was having difficulty using it consistently.
- Interview 2: an elementary resource room teacher who saw small groups and individual students for remedial teaching. This teacher had 22 years of

teaching experience, was only trained in *Bright Start* and was not currently using the program, although she had used it in the past.

- Interview 3: a classroom teacher of a special education class with 7 years of teaching experience. This teacher was trained in FIE and DA and was currently using neither, but had used FIE in the past. This interview was only 40 minutes long, and the teacher was under pressure to complete it and move on to the next task of the day.
- Interview 4: a primary classroom teacher with 11 years of teaching experience who was trained only in FIE and had never used it.
- Interview 5: an intermediate classroom teacher with 21 years of teaching experience who was trained in FIE I and II. This teacher was currently teaching FIE in the classroom.
- Interview 6: a primary resource room teacher with 17 years of teaching experience who was trained in FIE, *Bright Start*, CogNet and the two levels of DA. This teacher was currently using parts of DA but not the other programs. She had used all in the past, except CogNet.
- Interview 7: a learning assistance/English language center teacher with 12 years of teaching experience, trained in FIE and DA, and using both. This teacher was a part of a resource team and had invited a colleague who had also completed the survey to join her in the interview, which resulted in Interview 8. This team worked together using both FIE and DA.
- Interview 8: a district resource teacher for special needs students with 12 years of teaching experience, trained in FIE and DA, and currently using both.

Interviews were conducted at the convenience of the participants, and 7 out of 8 were interviewed at their school. The other one chose a coffee shop in the community. The interviews took between 40 and 75 minutes, with an average time of 60 minutes. Notes were taken throughout the course of each interview. Each one was also audiotaped and the tapes were used only to clarify the written interview notes. Without exception, all the interview participants were candid about their experiences and answered all the interview questions.

Responses to the interview questions were sorted and categorized using the headings of the interview format, as described above. Very little re-arranging needed to be done because, for the most part, the interview format was followed consistently.

Chapter 5

The Survey Results

This chapter will provide descriptive information about the participants who completed the surveys regarding their perspectives on the teacher training programs in which they were involved. The reporting of the results will be organized around the five research questions noted previously. The data are presented primarily in the form of frequency counts, ranges, and means within and across the various sub-samples of the overall sample. The original intent to conduct both chi-square and t-test analyses on the non-parametric and parametric data was seriously compromised by the low overall response rate which resulted in extremely small numbers of observations within small cell sizes. It was not possible to conduct the planned tests of statistical significance due to this violation of the basic assumptions underlying these tests. For this reason, the data are presented as descriptive findings from this restricted sample and no inferential claims of generalizability are being made to other samples or populations. While the absence of measures of statistical significance is regrettable, the descriptive data in and of themselves, along with the interview data presented in Chapter 6, offer a number of new insights into the reasons teachers take these training programs and the reasons they do – or do not – implement these approaches in their teaching.

5.1) Research Question 1

What are the personal and professional characteristics of the teachers who have taken training in these programs?

A total of 305 surveys were distributed to elementary schools and district staff. Of these, 48 (15.7%) were returned. The data show that 41 out of the 48 respondents were female. Of the 47 respondents who provided their age, 17 were under 45, 25 were between the ages of 46 and 55, and 5 were over the age of 56. Their teaching experience ranged from 2 to 39 years, with an average of 16.2 years.

Overall, the respondents were well educated. In addition to the required Bachelor Degree, 23 had a post-degree Diploma, 22 had a Masters Degree, and 19 had other post-secondary training. Because these programs were originally designed with students with special needs in mind, special education training and experience was one component of the data collection. Of the 48 respondents, 25 had some part of their post-secondary education related to teaching students with special needs or had teaching experience with this group.

Teaching experience in general was broken down into current and previous assignments by grade level. Within these categories there were three teacher groups. The first was that of the classroom teachers, that is, those teaching in a contained classroom. The second group was that of the resource teachers who were support teachers and did not have their own classroom. The final group were other non-classroom professionals, (e.g. speech pathologists, counsellors and others) who did not fit into the first two categories. When asked about their current teaching assignments, 14 fit the criteria for classroom teachers, 29 were resource teachers, and 5 were other professionals. When asked about their previous assignments, these numbers were reversed: 29 had been classroom teachers, 15 had been resource teachers, and 4 had had other professional roles.

The surveys were distributed to all elementary schools in the VSB system, but only 37 Inner City schools were targeted for follow-up. It would be expected that there would be more response from these schools. Of the 44 respondents that provided data on teaching location, 19 were from seven Inner City Project schools.

The 48 respondents indicated that they had attended a total of 114 different training sessions in the 5 targeted programs, including multiple levels of FIE and DA. The majority, 28 teachers, had been trained in two or more programs, or an average of 3.4 programs each. Table 1 shows the total numbers trained in the different programs since 1986, broken down by current teaching assignment.

Training was fairly evenly distributed over the years, beginning in 1986. The one exception to this relatively constant level of training is a recent upsurge in DA training: of the 22 teachers who provided data, 12 received their training since 1997, while only 10 were trained between 1986 and 1996. Table 2 illustrates the distribution of training by program and year.

As well as gathering data on demographics, training, program implementation and effects, the survey also provided opportunities for respondents to comment on their experiences. The written comments ranged from very brief to almost a full page and are a rich addition to the checklist data. Of the 48 returned surveys, 37 had at least one written comment, and 22 had multiple comments on a variety of topics, often written together. The comments were first sorted into the last three major categories of the survey, and were then further sorted into themes within their categories as described in Chapter 4. After the completion of the sorting process, there were a total of 132 statements under 10 major themes within the three categories. The comments will be noted as appropriate throughout this chapter and are discussed in detail in Chapter 6. They are recorded in Appendix F.

Table 1

Number of Training Sessions Participated in by Teachers Trained in Cognitive Education Programs by Current Teaching Assignment

Programs	Classroom Teachers	Resource Teachers	Others Respondents	Row Total
FIE	10	22	5	37
FIE II	3	4	3	10
<i>Bright Start</i>	7	13	2	22
DA	4	19	4	27
CogNet	4	5	1	10
Other	2	4	2	8
Column Total	30	67	17	114

Table 2

Number of Teachers Trained in Cognitive Education Programs by Year

Programs	1986-1989	1990-1993	1994-1996	1997-2000	Missing Responses	Row Total
FIE	10	8	4	14	1	37
FIE II	6	3	0	0	1	10
<i>Bright Start</i>	3	7	5	7	0	22
DA	3	3	4	12	5	27
CogNet	0	1	4	2	3	10
Others	2	1	2	2	1	8
Column Total	24	23	19	37	11	114

5.2) Research Questions 2

What were the reasons that these people chose to invest their time, energy, and in some cases their own money, in this training?

The second research question asked why teachers were interested in taking this training. Part of the answer comes from the survey questions about school sponsorship of training, which could occur in two ways. The first was through the provision of release time, which allowed teachers to attend training sessions during instructional hours with a Teacher-on-Call provided by the school to cover the participants' teaching responsibilities. Of the 108 training sessions for which data were provided, 36 were fully sponsored, and another 15 were partially sponsored in this way. The other 57 trainings were taken on teachers' own time.

The second form of support was financial aid to cover the cost of enrolling in the training programs. Up until the mid-1990s, training was either free or provided at a nominal cost by the VSB. More recently, with the training under the umbrella of the VLC, the cost can be as high as \$350. Thus, the schools' full, or even partial support in this latter incidence could be considerable. The reported data show that the schools' support has been consistent and generous: 56 of the 99 training sessions for which data were provided had enrolment fees fully covered by the sponsoring school, and another 42 had enrolment fees partially covered. Only 1 of all trainings had no school funding at any level. Of the 48 teachers, 21 received full school support for a training session, and of those 21, 6 were trained in FIE, 5 were trained in *Bright Start*, and 10 were trained in DA.

Of the 27 people who reported taking the DA training, 19 of them are currently resource room or other non-enrolling teachers. Of the 17 resource teachers who supplied answers to the survey question regarding time sponsorship, 11 were able to take the training on school own time. Of the 16 resource teachers who responded to the

question about school financial support, 13 were fully funded by their schools to take the training, while another 3 were partially funded.

5.3) Research Question 3

In what ways were these programs implemented?

The survey collected data on full and partial program use, the use of MLE, and the populations of students with whom the programs were used. In particular, the research focused on the implementation of FIE, *Bright Start* and DA. Levels of program use are reported in the following tables. Table 3 illustrates the shift in the reported levels of past and current use by all survey teachers, and Table 4 compares program use by classroom and non-classroom teachers.

Programs tended to be implemented if a teacher had taken more than one training. Eleven out of 12 teachers who were trained in FIE and who are also currently using this program, were also trained in at least one other program. The results are similar for DA. Of the 13 teachers currently using it, 11 were trained in more than one program. A total of 20 teachers of the total 48 were trained in only one program, and of those 20, only 5 are currently using their training.

Not surprisingly, these programs tend to be used with the kinds of students for whom they were designed. Of the 26 teachers who reported some use of FIE, 22 used the program with students identified as learning disabled, 17 used it in the Learning Assistance Center, and 12 used it with students with mental handicaps. The program was used with typical students by 13 teachers, and with ESL students by 16 teachers. Of the 17 teachers who reported some use of *Bright Start*, 11 used it with students with learning disabilities, 13 used it in the Learning Assistance Center, 9 used it with students with mental handicaps, and 12 used it with typical students.

The data on the size of the instructional groups with which the programs were

Table 3

Comparison of Past and Present Program Use by All Teachers

Programs	Number of participants who had implemented the programs in the past	Number of participants who are presently implementing the program
FIE	20	12
<i>Bright Start</i>	17	7
DA	12	13
Total	49	32

Table 4

Comparison of Program Use by Classroom Teachers, Resource Teachers and Other Respondents

Programs	Classroom teachers		Resource teachers		Other respondents	
	Number trained in the program	Number presently implementing the program	Number trained in the program	Number presently implementing the program	Number trained in the program	Number presently implementing the program
FIE	10	1	22	9	5	2
<i>Bright Start</i>	7	4	11	3	2	1
DA	3	0	17	11	4	2
Total	20	5	50	24	11	5

used shows that there is a strong tendency for the programs to be used with individual students and small groups. Of the 12 teachers who are currently using FIE, 9 reported using it with small groups, and 3 used it with a whole class. Of the 7 teachers currently implementing *Bright Start*, 4 used it with small groups, and 3 used it with the whole class. Neither of these programs was used on a one-to-one basis with students, while, as might be expected, DA was used mostly on this basis. Of the 13 teachers who are currently using DA, 8 did so with a single student, 2 with a small group, and 3 with a whole class.

These programs can be implemented in individual units and teachers may decide to teach only selected units rather than the entire program. Similarly, when using DA, it is possible to use one or more of the assessment instruments to give some specific information on a student rather than doing a complete assessment. Relatively few teachers chose these options. Of the 34 trained FIE teachers who reported data, only 6 reported using parts of the program, and 7 of 19 *Bright Start* teachers chose this option. Four of the 18 teachers using Dynamic Assessment chose to do a partial assessment.

A mediational teaching style (MLE) is one of the components of these programs but can be used in any teaching situation. Of 48 respondents, 46 stated that MLE has become a component of their regular teaching practice since their training experience.

Another option for use of these programs is for teachers to work in a partnership with a colleague to teach them. Out of 31 FIE teachers responding to this item, 13 had team teaching experience with the program. Of the *Bright Start* teachers, 6 out of 19

reported team teaching, and for DA, 6 out of 15 teachers reported working with a colleague to assess a student.

5.4) Research Question 4

What reasons did teachers give regarding their decisions about program implementation?

In the design of the survey, several questions were included to identify potential factors that might increase the likelihood that a teacher would put his or her training to use in the classroom. One of the acknowledged factors influencing level and quality of program implementation is found in the quality of the training (Feuerstein et al., 1980). One of the factors influencing this is the actual amount of time that trainees are in the training session. The respondents trained in FIE report the highest number of training hours. Of the 36 respondents, 32 report training of more than 30 instructional hours for each level of the program. By comparison, of 19 *Bright Start* respondents, 12 report training of more than 30 hours, and of 33 DA respondents, 16 report a similar level of training.

Over the years, the authors of both FIE and *Bright Start* have visited Vancouver and participated in training sessions. Particularly in the late 1980s and early 1990s, Feuerstein and Haywood were frequent visitors, giving lectures and demonstration lessons. The author of the CogNet program participated in two complete training sessions, and the developer of a form of DA for young children, David Tzuriel, worked in Vancouver for a year under the umbrella of UBC and trained groups in DA. He has been back to B.C. several times since to train people in other areas of the province as well as Vancouver. Of the 114 training sessions, 20 were conducted by these program authors.

On the survey, teachers were asked to give their training an overall rating of 'Good', 'Average' or 'Fair'. The results are reported by program in Table 5.

Table 5

Teachers' Overall Rating of Training by Program

Programs	Good	Average	Fair	Missing Responses	Total
FIE	20	12	5	0	37
<i>Bright Start</i>	10	9	3	0	22
DA	14	7	2	4	27
Total	44	28	10	4	86

Teachers were also asked to rate their understanding of the theoretical foundation, MLE, and the program structure, after completion of the training. Table 6 records the numbers of respondents who identified their training experiences in these areas as above average. Of the 48 respondents, 46 stated that they learned enough in their training to get started teaching the program.

One of the training recommendations of the program authors is for the provision of post-training support for program implementation. The survey questioned participants about both their access to follow-up support after their training, and their use of that support if it was available. Table 7 reports the results.

The participants in both FIE and *Bright Start* training received a teachers' guide to support program use in the classroom. The teaching materials for DA are the protocols for the individual instruments and other materials given out by the trainers. Tables 8 and 9 report on the teacher materials with regard to clarity of understanding and usefulness for implementation.

Teachers were asked to report on their reasons for not using the programs after their training. Table 10 records the responses to this question. In response to the category of 'Other,' many respondents wrote in reasons that were unique to them. These will be discussed in detail in Chapter 6.

Table 6

Above Average Rating of Understanding of the Theoretical Framework, MLE, and the Program Structure, Post-Training

Programs	Understanding of Theory	Understanding of MLE	Understanding of Structure
FIE	25	25	27
Bright Start	14	13	13
DA	17	16	14
Total	56	54	54

Table 7

Access and Use of Post-Training Support

Programs	Had Access to Post-Training Support	Used Post- Training Support
FIE	21	14
<i>Bright Start</i>	9	6
DA	16	12
Total	46	32

Table 8

Rating of Teacher Materials for Clarity by Program

Programs	Good	Average	Fair	Missing	Total
FIE	23	9	5	0	37
<i>Bright Start</i>	13	7	1	1	22
DA	8	5	9	5	27
Total	44	21	15	6	86

Table 9

Rating of Usefulness of Teacher Materials for Implementation by Program

Programs	Good	Average	Fair	Missing	Total
FIE	19	9	9	0	37
<i>Bright Start</i>	8	9	2	3	22
DA	6	7	10	4	27
Total	33	25	21	7	86

Table 10

Reasons for Not Implementing the programs

Programs	Not appropriate for my students	Do not feel adequately trained	Lack of support in my school	Lack of on-going training and support	Other
FIE	2	3	5	5	10
<i>Bright Start</i>	2	1	0	1	5
DA	0	2	0	1	2

5.5) Research Question 5

What were the outcomes of the training for teachers in terms of personal and professional change, and their perception of effects on their classroom practice?

The survey responses indicate that nearly all teachers felt positively about the results of their experiences with these programs. For example, in response to Questions D1 and D5, which asked about general effects of their training on their teaching, 35 out of 37 FIE teachers responded positively, with only 2 stating that their training had no effect on their teaching. Of the 34 FIE teachers who responded to Question D2 about perceived effects of training on their students, 30 responded positively, and when questioned about the effect on their understanding of how people learn, 36 out of 37 felt there was a positive effect. When asked if their training changed their understanding of the nature of intelligence, 31 out of 37 FIE teachers indicated that it had, the lowest number of positive responses out of all the questions. There were 19 comments written on the surveys in response to this section. As well, teachers made suggestions about ways to support implementation and effectiveness of the programs. These comments and suggestions will be discussed in Chapter 6.

Chapter 6

Interview Results

The interviewed participants, selected from a variety of levels of program use and teaching experience, included a cross-section of survey teachers and provided enlightening information and opinions about their experiences. In this chapter, their opinions will be expressed by their own voices. The comments from the survey respondents will also be included.

6.1) Factors Influencing the Teachers' Interest in This Family of Programs

The responses to the survey indicate that by far the majority of teachers received some sponsorship, both in the form of release time and financial aid, from their school to participate in training for these programs. However, teachers were more likely to get financial support rather than release time. This is advantageous for the VSB as the cost of the training at approximately \$350 per session of 5 days is less than the cost of providing a Teacher-on-Call at approximately \$125 a day. Out of the 8 interview participants, 5 reported that school support for their training influenced their decision to participate.

Comments from people who were sponsored to take the training generally indicated that the support was a positive factor in their decision. Interview Participant 5 stated: "School support was helpful at the time as I did not have much money."

Interview Participant 4, who was strongly encouraged to take FIE training with the school staff said: "I would not have done it without sponsorship." Interview Participant 7 summed up this sentiment: "Having support from your school just makes it easier."

On the other hand, there were also people who would have liked to do the trainings but

found the cost prohibitive: "I would particularly like to pursue Dynamic Assessment for Young Children at the K[indergarten] level but the cost has prevented it." Another respondent echoed this sentiment:

I would have liked to take *Bright Start* but I feel the school should provide financial assistance as it had done for FIE and LPAD. As a special needs teacher I feel that *Bright Start* would serve me well when working with mentally and developmentally challenged students.

We know very little about the few who opt to do these trainings independently, that is, without school support. Interview Participant 2, who has been teaching for 22 years and chose to train in *Bright Start* on her own, commented, "I like to be independent and take what I want. I don't want to be obligated." Interview Participant 1, who was exposed to *Bright Start* daily during her practicum and who took the training with no school support one year into her teaching career, said, "Everything just came together. I had been 'subbing' for a year and had nothing to do in the summer and it was being offered at a reasonable price, so I decided to just go for it."

The interview participants identified their personal motivations for taking the training and three main themes emerged. The first of these motivational themes, enthusiastic word-of-mouth reports from colleagues and friends, came up in seven of the interviews. These teachers either worked with a teacher who used one of the programs so that they had a chance to see it in action, or they had friends who were involved in some other way. Interview Participant 5, a classroom teacher of FIE, gave an example of this perspective:

I first heard about it from Lorna Williams; our daughters went to the same school. Then I had a good friend who was considering doing her MA on FIE, and then I heard good information about the results from a psychologist friend who was working in Israel, so I had lots of positive information from different view points.

The second theme was the search for tools to improve teaching skills and to meet the needs of challenging students. This was reported by three of the interview candidates and was also reflected in comments on the surveys. Interview Participant 6, who is a primary learning assistance teacher, reflected on what drew her to *Bright Start* and DA:

I was looking for specific curriculum items for use in the LAC with young children, and *Bright Start* seemed to fill in the gap and provided a structure to follow. With Dynamic Assessment, we don't have many assessment tools for young children, and this seemed to be just one more way to look at a child, one more way to dig deeper to problem solve.

Similarly, Interview Participant 7, an intermediate learning assistance teacher who uses FIE and Dynamic Assessment, said: "I was frustrated with the lack of help for learning disabled students and was looking for something to support them." Another comment on the survey from a teacher of a special education class: "[I took FIE training because I] wanted to have the skills to transfer to other parts of my program."

The final theme can best be described as a sense of 'fit' - the program just seemed to be a match for personal style for some of the respondents. For example, Interview Participant 8, a resource teacher for students with special needs who is trained in both DA and FIE, commented: "The focus of the program [FIE] was less on content and product, and more on process and metacognition. The process questions seemed very familiar - it just struck a chord." Again, from the young teacher who did her practicum with a *Bright Start* teacher: "It was very child-centered. I liked the way the kids came up with their own answers and the teacher accepted them; I just liked the way the teacher talked to the students. It all seemed natural, and fit with me."

There appears to be no one single reason that draws people to these programs. Rather, it is often a combination of factors and a bit of serendipity. Interview Participant 2 mirrored the words of an earlier comment when she said: “I had thought about it before and everything just came together.” For Interview Participant 3, who was working as a Teacher-on-Call at the time, taking the training in FIE was motivated by the very practical need to get a permanent position: “When I was ‘subbing,’ many of the job postings had an FIE requirement, and as I was looking for a job, I took the training to add to my qualifications.”

6.2) Training Experiences and Participants Suggestions for Training Improvement

Peoples’ reactions to their training experience were as varied as the people who took the training. Some teachers found the training exciting, while others found it challenging. The survey data showed that, for most, it was a positive experience, as noted by the rating of training in general, and the level of mastery that people felt they achieved. The comments from the surveys and the interview participants give us more insight. A sample of the words and phrases used by interview participants to describe their experiences include: “overwhelming”; “intense”; “too much information, too little time”; “validating”; and “impressed and baffled at the same time.” Interview Participant 5, who rated her training in FIE as ‘Good’ overall, described it:

It was interesting, and very good doing the exercises ourselves - we could go through the same frustrations as the students do when they do them. Very empathy-building. But it was definitely overwhelming; and some of it I still don’t get.

Interview Participant 1, who did the *Bright Start* training in a 5-day summer session, and described her training as ‘Average,’ said: “The instructor was very good, but it was not as dynamic and interactive as I expected. There was a lot of listening, and lecture-

style instruction, which I thought was very interesting because that's not what *Bright Start* is all about." Interview Participant 4, an intermediate class room teacher who took the FIE training in the early 1990s, had a negative experience:

The instructor was very directive - discussion and criticism were not a part of the training. We all struggled with the language needed to handle the concepts. Things were very structured and there was no time; questions got glossed over. The 'bridging' part was very challenging, a real stumbling block. The teaching was too fast and not helpful - a teacher would need to take more training to get it all.

Interview Participant 3 added to the above comment:

FIE was not taught well, it was more lecture than anything. I wanted to get to the materials, but all we heard about was the history and philosophical background. I enjoyed doing the work but there was not enough of it.

Whereas teachers' ratings of their understanding of what they learned during their training were generally positive, their comments again shed more light on their experiences. A sample of the survey comments from people who found the training challenging include: "I went through FIE 3 times before I understood it," and "I read Feuerstein's books and I struggled personally with the concepts." And as might be expected, there were those who had no difficulty with the material. Interview Participant 7 said: "I had no problems - it was just what I needed to hear." And Interview Participant 1, whose post-secondary education was only recently completed, said: "I had a psych degree to start with so I didn't have to learn everything from scratch. I could just add on to what I all ready knew."

Training of 35-40 hours is the standard practice for all the programs, including DA, supported by some kind of follow-up. Of 78 survey respondents who answered this question, 60 had training of over 30 hours. Although this represents a good proportion of the sample, given the comments above, it seems that there is room for

improvement, both in the actual amount of time spent in the classroom, but also in the way the training is delivered. The research participants had some interesting ideas regarding training improvement and their ideas follow:

- 1) There was a theme around organization of both instruction and materials.

Interview Participant 8 was particularly articulate on this point:

The trainer was excellent and I think he told us what we were going to do for the 5 days, but I would like a schedule or plan for the week that was written and followed. And the materials! The lack of organization of the hand-outs was distressing, crazy-making. And to be more constructive, they need to be in a more ready-to-use form.

- 2) Instruction also was an area in which teachers saw room for improvement.

Interview Participant 1 commented about the need for the trainers to use the skills that they are teaching:

Using a more dynamic, interactive teaching style - using more of the theory in the actual training, and model MLE, because you can talk about it and talk about it, but until you actually see it, it's really hard to get.

Interview Participant 4, who saw the training as challenging, offered these ideas:

They need to break down the pieces, the concepts, into smaller and more manageable steps - it scared people. I've learned that the best teaching and learning is when you work and plan together, when the learning group is invited to ask their own questions, and follow their own ideas, so that ultimately, whatever the learning is, it's a hundred times more meaningful and valuable.

- 3) Time was another area that created some concerns and people had varied opinions. Interview Participant 3, speaking about her FIE training, stated: "There was too much information and too little time. They needed to go through the instruments more slowly." Interview Participant 8 voiced a similar idea about the training format:

“Not 5 days in a row - having some days in between would allow me to absorb it better.” In contrast, Interview Participant 7 noted: “I liked the 5-day format. I really liked getting deeply into it and thinking of nothing else.” Interview Participant 8 added a suggestion that would have made the 5-day format work better for him: “Having the materials ahead of time would help, even a few days. I could learn so much more by looking them over ahead of time and then have some brain-power left over to listen.”

4) Opportunity for adequate practice was another area that participants noted as needing improvement. Interview Participant 5 referred to her FIE training and the challenge of the concept of bridging:

They need to focus on bridging more. I didn't get a real sense of this bridging business. Like, we got the idea that it was important, but I didn't quite understand what it was all about. I think if they could do more practice with the teachers who are learning it, it would help.

5) Finally, the idea of supplemental trainings, or “a yearly refresher” as one respondent put it, was suggested as a way to support training and program use. In an attempt to fill this recognized need for on-going support, the program trainers have offered post-training support, usually in the form of regularly scheduled group meetings. These have met with limited success, as indicated by the results that show that, while a majority of teachers had access to follow-up, far fewer actually used it. Although some teachers indicated that they did not feel a need for any kind of on-going support for program use, others indicated that it was very important. One survey respondent who was trained in FIE, *Bright Start*, and CogNet, said:

The trainer was available for in-class support which gave me the confidence and motivation and support to begin the program [FIE] with students. There was no in-class support for the other programs which may be the reason I do not use them.

This sentiment was echoed by a survey respondent trained in *Bright Start*, who said: “[I] felt I needed someone to watch me working with a small group.” Offering another opinion, Interview Participants 7 and 8, who were the Resource Team that worked together and used both FIE and DA, unanimously agreed: “The trainer told us he was available for support, but working with a colleague is the best follow-up.” People who had tried using DA commented about the usefulness of working with another professional. A survey respondent summed up this feeling: “LPAD is different because you could benefit from continuous support and teaming with a speech pathologist or psychologist to really be precise in your assessment.”

6.3 Implementation and Factors Influencing Implementation

There seems to be a combination of factors that support use of the programs in the classroom. Having colleagues available with whom to work and discuss problems seemed to be a consistent theme. Echoing the feelings of the Resource Team that we heard from earlier, Interview Participant 6 said of her implementation of *Bright Start*: “The support from our speech pathologist who was willing to work with me, that was the main incentive to do it.”

Another factor that was a theme among program users was seeing children experiencing success. Interview Participant 5, who used FIE in her classroom of intermediate students, talked enthusiastically about the changes she saw:

“It’s the kids and their ‘ah-ha’s’ that are great! Just seeing the kids learning about everybody, that everybody is different, everybody makes mistakes; they get to know more people, mix more easily, and all this supports their learning.”

Other respondents reflected on their own enthusiasm for the program coinciding with classroom circumstances, reflective of the serendipitous circumstances that took people into the training. Interview Participant 2, a primary resource room teacher, talked about what encouraged her to use the *Bright Start* program: "It was my own enthusiasm, a manual to follow with lessons, and students that I thought could benefit from it."

The Resource Team, Interview Participants 7 and 8, were also clear that, while being able to work together was a key factor for them personally, another key factor was having the support of their school. This support came in the form of use of resource teacher time for other than the direct instruction of skills, money for materials and training, and permission for their at-risk students to participate in FIE instead of French instruction.

For some teachers, partial implementation of the programs is all that can be accomplished. One Resource Teacher commented on the survey: "I have used the [FIE] materials intermittently - when the need and organization have allowed." Another said: "I found that parts of FIE are more useful than other parts, and in combination with other teaching techniques, mediated or otherwise, they can be used successfully." An experienced primary classroom teacher said: "I use parts of CogNet and *Bright Start* now." It seems that, as with many other teaching strategies that teachers learn, the programs simply become incorporated into the mainstream of their practice.

The teaching technique common to all the programs, MLE, is the one piece that almost all teachers indicate that they use in the classroom. Half of the interview participants mentioned that MLE was the part of their training that impacted their teaching the most, and this point came up in the survey comments as well. One survey respondent commented:

In my opinion, the mediational approach to teaching is the most important part of FIE - it changes, or enhances the interaction of teacher and student forever! The resulting focus on precise language/control of impulsivity creates an environment in which all children can learn.

Another survey respondent commented on the changes that occur in teacher behavior:

I feel more positive about my role and significant influence with students since I have begun using a more mediational approach. I teach 'less' (i.e. content) but the learning is stronger because of the cognitive approach.

Just as there were a variety of factors affecting successful implementation, survey respondents provided insight into the variety of factors that were not supportive of use. As noted above, the lack of post-training support was a factor for some people. Trained teachers who responded to the survey often reflected on a sense of isolation when they are the only people in their schools with an understanding of these programs. A survey comment noted this: "I wish my whole school used FIE. I feel isolated and the continuity of learning isn't there for my students." And more directly, another survey respondent said: "The fact that most of the staff are unfamiliar with cognitive education is also a deterrent."

Another factor was the difficulties that teachers had with the program manuals and materials. While some people had no problems with them, others found them a challenge. Several people cited the cost and limited access to materials as being an issue, but more respondents reflected on difficulties within the materials themselves. Interview Participant 2 commented on the *Bright Start* manual: "The lessons were hard to use - the lessons and the identified daily cognitive function didn't seem to match. Anyway, it didn't seem to lead to the students learning and using the function." Another *Bright Start* user, Interview Participant 6, said: "The manual was well laid out, but very labor-intensive to use, you had to make all the manipulatives for each lesson."

The comments about the FIE manual were similar, but also included comments like the following:

In general, I found that I use my own notes most often when preparing lesson plans for FIE, and the manuals to a lesser extent. The FIE manuals seem to contain too much detail - more than I could possibly cover and still retain the attention to the students.

And a comment from someone who clearly attended to details:

I was annoyed at the inconsistency in labelling that occurs often in FIE and LPAD materials. e.g. sometimes it's page b-1, other times it's 1B. Sometimes a page is called a 'learning page', whereas at different times it's called a 'training sheet.'

More from the users of DA who also expressed frustration:

I found the LPAD materials to be quite disorganized and difficult to access quickly. Most of the pages were photocopied but not arranged in a 'user-friendly' manner. The info was there if you looked long and hard enough, but it was not really conducive to 'casual' or 'novice' use.

Another survey comment summed up this problem:

I cannot over-emphasize the need for further organization of the training protocols of these programs [FIE and LPAD]. I am happy to have access to cognitive curricula, but I fear it will not be effectively used in a widespread way until improvements are made. It seems that people do not lack the opportunity to use their training, they lack the time to prepare to teach in this manner.

The lack of time was another reason that people gave for not being able to use the programs. Survey comments on this point ranged from the short: "Too many other obligations." to the more illuminating: "The program [FIE] is time-intensive; I would have difficulty using the program at the expense of more direct instruction of academic subjects." Several survey teachers were feeling pressure to teach the curriculum; a

comment illustrated this: "Currently, I am asked to teach specific skills in reading or math and there is no demand for FIE or *Bright Start*."

A change in teaching assignments can also affect use of the programs. A teacher who took the *Bright Start* training earlier in her career when she was teaching a kindergarten class, observed:

I do not use it at present because the lesson activities are not appropriate for Grade 2 and I do not have the time to design appropriate activities to teach the concepts in the lessons.

Resource teachers, and particularly District Resource Teachers who often serve several schools, had some unique problems around implementation. One resource room teacher commented on one difficulty:

The push for 'resource team' models of delivery [of service] in many schools impacts on the ways in which LAC/resource teachers are able to 'teach' as well as what they are able to teach. FIE is a victim of this situation.

And a District Resource Teacher commented: "As my caseload grew larger, I was able to be in schools only two times a week. There was no one who could present the program for a third or fourth lesson." And another District Resource Teacher similarly reflected:

The role of the DRT with large caseloads in many schools prevents the implementation of the program [FIE]. It requires a time commitment. I have offered in my main school several times but administration didn't remember. They were surprised when I asked for a questionnaire and said they didn't think anyone was trained in the school. We have boxes of materials that could be used but I am only there 3 days a week with 20 students.

As with training, teachers had suggestions to support the use of the programs in schools. Not surprisingly, many of the ideas had to do with the need to have other

teachers in their schools trained. As Interview Participant 8 said about his teaming experience: "Although we taught our own kids, we tested together and it was a huge support. I like talking about my teaching and it influences the enjoyment of FIE."

Another comment from a resource teacher using FIE:

I feel the effectiveness of my teaching would increase if the classroom teachers that worked with my students were also using a mediational approach. Given my position, I work with students for an average of 3, 40-minute periods a week. Therefore the students are exposed to traditional teaching methods for the majority of their time in school.

Interview Participant 8 had a solution for this problem: "Classroom teachers need to learn just MLE. It should be taught separately. I think non-enrolling people only should take the FIE and Dynamic Assessment training."

Administrative support is noted as a major supporting factor. One survey comment suggested the need for: "...encouraging principals to ensure FIE programs are implemented as part of an LAC program." Another suggestion from Interview Participant 5: "Make sure the principal knows about the program and even get them trained. Everyone has their own ideas about what works and we all need the same information." The idea of more publicity about the programs and their results came up in different ways from a number of participants. Interview Participant 7 spoke about sharing program information with staff members: "One colleague is intrigued just from sharing space with me. We need to get the information out, allow people to see the programs in action, and show them the results." A survey respondent suggested also sharing program information with parents by: "...producing pamphlets for parent consumption to encourage them to request the program in school [and] encouraging P[arent] A[dvisory] C[ouncil]'s to have presentations about mediated learning, etc."

Respondents felt that trained people could be useful in a number of ways to support program implementation. Interview Participant 1, who was using *Bright Start* in the classroom would like to have a resource teacher in her school trained in the program: "A trained resource person would understand what I was trying to do and could even take half my class to do a lesson while I taught it to the other half." Another idea from Interview Participant 3, which also came up in the survey comments: "We could use the people who are trained for follow-up, they could provide support and supervision for teachers that are just trained." And Interview Participant 7 was more specific about the same idea: "Trained people in each school could mentor it; we could provide information and support for others on staff just learning it."

6.4) Outcomes of Training and Program Use

Information gathered from the survey regarding outcomes of training was limited in that most were very positive in their support of the effects of these programs. Question D4, which asked, "Has training in these programs changed your understanding of the nature of intelligence?," had 6 negative responses, the most of all the questions. One explanation of these results may be found in a comment from Interview Participant 1 who said: "The training put a name to how I felt, confirmed beliefs that I already had, gave it a name and the backing of a theory." A handful of survey teachers were not so positive and expressed these feelings in their comments. One survey respondent, in a less-than-enthusiastic response to the question, "Do you feel that training in these programs increased your effectiveness as a teacher?," said: "Nothing is ever useless. I can see lots of useful principles." Another survey respondent, along the same vein, said: "It is another tool for teachers to use in their teaching - another way to reach the students." These comments contrast with those

teachers who were very enthusiastic about their experiences. The following comments illustrate this position:

FIE, *Bright Start*, and LPAD are the most useful teaching experiences that I have had. I believe I am a better teacher in all subject areas and with all grades than I would have been without this training.

Excellent programs - change your whole approach to children and their learning. Also changes you as a teacher.

For me, personally, Feuerstein's theory is the aspect of the training that has had the most profound effect on my teaching (and counselling).

Other respondents were more specific about the training outcomes. Several noted that their understanding and use of the concept of MLE had the most impact on their teaching. Interview Participant 8 speaks specifically about MLE when he said:

It had a direct effect on my confidence as a teacher. I had been a special education assistant for 3 years before becoming a teacher and it reflected what I had been doing. It confirmed my teaching practice.

Interview Participant 5 spoke about her experience with MLE:

Before I took the FIE training I think I was naturally a little mediational, but the training increases your awareness. Now I can use more creative questioning, I am more patient waiting for students' answers and I think more about their answers.

Other teachers commented on how their training increased their awareness of students' learning needs. This comment from Interview Participant 1 is reflective of an increased understanding of the differences in students' learning styles: "I understand more now about the notion of multiple intelligences so I make a point to use lots of visuals and other things like that." A survey comment also makes a reference to multiple intelligences: "I understand more now about multiple intelligences and how to

work with what people know - not just what they don't." Interview Participant 6 took a different perspective:

It just made my beliefs stronger that students need a skills base to build their learning on. It's like learning a new language, they have to be taught the vocabulary before you can go on and talk and think about things together.

Teachers also commented on how their training helped them to see students in a different and more positive light. This is illustrated by a comment from Interview Participant 6 who used DA: "It illuminates kids some how. I'm more ready to see kids as capable of learning." Interview Participant 7, who used FIE and DA, expanded on this idea:

I see a lot more kids now as learning disabled rather than lazy or cranky. I can see that things are just harder for them. Now I try to label their difficulties with cognitive vocabulary, especially for the School Based Team or for report cards.

Teachers also identified some of the specific teaching skills that they felt had been improved by their experiences with these programs. Questioning skills was one area that was noted by several respondents. A survey comment illustrated this point: "Found I asked a lot more questions that had my students giving their own opinions rather than stating mine." Another area was the development of what teachers called 'thinking', as reflected by this survey comment: "I feel I am better able to provide opportunities for my students to develop their higher thinking skills." Survey teachers also felt that their training increased their general understanding of the thinking and learning processes. Interview Participant 1 commented: "Learning more about the cognitive processes was challenging at first, but really helpful when you're teaching." And Interview Participant 7 added to this idea: "The theories of cognitive modifiability

and the cognitive functions gave me a better framework to hang ideas on about how to support change and growth for the child.”

Respondents also commented on the fact that their training spilled over into their personal lives. Interview Participant 6 illustrated this when she said: “I think about it a lot. When I’m gardening I think about cognitive processes! I apply it to myself and my family as well as my students.”

6.5) Summary of Interview Results

The voices of the survey participants brought the formal data to a more personal level. The responses indicate that it is not one motivating factor, but several factors that influence individual teachers to learn about these programs and use them in their teaching practice. The VSB has been consistent in its support of training in these programs and teachers indicate that this support is important in their decision to participate. Other factors include positive word-of-mouth-reports from friends and colleagues, a search for improvements to teaching skills, and a match to a teacher’s personality and classroom style.

Experiences with training varied from good to fair, and respondents offered several suggestions for training improvement. These included: (a) better organization of the instructional time and the materials that were used; (b) improvements to the delivery of the training including the breaking down of instruction into smaller, more manageable chunks, and the modeling of techniques like MLE by the instructors; (c) offering training in various formats to give more choices; (d) more opportunities for in-class practice of difficult strategies like MLE and bridging; and (e) specific suggestions for post-training support, including refresher courses, mentoring ideas, and discussion groups.

FIE and *Bright Start* were used in some way by about one third of the survey respondents, with a tendency for higher use among resource teachers and others who are in a support role in the schools. This was particularly true of the use of DA, which

is used only in the resource room. Participants were almost unanimous in their use of MLE, whether they were using a program or not, and there were indications that MLE alone is having positive effects on teachers' classroom practice, for instance, in the increased use of questions.

Participants discussed several factors that positively influenced their use of their training. Important factors include: (a) teaming with a colleague, (b) seeing students experience success with the programs, (c) school support, and (d) appropriate opportunity. Participants were also articulate about the factors that are not supportive of implementation of the programs. These included: (a) lack of post-training support, (b) isolation, (c) difficulties with use of the materials and manuals, (d) time limitations mainly because of pressure to teach the curriculum, and (e) changes in teaching assignments. Resource teachers experienced the above difficulties as well as time limitations because of the obligations of large caseloads, and being assigned to more than one school. Suggestions to support increased use in schools were also noted. Responses indicated a need to have more trained people in each school, thus creating more opportunities for teaming and collaboration. One solution to the issue of post-training follow-up was the use of already trained teachers as mentors to those just starting out. Another suggestion was to have the programs included as accepted practice in Learning Centers. And finally, in order to raise awareness and demand, it was felt that increased publicity in the community about the nature of the programs and their suggested benefits for students would be helpful.

Training in this family of programs has had an impact on many of the teachers who participated. Teachers report a sense of improved teaching skills, an increase in positive attitudes towards students and their ability to learn, and more awareness of students' learning needs in general.

Chapter 7

Discussion

Although the respondents to the survey represent a small sample of a group of teachers who have added these cognitive education programs to their teaching repertoire, the sample appears to have included a range of teachers in terms of their background and involvement in these programs. In addition to teachers who were enthusiastic and in full support of this shift from a traditional to a more cognitive approach to learning - the ones who were more likely to respond to the survey - the sample also attracted those who had never used their training, and who had no commitment towards any of the practices about which they had learned. It also included those who taught the programs daily as well as those who had only partially implemented them.

For the most part, the survey teachers who learned about these programs and used them in their classrooms did so independent of any external requirement. Unlike other recent province-wide attempts to effect changes in the classroom (e.g., the Year 2000 initiative), the implementation of this family of programs in Vancouver schools is based on the thoughtful decisions of individuals. From this perspective, the level of use of FIE and *Bright Start*, while seemingly low, with about one-third of trained teachers currently using their training, is noteworthy. It is also noteworthy that it is resource teachers who are more likely to be using FIE with small groups or individuals, rather than classroom teachers using it with their whole class. *Bright Start* is more likely to be used in regular classrooms. Thus, it seems that both programs are being used with the students for whom they were intended - in the case of FIE, with students needing the

extra help of the Learning Center, and in the case of *Bright Start*, as early intervention programs in the classroom. These teachers have independently sought and found tools that are significantly different from the regular curriculum to supplement everyday classroom practice for their students that have learning needs.

Just over half the teachers trained in DA are currently using it, and it is used almost exclusively by resource teachers, as would be expected. The upsurge in training in DA since 1997, and the increased school support for this type of assessment, is likely the result of the reduction of school psychology and speech pathology services in the district during this same time period. This has encouraged schools to focus on alternatives, including supporting their resource teachers in the development of additional skills in the area of assessment. Training in DA might be seen as one of those skills to help fill the gap and is, in many ways, a positive alternative to formal assessment. It gives the teacher more information to support the development of a remedial program, and may, if the intervention is successful and the student begins to progress satisfactorily, avoid the need for formal assessment at all.

The literature on the effects of training on teachers was limited, but the findings of this research provide some corroboration. Feuerstein (1980) stated that many of the teachers in the original efficacy research reported that their expectations of student learning potential had increased, and that FIE techniques had been incorporated into their classroom. This is also reflected in the VSB's report (Kettle, 1992) on the use of FIE in the district, which showed that many teachers felt that FIE had a positive effect on their teaching practice. This research indicates similar findings. Some teachers reported that they saw their students as generally more capable following use of the programs in the classroom. Others reported seeing students' learning difficulties in a

more positive way. The majority of teachers reported use of MLE in their classroom practice.

The use of these programs in the classroom could be considered as a form of educational innovation in the classroom. Educational change, in the broad sense, has proven to be a complex, multi-factorial task, and one of the considerations must be the system of values and beliefs that are held by those in the education system (Fullan, 1991). Fullan (1991) suggested that when teachers are dealing with changes to their beliefs and teaching approaches, on-going support is needed throughout the implementation process. We have seen that working with these programs involves a considerable shift from traditional beliefs about learning and teaching. These programs represent a process-oriented approach where the teacher must use a teaching mediational style. Adequacy of the initial training experience, as well as post-training support, has been recognized as a necessary component of full implementation of these programs (Haywood, 1997). This idea was reflected in the responses of the survey participants. Post-training support was very important for some of the respondents, and suggestions were offered for its' facilitation.

Evans (1989) suggested that teachers in mid-career could benefit from system support to continue their professional development and maintain their general satisfaction with the course of their career. Many of the respondents in this research who, on average, were 16 years into their teaching career, indicated that the support of the VSB was a positive factor in their decision to take training in these programs.

Teachers in this research were drawn to these programs by positive reports from colleagues, by a search for more teaching tools, and by a sense of match to their personal teaching styles. There was no single factor that influenced all of the

participants. In keeping with the concept of individualism in the teaching profession (Hargreaves, 1992), it was a personal decision. Teachers reported that implementation also relied on many factors that were unique to the individual classroom.

7.1) Limitations of the Research

A major limitation of this research is the sample size, although as mentioned earlier, this was offset by the fact that the sample was representative of both teachers with single and multiple trainings, as well as teachers using their training at all levels, from full implementation, partial implementation, and those who did not use their training at all. Related to this is the fact that the survey teachers were self-selected, that is, the survey did not come to their mailbox, but had to be picked up from their school administrator. It is likely that those who went to the effort to do this were teachers who had something to say about their experiences with these programs. However this self selection was also present in these teachers' decisions to take the training in the first place, making them a unique group from the start.

The survey instrument in its checklist format was limited in the information that it could gather. To gather a wider range of responses, it may have been more advantageous to have used a scale for the questions that elicited teachers' opinions about the quality of their training rather than the 'Good', 'Average', and 'Fair' response options for those questions. This is also true for the final section of the survey, which focused on training outcomes.

As a resource teacher in Vancouver for over 10 years, and as a participant and trainer involved with these programs, I am acquainted with many of the teachers who use these programs. To limit the effects of this, procedures were in place to ensure participants' anonymity, as described in Chapter 4. Potential interview participants

were carefully screened and any colleagues with a close working relationship to me were ruled out.

Having worked closely with these programs and teachers who are using them, I am biased in their favour. My experiences have led me to believe that this family of programs has great potential in helping students at-risk for school failure to avoid that outcome. But because I also understand first-hand the difficulties of implementing these programs in the form that the program developers had in mind, I saw one of my tasks as a researcher as analyzing objectively what other teachers had to say in hopes of coming up with some innovative solutions to the problem of uneven implementation rates that plagues these programs. My close involvement allowed me to consider the data from a more knowledgeable and realistic perspective while at the same time recognizing the potential for bias.

7.2) Implications of the Research

This research has shown that the decision to take training in this family of cognitive education programs is an individual affair, and that the training in its one-size-fits-all format is not satisfactory for everyone who participates. Implementation and perceptions of outcomes are also an individual affair. However, it is clear that there is a small group of educators who feel positively about their experiences, and from the limited indications of this research, those experiences have lead to improved classroom practices. With a broad brush, then, continued support and use of these programs can be recommended but not without some further considerations.

Although this research represented a small sample of teachers trained in these programs, and cannot be generalized in any way, there are some implications that can be drawn from it. The specific implications of this research appear at several levels.

The first of these is at the level of the sponsoring agency, the VSB. Although the Board does not actively promote these programs, it continues to provide valuable support for teachers who are interested in them. We have seen individual teacher's accounts of how their experiences with these programs affected both their knowledge and their skills base in positive ways. We also saw that the programs are being used with students for whom the programs were intended, that is, those students who may particularly benefit from the development of thinking and learning skills. These are positive outcomes, albeit for a small group of teachers, and indicate that on-going support to teachers interested in these programs is likely to support positive classroom returns. However, to maximize these outcomes, the VSB could consider several strategies. The first of these would be to explore ways to increase awareness in the district regarding the potential value of these programs. Positive word-of-mouth reports from colleagues was one of the main motivating factors that brought people into these trainings, and increased publicity might help to increase the number of trained people in any given school, which in turn would support use through the potential for increased collegiality. Encouraging active administrative support for teachers who want to use the programs in their classrooms would also help increase use of the programs in schools.

Another area to consider for optimization of outcomes is the continued encouragement of training and post-training support in DA for learning assistance, resource teachers, and others in supportive roles. The recent increase in resource teachers trained in DA as indicated by survey data is positive. DA gives these teachers another tool to use in the development of appropriate remedial programs for at-risk students and thus may decrease the need for more costly interventions such as formal psycho-educational assessments. However, if this alternate form of assessment is to

have value outside of the individual classroom, other members of the school staff, including the resource team, need to be encouraged to be knowledgeable and supportive regarding its use.

Implications of this research are also indicated at the training level. As stated in Chapter 2, little has changed in the training format of these programs since training began in Vancouver, and a similar format is still used throughout North America (Haywood, 1997). It may be time for a systematic review of these practices in light of continued uneven levels of implementation. The suggestions of the survey teachers in this regard are worth a closer look. Their ideas about the delivery of training in an organized and systematic manner, using the strategies that are being taught, and allowing adequate time for practice of the new strategies, are simple ideas that would be easy to put in place. Another idea, of offering a variety of formats to suit different learning styles, would also be relatively easy to implement. The content of these programs can be challenging, especially to teachers who have little background in the theories of cognitive education. These suggested changes, along with increased sensitivity to potential pitfalls for first time participants, might go a long way towards ensuring a more successful training experience for all.

The importance of post-training support is recognized in current training procedures but it is an idea that has proven to be difficult to implement successfully. Follow-up may need to be included as an integral part of the training. That is, part-and-parcel of a teacher's training experience in any of these programs would include an expectation to participate in some sort of post-training support activity for a given period of time, perhaps a year, after training. This support might be in the form of working with a colleague in a mentoring relationship, or participating in an interest

group. As suggested by the survey respondents, volunteer teachers who are successfully using the programs could staff this kind of follow-up.

A third area that appears to need some attention is that of the training materials and the teacher manuals. For participants to receive a well-organized package of support materials during training is not an unrealistic expectation and again, should be relatively easily accomplished. The teacher manuals, while also coming under criticism, are not so easily changed. To suit the variety of personal styles of program users, a concerted effort could be put into collecting teacher-made materials from all available sources to put together into supplemental resource packages. This might be a task that would interest a program follow-up group.

In addition to offering the standard training in all of these programs, it might be time for trainers to consider the development of a training program that focuses only on MLE. According to the survey data, it seems that this is the one piece of the different trainings that has a consistent impact on those trained. It could give teachers some specific instruction regarding the art and science of classroom teaching in a mediational style.

One of the shortcomings of these programs is the lack of objective procedures for the evaluation of student progress. Providing suggestions for quick and teacher-friendly assessment tools as part of the training would be one step towards the remediation of this problem. This kind of assessment would not be looking at program efficacy, but rather at the progress of individual students.

One of the goals of the training agencies needs to be an increase in public relations activities. Information needs to be disseminated to the various potential user groups, for example, parents, pre-service and new teachers, learning disability

associations, and preschools. This could be done through broader distribution of descriptive printed materials and the use of volunteers to give presentations to interested groups.

A third group that might benefit from the implications of this research is the international cognitive education community. This group has begun to ask questions about program implementation levels (Haywood, 1997). Any improvements to training, materials and teacher manuals, and provision of post-training support can only be helpful in increasing the use of these programs. The recognition and study of the significance of MLE in Europe, North America, South Africa, and Australia has also increased over the past few years, as witnessed by the growth of associations and other organizations devoted to this topic. MLE, as a teaching style, has potential for broader application than the programs themselves. An effort needs to be made to get more information about MLE into teacher education programs, thus giving new teachers another option in the development of their own teaching styles, one that is supportive to the growth of students' thinking skills.

Finally, this research has implications for teachers, the front line users of these programs. Whether teachers use the programs in the classroom or not, there seems to be the possibility of some significant benefits of training to teachers' general confidence level in the classroom and their understanding of how their students learn. Understanding and teaching thinking **processes** is another tool for the tool kit and one that is frequently neglected in regular teacher training. For resource teachers and other support staff who work primarily with students who are already showing signs of significant learning difficulty, understanding and using DA would be very useful in their search for ways to increase success for these students. However, as has been seen

from the various participant comments, isolation is a deterrent to continued use. To avoid this pitfall, it would be helpful if teachers participated in training as a school group, or at the very least, with a colleague. Training together and taking their new skills and information into the classroom simultaneously would increase the likelihood sharing and collegiality at the school level.

7.3) Suggestions for Future Research

I see three main directions for possible future research. The first of these has to do with an examination of what motivates individual teachers to participate independently in these training programs. This small group of survey teachers has given us some hints in this regard. In the consideration of any educational innovation, an increased understanding of what factors encourage teachers to invest themselves in its' implementation would be helpful in supporting success. Because training in these programs includes developing an understanding of some ideas about learning and intelligence that differ from the traditional, it could provide fertile ground for the exploration of values and beliefs about these topics and how they might be influenced.

A second direction for further research is in an examination of training practices. Some questions might be: (a) What are the characteristics of training that would support program implementation; (b) How effective are current training methods at altering traditional belief about learning and intelligence; (c) What role does post-training support play in program implementation; and (d) What forms of post-training support are most effective in program implementation? Experimentation with alternate forms of training delivery would also be a logical next step.

A final direction for further research would be in the field of outcomes. As we have seen in Chapter 3, there is a considerable body of literature that supports the positive effects of these programs, but little on their effects on teachers. This research has reported teachers' beliefs that their training has had some generally positive outcomes for their teaching practice. We need to know more about these outcomes, both in terms of replication, and in the exact nature of the effects. Another area to examine is the effect of MLE alone on teaching practice. For instance: Does a teacher's training in MLE alter the quality of classroom instruction? Does it have any measurable effect on student performance or on classroom atmosphere?

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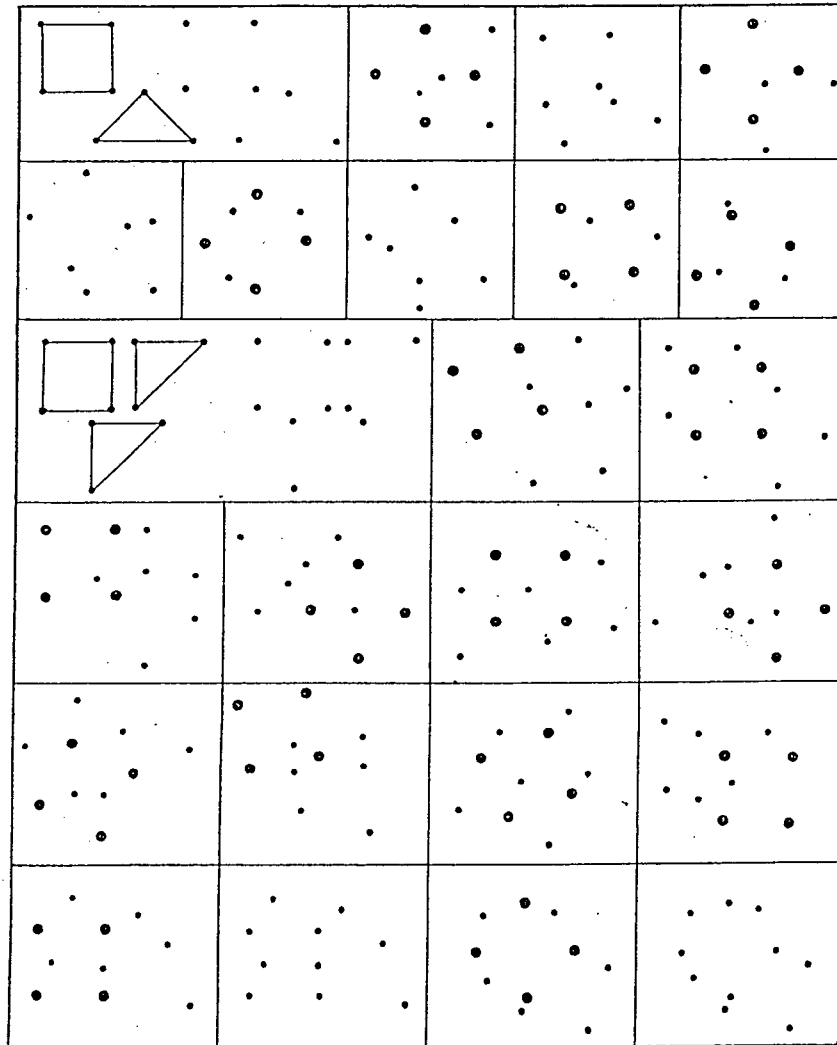
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Appendix A

Sample Pages From the Units of FIE

Organization of Dots



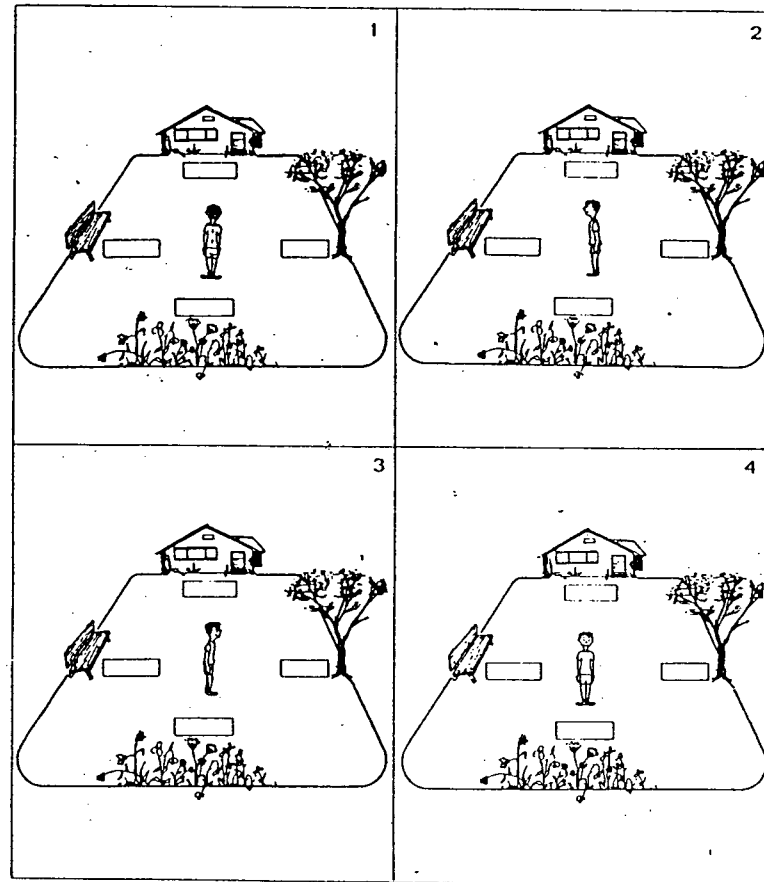
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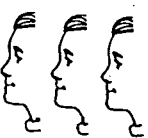




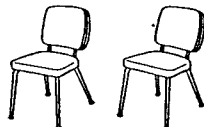


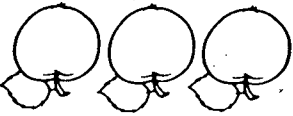



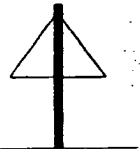
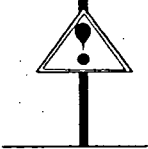
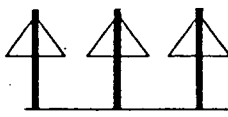
Orientation in Space



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OS
1
3

Comparisons

		
direction number color size form	direction number color size form	direction number color size form
		
direction number size	direction number size	direction number size
		
direction number form	direction number form	direction number form
		
direction number color form size	direction number color form size	direction number color form size
		
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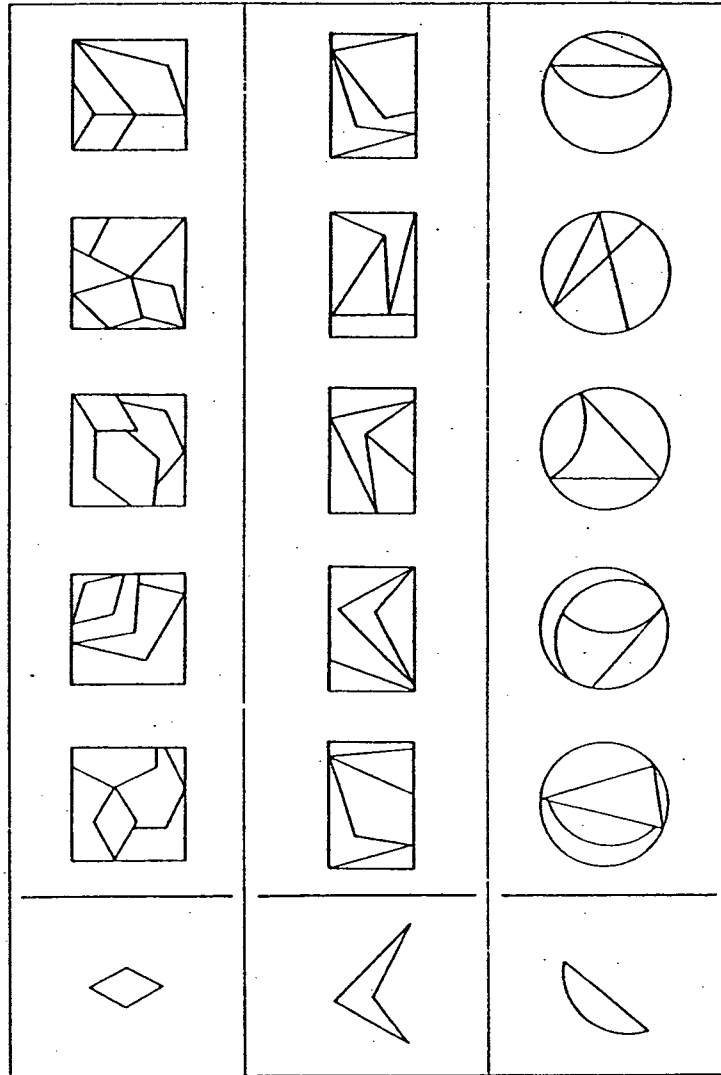


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Comp
10

Analytic Perceptions

At the left of each row is a part that is hidden in each of the complete designs in that row.
 Locate the part in each design and color it. Note: In the design, the part may appear in an
 orientation different from that of the model.



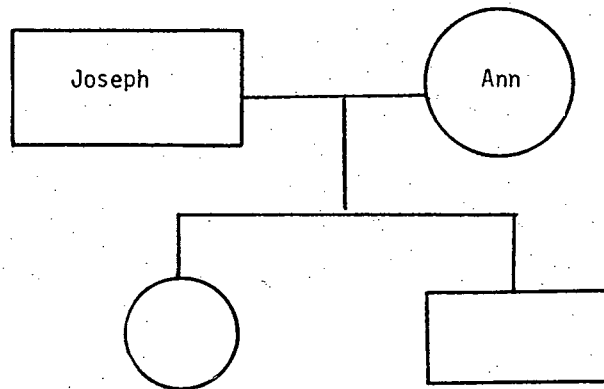
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AP
 4

Family Relations

A sister was born to Dan and her name is Dena.

1. Write the children's names in the diagram.



Dan's parents now have _____ children.

The first _____.

The second _____.

2. Which names are written in the rectangles of the diagram?

_____, _____

Which names are written in the circles of the diagram?

_____, _____

We use a _____ as a symbol for male and a _____
to symbolize female.

3. When Dan talks about Dena he says "my sister".

When Dena talks about Dan, she says _____.

When _____ talks about _____ he says "my wife."

When _____ talks about _____ she says _____.

_____.

Temporal Relations

2



A pigeon flies at a speed of 15 miles (24 kilometers) per hour.
A bicycle travels at a speed of 15 miles (24 kilometers) per hour.
Which will arrive first on a trip from San Francisco to Oakland?

Why? _____



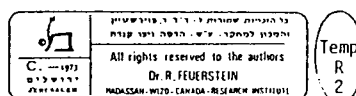
Here are the two paths taken by Mike and Jane. Which one took the longer path?



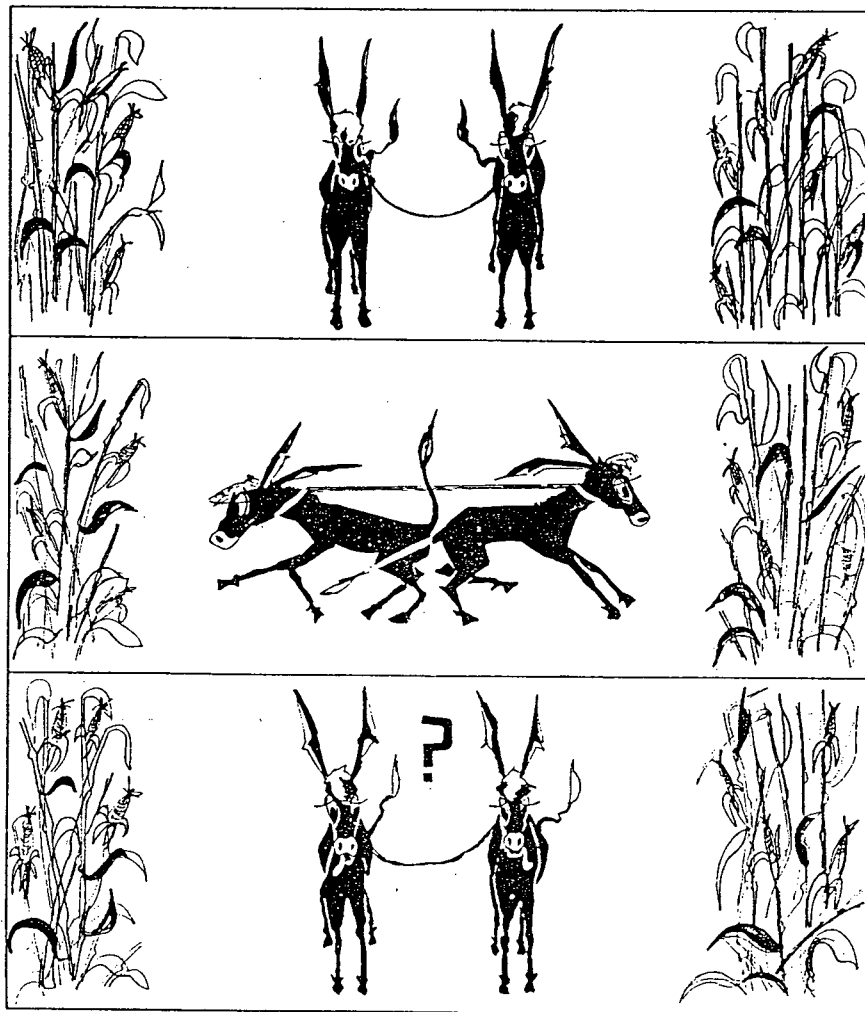
Mike




Jane



Illustrations



Cartoons - 2a


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Appendix B

Sample Pages from the Bright Start Units

Self Regulation

Lesson 9

COGNITIVE FUNCTIONS

1. SELF-REGULATING ACCORDING TO INSTRUCTIONS
2. LABELING RULES AND BODY PARTS
3. COMPARING

RATIONALE

The purpose of this lesson is to introduce the children to a new, more challenging game in which the signals for self-regulation are slightly more specific than the clues used in Fast and Slow. Since the children have learned to control their gross motor activity — the speed of their walking or body movements — they are ready to work on regulating finer physical movements.

MAIN ACTIVITY

a. In this lesson the children will play a game of Busy Bee. They will make circles on the floor with tape or preferably with lengths of rope. Each child will stand in a circle and follow your directions about what body part to put on the circle. For example, you might say, "Put your arm on the rope." When you say, "Take your arm off the rope," the children will return to their original standing position. When "busy bee" is called — several times during the game — the children will move from one circle to another.

b. Ask the children what game they played in the classroom on other days, and how they knew how to play it. (*We knew the rules.*) Tell the children that they will learn a new game, and explain systematically the rules for Busy Bee. Discuss and provide labels for various familiar body parts. Use terms that the children are most familiar with — for example, *leg* rather than *thigh* or *calf*. It might be helpful to use another teacher or a child to demonstrate how the game is played. Ask and elicit questions about the rules.

c. Hand out the ropes and, if necessary, help the children make circles. Point out that the game can begin when all the children are standing inside of their circles. Play Busy Bee as described, helping the children to place body parts on the circle and find new circles as necessary.

d. After playing the game, elicit the rules followed and the materials used. Discuss any problems or disruptions of rules that occurred. Ask whether the children thought that Busy Bee was easy or difficult to play.

e. Compare Busy Bee with Fast and Slow with respect to rules, self-regulation, difficulty, and enjoyment. Explain that the children will be playing Busy

Bee for several days now and elicit why — so they will learn the rules by practicing.

VARIATION

Introduce and play Busy Bee as described, naming smaller body parts such as fingers, toes, nose that require the children to use finer physical control.

GENERALIZING ACTIVITY

Have the children show how they control their behavior or specific parts of their bodies when doing such activities as drinking out of a glass or using other utensils. Have them name the body parts used for each activity.

BRIDGING DISCUSSION

Elicit and discuss school activities or games in which the children have to control specific parts of their bodies. Examples include stringing beads, using blocks, and drawing.

Discuss other contexts in which one needs to be able to control specific parts of one's body. Examples include walking, riding a bicycle, eating, and getting dressed.

OTHER BRIDGING DISCUSSION

School:

Home:

Peer group:

Other:

COGNITIVE MASTERY CRITERION

Each child should be able to put two body parts, one after the other, on the rope or circle when instructed to do so by the teacher.

Number Concepts



Lesson 10

COGNITIVE FUNCTIONS

1. UNDERSTANDING CARDINAL NUMBER
2. LABELING — NUMBERS

RATIONALE

This lesson focuses on strengthening the children's understanding of cardinal number and giving them practice at using numerals as labels for groups of items.

MAIN ACTIVITY

- a. Clear a large area of the classroom and assemble a large number of blocks in a heap.
- b. Tell the children to take blocks from the pile and put them in piles of two, three, four, or five. If necessary, construct a model pile. It may be important to put mats down so piles can be kept separate. After the children are through, ask how they know each pile has "x" blocks. Count each pile to demonstrate.
- c. Have the children return all the blocks to a heap in the middle of the table or floor.
- d. Assign another number of blocks to be piled.
- e. Keep going through the procedure until the children seem to understand it and know how to count to make sure they have the correct number of blocks.

VARIATIONS

Buttons or beads can be used instead of blocks. Children could also be sent individually after numbers of blocks. For example, send one child after three blocks, and have the rest of the group count them when she or he comes back. If she or he makes a mistake, discuss the error and send her or him back to replace some blocks or retrieve more. Discuss what the child could do to assure accuracy.

GENERALIZING ACTIVITY

Send the children to get different numbers of items in the classroom such as four pencils, two cups, or three beads.

BRIDGING DISCUSSION

Ask questions about numbers, and verify with pictures when possible. Discuss what the children did to find out how many. (*We counted.*)

- How many eggs does a hen lay at one time?
- How many tails does a hippopotamus have?
- How many trunks does an elephant have?
- How many eyes does a monkey have?
- How many arms does a teacher have?
- How many knees does a baby have?
- How many wheels does a tricycle have?
- How many noses on a three-nosed troze?
- How many corners on a table?
- How many paws on a puppy?
- How many wheels on a car?
- How many corners in a room? in a window? in a door?
- How many legs on a giraffe?
- How many toes on a foot? fingers on a hand?

OTHER BRIDGING DISCUSSION

School:

Home:

Peer group:

Other:

COGNITIVE MASTERY CRITERIA

When asked a question such as, "How many books on the table?" each child should be able to give the correct number and to say that he or she counted to find out how many.

Comparison



Lesson 10

COGNITIVE FUNCTIONS

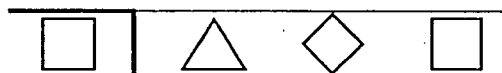
1. UNDERSTANDING CONSTANCY/CHANGE
2. COMPARING

RATIONALE

The purpose of this lesson is to help the children use their knowledge of comparing in a new format.

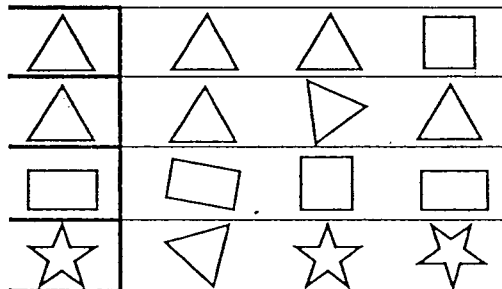
MAIN ACTIVITY

a. Draw or cut out shapes to make the following arrangement of figures on the chalkboard or construction paper.



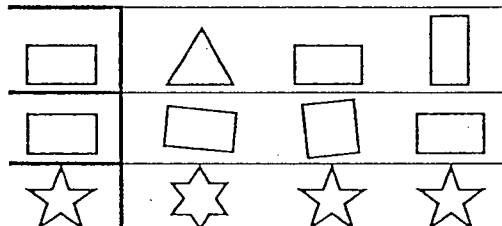
Ask the children where they think the model is. Lead them to see that the way to compare is the same, that is, there is a model to use for comparing shapes. They should compare left to right. Help them see that the shapes are the same shapes even when turned sideways.

b. Model the process of comparing by thinking aloud as you compare each of the three figures to the model. Ask the children to help you decide what you will look for and determine what its characteristics are. Compare each shape to the model. Then draw the following rows of shapes.



Help the children by discussing the new forms and any difficult points. If the children have trouble dealing with a new model in each row, it might help to have them cover up all rows except the one on which they are working at the moment.

c. Draw the following rows of shapes.



Help the children compare each row by asking what the model is for that row, what they are looking for, how to look carefully, and so on.

VARIATIONS

Have the children collaborate to produce their own models and rows of shapes or objects. Have them explain how they expect other children will compare the items or shapes.

GENERALIZING ACTIVITY

Ask the children what strategies they would teach other children who were going to do the comparison rows the children have created. Strategies should include going left to right, looking carefully, and counting.

BRIDGING DISCUSSION

Help the children think of and discuss other contexts in which they knew some things about a problem or task but also had to figure out exactly what to do. For example, if the children know how to play a certain kind of game, they can figure out some rules for a similar game; if they know how to do a jigsaw, they can figure out how to do a specific puzzle.

OTHER BRIDGING DISCUSSION

School:

Home:

Peer group:

Other:

COGNITIVE MASTERY CRITERIA

Each child should be able to (1) explain how to do a comparison and (2) do a model and row comparison in the new format.

Role Taking

Lesson 8

COGNITIVE FUNCTIONS

1. ROLE-TAKING
2. HYPOTHETICAL THINKING

RATIONALE

The purpose of this lesson's activities is to help the children understand that just because they like something, it doesn't mean that other people like it, too.

This lesson moves into the social realm and addresses the fact that different people feel differently about certain actions.

MAIN ACTIVITY

a. Bring in pictures of different pets. Ask the children whether they have pets, and what kinds of pets they have. Have them describe their pets and what they like about them. Ask the children what activities they do with their pets, such as going for a walk with a dog or riding a horse.

b. Discuss ways to be nice to a pet, such as petting it. Ask the children about the responsibilities of pet-care such as giving water and food to the pet, cleaning its cage, and washing it. Ask the children whether they think pets like being washed. Ask what would happen if someone forgot to feed a pet.

c. Discuss ways in which a pet can be hurt, for example, by having its tail pulled. Ask which pets may like to be in a cage or need to be in a cage — birds and hamsters; which pets want to be in water — fish; which pets want to run around freely — cats and dogs. Ask whether it is a good idea to try to put a dog into a hamster cage. Ask why it is not a good idea. (*There is not enough space.*) Discuss how a pet might feel if not treated properly and how it might feel if treated nicely. Elicit some clues that let the children know how a pet feels. (*A cat purrs; a dog wags its tail.*)

VARIATION

Bring in two very different pets such as a turtle which has a protective shell and a hamster which likes to sleep during the day. Have the children pet them. Proceed with the discussion as above.

GENERALIZING ACTIVITIES

a. This lesson would be a good time to visit a zoo, a petting farm, or a kennel. You might ask an animal

keeper such as a farmer or rancher to visit the class and talk about what certain animals like and do not like.

b. Using dolls, animal puppets, or other toys, have the children act out the following types of scenes:

- (1) being nice to the puppet, by hugging it, or shaking its paw, and
- (2) not being nice, by hitting it, or throwing something at it. Discuss why they and others prefer that nice things rather than bad things happen to them.

BRIDGING DISCUSSION

a. Discuss with the children how they would like being a pet. Ask them if they would like to sit in a cage all day, or have to go for a walk on a leash. Discuss other things that they might see as fun, but that others might dislike or be harmed by.

b. Discuss ways to hurt somebody and ways to help make somebody happy. Hitting other children, for example, is hurtful, but sharing toys is helpful. Point out ways in which teachers and parents try to make children feel good, such as serving a snack or lunch, and playing games with them.

OTHER BRIDGING DISCUSSION

School:

Home:

Peer group:

Other:

COGNITIVE MASTERY CRITERIA

Each child should be able to name one behavior that will hurt a person or animal and one that will make a person or an animal happy.

Classification

Lesson 12

COGNITIVE FUNCTIONS

1. UNDERSTANDING CLASS INCLUSION
2. GATHERING CLEAR AND COMPLETE INFORMATION — PRECISION AND ACCURACY IN INPUT

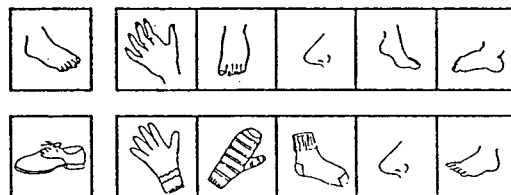
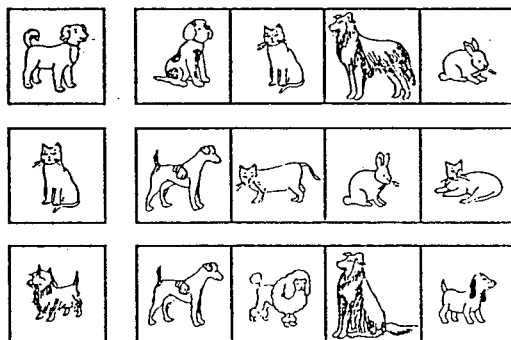
RATIONALE

The purpose of this lesson is to give the students practice in thinking of classes of objects as being composed of subclasses. For instance, the class of dogs is composed of big dogs, small dogs, puppies, poodles, collies, and so on.

MAIN ACTIVITY

The main activity involves two Fun Sheets on which each line is examined according to the teacher's instructions. Suggested variations use the same format but different pictures.

- a. Provide copies of Fun Sheets 1 and 2, found on pages 20 and 21, and crayons or markers. Discuss the rules for Fun Sheets: (1) Wait for instructions, and (2) Listen to instructions carefully.



- b. Discuss the characteristics of Fun Sheet 1. Then do Fun Sheet 1 according to the following instructions:

While pointing to the top row, ask, "In the first little box, what do you see? (*a dog*) In the boxes beside it, circle (or mark an X on) two more dogs." Discuss looking strategies, counting 1, 2.

While pointing to line 2, ask, "What's in the box? (*a cat*) In the boxes beside it, find and mark two more cats." Discuss which ones the children marked and why.

For line 3, ask, "What's in the box? (*a dog*) On the same line, mark one more dog." Ask, "How did you know which one to mark?" Point out that it really did not matter since all the boxes had dogs.

Have the children use a different color to mark two other dogs, ones with long hair. Discuss how the children knew what to do.

- c. Have the children do Fun Sheet 2 following these instructions:

Line 1: Have them identify what is in the small box. Then, mark another foot in the row. Discuss how many feet there are on the line. Did it matter which other foot they marked?

Point out that a foot is a part of one's body. Have the children use a different color to mark another body part. Refer to the Simon Says game or to Busy Bee in the Self-Regulation Unit and ask, "What's a body part? What game have we played that used different body parts?" Then ask the children which picture they marked. Is a nose a body part? Is a hand a body part? Did it matter which one you marked? (*No. Both are body parts.*)

Line 2: Ask the children to mark another shoe. (*There is none.*) Then, have them mark two other pieces of clothing. Discuss which two they selected. Have them name some other pieces of clothing that were not on the list.

VARIATION

The series of exercises can be used with different stimuli, such as blocks, pictures from magazines, or little objects. The structure of the task is as follows: Give each child instructions to find one more or two more items like the model. Make sure that the model is not exactly like the items to be retrieved. Use base-level concepts such as "block," "jacket," "shoe," "book," and also broader, more general concepts such as "pieces of clothing" and "toys."

Sequences and Patterns/Seriation

Lesson 12

COGNITIVE FUNCTIONS

1. FINDING A RULE OR PATTERN
2. SEQUENCING
3. USING A MENTAL IMAGE

RATIONALE

The focus of this lesson is on finding or discovering the rules and then saying them in words. The children are asked to look at a sequence and reconstruct it from memory. Lesson 10 required only recognition memory; this lesson involves reconstructive memory based on a rule.

MAIN ACTIVITY

a. Paste four or five strips of construction paper onto a piece of paper, arranging the strips in increasing or decreasing order. Have available similar materials for the children to use to reconstruct the sequence.

b. Make one or two other models to show the children. The basic activity is for you to show the children a sequence, hide it, and have the children reconstruct it from memory. In principle, the children have to remember only whether the strips get smaller or larger. This distinction requires a little knowledge of the difference between left and right, because whether a series gets bigger or smaller depends on where one starts. The important knowledge, however, is how to construct a sequence that is ordered according to size, NOT that the left-right dimension be mastered.

c. Have the children find out the rule for each sequence you show them, and say it in words before they reconstruct the respective sequence. The rule can be verbalized as "the sequence gets bigger" or some paraphrase.

d. Discuss with the children the way they remembered how the sequence looked — either they had an image in their mind or they remembered that the biggest one was first. Make sure they understand that a sequence is easier to remember if they have a special way to remember it — a rule for making the sequence.

VARIATION

Use any readily available materials in the classroom that are interesting to the children. The important point is that, from seeing the model, the children can generate a rule that the objects get larger, with each one being larger than the last. This rule should help them construct sequences regardless of materials used or the length of the sequence.

GENERALIZING ACTIVITY

When the children are not present in the classroom, arrange some sets of objects at their eye level. These sets can be any toys that have graduated sizes such as nested boxes, disks or rings on a stick, or Cuisenaire rods. Have some sets arranged according to increasing or decreasing size and others randomly arranged. Take each child on a walk around the classroom to look for a sequence of objects that gets larger or smaller. When the child finds a set of objects, ask whether they get larger.

BRIDGING DISCUSSION

a. Ask the children about some other rules that help them remember things. For example, saying something over and over (rehearsal) helps you remember it. Saying the name of an object such as "circle" or "square" helps you remember it. In general, rules help you know what to do, as in playing games.

b. Discuss the classroom rules and their value.

c. Discuss the need to use rules in other contexts such as eating, shopping, driving, or playing games like ball or tag. Knowing rules also helps you remember things because all you have to remember is the rule, not everything you see.

OTHER BRIDGING DISCUSSION

School:

Home:

Peer group:

Other:

COGNITIVE MASTERY CRITERION

Given a sequence of lines of increasing or decreasing size, each child should be able to state the rule for reconstructing the sequence by telling you that the lines get bigger or smaller.

Letter-Shape Concepts

Lesson 13

COGNITIVE FUNCTIONS

1. COMPARING SPATIAL CHARACTERISTICS
2. DISTINGUISHING DEFINING CHARACTERISTICS — SELECTIVE ATTENTION

RATIONALE

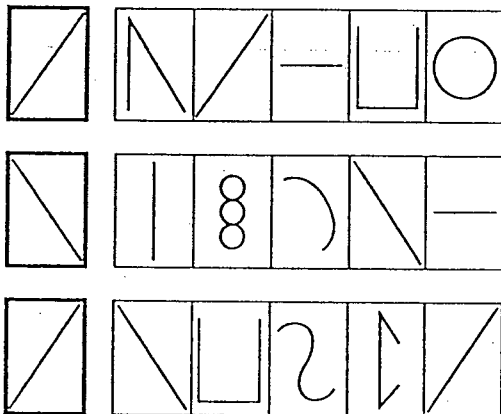
The purpose of this lesson is to introduce the concept of slanted or diagonal lines and how they differ from horizontal and vertical lines. Diagonal or slanted lines are a difficult concept for children but a necessary one for letter recognition and production. It may help initially to make the spatial referents explicit, showing how lines go from one corner to the diagonal corner. Teaching strategies include comparing slanted lines with vertical and horizontal ones, and demonstrating the relation of slantedness to real world space and gravity.

MAIN ACTIVITY

a. Provide each child with a piece of paper with a diagonal line drawn across it. Ask the children whether the line on the paper goes across or up-and-down. Ask the children how they know it doesn't go up-and-down or across. Name the line a slanted line. Elicit the defining characteristics or criteria for a slanted line. (*It goes from one corner of the paper to another corner.*) Ask whether it can go to any other corner. (*No, it goes to the opposite corner.*)

b. Ask whether there is another way to draw a slanted line. Are there corners on the page without lines through them? What happens if you draw a line from one of these corners to the other? Then how many slanted lines are there on the page?

c. Pass out copies of Fun Sheet 3, on page 25, and have the children use each model to circle the matching slanted lines.



VARIATION

Provide small sheets of paper and have the children draw slanted lines. Use chalkboard, flannel board, and other materials to stimulate production of slanted lines.

GENERALIZING ACTIVITIES

a. Ask the children if they can make their bodies slant when they are standing up. What happens if they lean very far? Have the children support one another while they try to make their bodies slant. Demonstrate while holding on to a wall.

b. Have the children look through a box of blocks and put together all the ones that have a slanted side such as triangles, rhomboids, and so on. Acting as caller, have the children put their arms up-and-down, across, and slanted. Then have them put one arm in the across position and the other arm in another position.

BRIDGING DISCUSSION

Elicit from the children types of playground equipment or other objects that have slanted lines in them. Have them look at a slide, some climbing toys, and roofs of houses. Ask the children how they knew these lines were slanted, and how these lines were different from lines that go up-and-down and across. Discuss other times when we can compare up-and-down, across, and slanted lines.

OTHER BRIDGING DISCUSSION

School:

Home:

Peer group:

Other:

COGNITIVE MASTERY CRITERION

Given three to five shapes that have one or more slanted lines, each child should be able to point to a slanted line on each form.

Appendix C

Related Programs

Cognitive Enrichment Network

Cognitive Enrichment Network (CogNet) (Greenberg, 1992) was designed to fill the gap between *Bright Start* and FIE. It was created for grades two through four, and is a program that is totally integrated into the school day. It teaches children the language to talk about their thinking. The program provides a framework for thinking and learning, with an emphasis on metacognition. It can be easily adapted and modified to match the grade, ability, and prior knowledge of the student group.

The training for this program is similar to FIE and *Bright Start* in that it is about 40 classroom hours, and includes theoretical background, instruction in mediated learning strategies, the teaching components and the recommended daily structure of the program. Participants receive a Teacher's Guide. There are no other required materials, although the program developer has published some supporting materials that are available for purchase and will reduce lesson preparation time.

Parent as Mediator

There has been one local training offered for the Parent as Mediator Program (PAM). This program focuses on teaching parents to be good mediators, or teachers, for their children. The training prepares staff to lead a series of seminars for parents that cover the components of mediation and includes practical activities that can be done with their children to develop specific cognitive processes. This training is also done over 40 classroom hours, and participants receive a Trainers Manual. Parent booklets are available for purchase from the publisher.

Dynamic Assessment

Dynamic assessment (DA) is the final component of this 'family of programs' and training has been offered in this kind of assessment in Vancouver since the late

Eighties. DA is not, correctly speaking, a program, but a series of assessment instruments, all of which are based on the same theories as the programs previously discussed. Assessment instruments are available for young children as well as older students and the training is typically divided into sessions that focus on these two age ranges. The first of these instruments, the Learning Potential Assessment Device (LPAD) (Feuerstein, et al. 1979) is designed for older students (early adolescence and up) and was developed in response to a need to have a better understanding of a student's ability to learn. LPAD came about in part as a natural extension of the theories of structural cognitive modifiability and mediated learning, and also, in part, in response to a general dissatisfaction with standardized testing, especially for disadvantaged children and students with special learning needs. It came directly out of Feuerstein's original work in Israel and can be described as follows:

Dynamic assessment refers to an approach in which processes of thinking, perception, learning and problem solving are assessed through an active teaching process aimed at modifying the individual's cognitive functioning. In contrast to the conventional psychometric approach, in which the goal is to measure the manifest level of performance relative to a representative sample of other individuals, the LPAD is geared towards producing changes within the individual during the testing situation and assessing ability to learn and change relative to their own level. (Tzuriel, Samuels, & Feuerstein, 1988, p.144.)

A similar assessment tool, the Children's' Analogical Thinking Modifiability (CATM) (Tzuriel & Kline, 1985) instrument was developed in response to a need for accurate assessment information for young children with special needs who are notoriously hard to assess with standardized instruments.

In DA, the focus is again on process rather than product. It follows a test-teach-test format where mediation is used in the teaching phase. This hopefully helps the learner to gain insights into his own learning that will improve his performance on the

final test. It also yields information on faulty cognitive processes, ease with which remediation can take place, and successful teaching strategies, all of which provide valuable information for the teacher.

Appendix D

Letter to School Administrators

Survey Package

EFFECTS OF TEACHER TRAINING IN COGNITIVE EDUCATION PROGRAMS

COVER PAGE

Principal Investigator: Dr. Hillel Goelman
Co-Investigator: Adele Weir

NOTE: To ensure confidentiality, this cover page will be stored separately from the questionnaire. If you are willing to participate in a follow-up interview, please fill in the requested information.

Please indicate:

I would / would not like to be contacted for the follow-up interview.

The best time to contact me is _____.

PARTICIPANTS NAME: _____
Please print.

MAILING ADDRESS: _____

TELEPHONE: Home: _____ Work: _____

Signed: _____

Date: _____

Code Number: _____

Code No. _____

A. DEMOGRAPHIC INFORMATION

Please complete.

1. Age range: 20-25 _____ 26-30 _____ 31-35 _____
36-40 _____ 41-45 _____ 46-50 _____
51-55 _____ 56-60 _____ 61+ _____

2. Gender: Male _____ Female _____

3. Post-secondary education:

Bachelor of _____ Year _____

Master of _____ Year _____

PhD in _____ Year _____

Diploma(s) _____ Year _____

Other(Please list) _____

5. Teaching experience:

a.) Current assignment: _____ Grade level _____

How long have you had this position? _____

b.) Previous assignment _____ Grade level _____

How long did you have this position? _____

c.) How many years in total have you been teaching? _____

6. Have you held any other positions in the education system (for instance Special Education Assistant, Youth and Family Worker, etc.). Please describe, including number of years.

7. Please indicate all the programs in which you have been trained:

FIE _____ Bright Start _____ CogNet _____ Dynamic Assessment _____

Other (Please identify) _____

B. TRAINING:

		FIE	Bright Start	Other (write in)
1. In approximately what year did you take your training?	1986-1989			
	1990-1993			
	1994- 1996			
	1997-2000			
2. Did you take this training on your own time or on school time?	own time			
	school time			
3. Did your school sponsor your training in full or in part?	all			
	in part			
4. Approximately how many hours of training did you have? e.g. 5 days = 30-35 hrs. 4 days = 24-28 hrs. 2 days + 3 part days = 18-24 hrs.	30-35+ hrs.			
	24-28 hrs.			
	18-24 hrs.			
	<18 hrs.			
5. Was your training conducted by a local trainer or by a person from out-of-town"? e.g. Tzuriel, Haywood.	local			
	out-of-town			
6. Overall, how would you describe your training?				
GOOD = learned all you needed to use the program if you wanted to; many opportunities for discussion and practice.				
AVERAGE = learned all you needed to use the program; some opportunity for practice and discussion.				
FAIR = did not feel prepared to try the program; little opportunity for discussion and practice.				
7. At the conclusion of the training, how would you describe your understanding of the following: (1 = very little understanding) (5 = a high level of understanding)				
-the theoretical foundation of the program		1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
-the mediated learning experience		1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
-the structure of the program		1 2 3 4 5	1 2 3 4 5	1 2 3 4 5

	FIE	Bright Start	Other
8. Did you learn enough to get started even at a minimal level? Yes/No			
9. Did you have access to training follow-up, either group or individual? Yes/No			
10. Did you use the follow-up opportunities? Yes/No/Not applicable (N/A)			
11. How would you describe the clarity of the training manual for each program?			
- for understanding?	Good Average Fair		
-for implementation?	Good Average Fair		

12. Please use this space and any additional pages to clarify any of the above information or to add any comments.

C. PROGRAM IMPLEMENTATION:

		FIE	Bright Start	Other
1. Are you currently using the program in your classroom?	Yes			
	No			
2. If you are currently using the program, what kind of student group are you using it with?	whole class			
	small group			
	one-to-one			
3. Have you taught the program in the past?	Yes			
	No			
4. What kind of student group did you use the program with in the past?	whole class			
	small group			
	one-to-one			
5. Are you currently using only part of the program? e.g. MLE or one unit?	Yes			
	No			
6. Do you try to use a mediational teaching style with your students while teaching the program?	Yes			
	No			
7. Do you try to use a mediational teaching style at other times in your teaching?	Yes			
	No			
8. Have you ever team-taught the program with a colleague?	Yes			
	No			
9. What kinds of students have you used the program with? Please mark all that apply.	Regular			
	ESL			
	Learning disabled			
	LAC			
	At-risk			
	Mentally challenged			
	Other			
10. At what grade levels have you taught the program?	Preschool			
	Kindergarten			
	Grades 1-3			
	4-7			
	8-10			
	10-12			
	Adults			

		FIE	<i>Bright Start</i>	Other
11. If you have never used the program why not?	Not appropriate for my students			
	Do not feel adequately trained			
	Lack of support in my school			
	There is a lack of on-going training and support from the program trainers			
	Other			

12. Please use this space and any additional pages to clarify any of the above information or to add any comments.

D. OTHER OUTCOMES OF TRAINING AND PROGRAM USE:

Please mark all that apply.

		FIE	Bright Start	Other
1. What kind of effect do you feel that training in these programs has had on your teaching?	Positive			
	Negative			
	None			
2. What kind of effect do you feel that your training in these programs has had on your students?	Positive			
	Negative			
	None			
3. What kind of effect do you feel that your training has had on your understanding of how people learn?	Positive			
	Negative			
	None			
4. Has training in these programs changed your understanding of the nature of intelligence?	Yes			
	No			
5. Do you feel that training in these programs increased your effectiveness as a teacher?	Yes			
	No			

6. Please add any other comments you might have about the effectiveness of these programs.

THANK YOU FOR YOUR PARTICIPATION

Appendix E

Informed Consent Letter

Interview Format

INTERVIEW FORMAT

Code# _____

Date: _____

Location: _____

A. DEMOGRAPHICS: confirm and clarify information on questionnaire -

3. Education: inc. any special education training

- Total years of post-secondary education _____
- Did you learn about cognitive education in your post-secondary education?
- Had you heard of Feuerstein _____, Vygotsky _____, or any of the other scholars in the field?
- On average, how much time do you spend in professional development in the course of a school year? e.g. this year
- How much professional development do you do outside of school hours?

4. Teaching experience:

- currently:
- previous:
- total years of teaching : inc. any special education experience

6. Work experience in the school system other than teaching and related training

7. Training in: FIE I _____ FIE II _____ BS _____ CogNet _____ DA _____
Other _____

B. TRAINING:

1. I am particularly interested in how you got interested in these programs:

- How did you first hear about FIE/Bright Start?
- What was it about the program(s) that particularly appealed to you?
- Did you know anyone who was using one of the programs?
- What made you decide to take the training at that particular point in your career?
- How did (lack of) school sponsorship of your training affect your decision to do it?
- Did you do the training with a friend or colleague?

2. The training experience:

- What was the format of your training? i.e. summer/Easter - 5 straight days; weekend and evenings during the school year; all weekends,
- Did you attend the whole session? If not, why?

- You described your training in general as _____. Can you elaborate on that?

- There was a lot of information in the training sessions. How did you find the sessions with relationship to learning new theory and concepts such as cognitive modifiability, metacognition, intrinsic and extrinsic motivation, etc?

- and in relationship to learning and practicing a different teaching style ?
i.e. making use of the zone of proximal development, and the mediated learning experience?

- What were the highlights of your training experience?

- What, if anything, did you find particularly challenging?

3. Follow-up: Can you tell me about your experience with follow-up to your training?

OR If follow-up was not available, would it have helped if it was? Do you think you would have used it?

OR If follow-up was available and you did not use it, can you tell me why not?

4. Program training manuals and printed material given out during training -

- How did you find the manual? - easy /hard to understand and use?

- Did you get information regarding the source and cost of the FIE materials?

- Any other comments?

5. If you could change something about your training experience, what would it be?

- Is there anything that you would like to tell the trainers that might have improved the training for you?

C. PROGRAM IMPLEMENTATION:

1. When did you first use the program with students? Tell me about it.

- What was your most successful experience with the program? Least successful?

2. Can you describe the factors that encouraged you to use the program, and continue to use it?

- OR Can you describe the factors that discouraged you from using the program?

- If you are not using the program currently, what would encourage you to use it?

- In your opinion, what would support more use of the program in your school?

3 Have you ever used part(s) of the program some of the time?

4. The mediated learning experience, or MLE, is one of the common threads that run through these programs. When do you find you use a mediational teaching style in your practice?

-Were you mediational before you took the training? i.e. before you knew that particular style had a name?

5. Team teaching experience

D. PARTICIPANTS REFLECTIONS ON THE EFFECTS OF TRAINING

1. Do you feel that your training experience has changed your teaching practice in any way?

- Were there any parts of the program that had more of an impact on your teaching than others? Why do you feel this way?

- On the questionnaire, you noted that your training in this program increased/did not increase your effectiveness as a teacher. Can you tell me more about this?

2. One of the things these programs are about is 'learning how to learn'. Did you learn anything about yourself and how you learn from your experience with this program?

- Did you learn anything about your students learning needs?

3. Feuerstein's theory about 'cognitive modifiability' flies in the face of traditional theories of intelligence which frequently see IQ as static rather than changeable. Has your training in this program altered your understanding of the nature of intelligence in any way?

4. In general, what were the benefits of taking this training for yourself and for your students?

- Were there any negative aspects to your experience with the program, either in the training or your use of it?

5. Is there anything else that you would like to tell me about your experience?

Appendix F

The Survey Comments

The Survey Comments

The comments were written through out individual questionnaires. What follows is all of the comments that appeared on the questionnaires, reproduced with only minimal editing to clarify original context. Any additions are indicated by square brackets, i.e. []. They are organized by the author into categories to match the questionnaire, and by topic, as appropriate within each category. On the questionnaires, the comments often appeared in random order as they occurred to the respondent.

TRAINING

Regarding Instruction and Trainers:

Found instructors excellent - FIE I and FIE II.

I found both the instructors excellent in their knowledge of their subject and very interesting and stimulating to listen to. However, given the fairly steep price of the materials, I think they should be very well organized.

The trainer of the Bright Start Program was undergoing a very stressful medical situation which undoubtedly impacted the level of training.

Imposed, top-down model; no time for discussion.

Implicit in [participant] criticism was the accusation of narrow-mindedness or racism.

It was wonderful watching _____ in action. When we asked her a question she would turn it back to us with "Well, what do you think?" and it generated volumes of discussion with every one in the class. Quite incredible watching people open up and speculate how they best learned.

The program was a week long and the instructor was concerned with covering the material. Questions were dealt with in a summary fashion. Discussion was non-existent.

Both instruments/programs were taught with little organization. Especially in the case of LPAD, hours of follow-up work were necessary to make the program useable. Here at school, it took approximately 20 person-hours. FIE was significantly better, but it still takes a half a period a week to prepare (beyond photocopying).

Structure inhibits learning especially, or rather, teaching. If mediation was the intended result [of the training] teachers found it difficult to bridge.

I do not feel that 3/4/5 day training is adequate to make judgements re: students' potentials. I did not gain a comfort level with either the resources or the assessment process during the allocated time. I did however come to see how LPAD could help create a more accurate picture of a student's learning potential/style of learning. It has

been a long time since I've taken the training so I'm going on memory of impressions of the training rather than current knowledge.

Regarding the Challenge of the Learning Material:

I went through FIE I 3 times before I understood it. Then I went through Levels II and III.

First FIE training 'Fair'; second FIE training 'Average'.

I responded that my LPAD training did not give me a high level of understanding. I feel that this was not a function of the trainer, but that full understanding only comes with experience in using such a complicated program.

I read Feuerstein's books and I struggled personally with the concepts

Regarding the Program manuals and Materials:

Instrumental Enrichment:

The [FIE] manual was dense, difficult to understand and too wordy; too much language.

The [FIE I and II] materials were exceptional and I enjoyed the challenge of doing them myself.

I found that the materials handed out during the FIE and LPAD training were presented in a very haphazard manner. I feel that more time should have been spent ahead of time ensuring that complete packages for each [participant] were available.

A great big [FIE] binder that is too full of info for me to access what I might need quickly! In both cases.

I remember finding FIE resources challenging due to disorganization so after I got over my illness, I did not have an inclination to continue [the training].

In general, I found that I use my own notes most often when preparing lesson plans for IE, and the manuals to a lesser extent. The IE manuals seem to contain too much detail - more than I could possibly cover and still retain the attention of the students.

I cannot overemphasize the need for further organization of the training protocols of these programs [FIE and LPAD]. I am happy to have access to cognitive curricula, but I fear it will not be effectively used in a wide-spread way until improvements are made. It seems people do not lack opportunity to use their training, they lack the time to prepare to teach in this manner. Certainly further support from the district and the ministry would make a difference.

I was annoyed at the inconsistency in labelling which occurs often in FIE and LPAD materials. e.g. sometimes it's page b-1, other times it's 1B. Sometimes a page is called a 'learning page', whereas at different times it's called a 'training sheet'.

Bright Start:

I found the [Bright Start] manual complex and needed to work through the lessons a few times.

Dynamic Assessment: (includes the Learning Potential Assessment Device (LPAD) and Dynamic Assessment of Young Children)

I found the LPAD materials to be quite disorganized and difficult to access quickly. Most of the pages were photocopied but not arranged in a 'user-friendly' manner. The info was there if you looked long and hard enough, but it was not really conducive to 'casual' or 'novice' use.

[LPAD] manual needs work so that this form of assessment is recognized for designated students.

In order to be ready to begin administering the LPAD I had to spend many hours preparing a binder for each instrument which contained different versions of the tests, MLE notes, scoring practices and answer keys.

I liked some of the assessment devices but the handbook/manual was so 'user unfriendly' that any thought I had of using it in the school informally was quickly cancelled. Also, there were resources that needed to be purchased and unless the LPAD was going to be used regularly, it would not have been worth buying.

Cognitive Enrichment Network: (CogNet)

Awful manual - needs to be rewritten

Regarding Follow-up Training:

FIE I - the trainer was available for in-class support which gave me the confidence, motivation and support to begin the program with students. There was no in-class support available for the other programs which may be the reason I do not use them.

We were given (I think) addresses and names to discuss successes (and failures). The networking really didn't pan-out though. I did e-mail a person in Texas but as we received the [Bright Start] training 3/4's of the way through the year, we did not implement many lessons.

[Bright Start] - felt I needed someone to watch me working with a small group

LPAD is different because you could benefit from continuous support and teaming with a speech pathologist or psychologist to really be precise in your assessment.

IMPLEMENTATION

Experiences with Implementation:

I tried using FIE with my students a few years ago. At first they enjoyed the activities. It helped them focus. However, I felt that my students that were special needs could not grasp the concept of bridging. I don't know whether this was because I myself was not experienced enough to implement the FIE to its fullest potential, or whether my students needed other techniques to learn to bridge. Maybe Bright Start would have been a better choice too use with my students than FIE.

I have been teaching FIE for 9 weeks. I have taught Organization of Dots and am moving into Comparisons. I'm quite unsure whether I am using mediation properly.

I have only had the opportunity to teach Level II of FIE once in my school because not all teachers are trained and I couldn't follow my students. I've used FIE III once with a class for 1 year. Since then I've only used FIE III sporadically with specific groups.

I presented a demonstration lesson of FIE for the International Teaching for Intelligence Conference (1997).

I don't use it [FIE], nor have I ever.

A colleague and I are both teaching FIE for the first time after being trained in it recently. While we teach different groups, we meet weekly to plan, problem-solve, determine directions.

My sponsor teacher (during my long practicum) used Bright Start in her class every day. I got a great introduction to the program by seeing it in action. I took the training a few years ago, and have only really had the chance to use it in the classroom this year. I was teaching either K/1 split or 1/2 day K up to this point and the time constraints were too great to effectively use the program. ... I am just about to begin the Bright Start program in my classroom this year. I have a high ESL population and I'm interested to see how it works. I'm going to teach it to 1/2 the class while the other 1/2 are doing their journals - being supervised by our Resource Teacher. Wish me luck!!

I used [Bright Start] for just one year in my classroom.

I use LPAD when I have time to assess children - this has been the most useful part of the program for me.

I have extensive training/practicums in psych-ed testing and thought this would add another 'piece of the puzzle'. My psych-ed training helped me to assess and write the report required on one student.

Experiences With Partial Implementation:

I have used the [FIE] materials intermittently - when the need and organization have allowed.

Although I took the training and have used many ideas learned during the training, I have never had the chance to implement the full program.

I use parts of CogNet and Bright Start now.

As I didn't get back into a kindergarten classroom, I've been 'spotty' in implementation of the program. I've done a few lessons but not the entire program.

Last year I taught LAC 1/2 time and used some of the 'Self Regulation' techniques from Bright Start with some children with impulse control difficulties. I had limited success with them due mostly to the brief snippets of time I had with them.

I found that parts of FIE are more useful than other parts and in combination with other teaching techniques, mediated or otherwise, they can be used successfully.

I never thought about teaching just one unit (i.e. Organization of Dots/ Orientation in Space). Maybe I will look into it, if only for a few days a week.

Experiences Using a Mediational Teaching Style:

Because of my understanding of mediated learning, I am able to use bits and pieces of these programs any where.

[A mediational teaching style] is the foundation of my approach.

The programs [FIE and Bright Start} are excellent, but I find that given my position (LAC/ESL) I use a mediational approach to teach reading and writing, more than I would use actual lessons from, for example, Bright Start.

I do use a mediated learning style with my students. I have displayed charts and used them to develop thinking skills.

I seem to use MLE and bits of the programs during my daily work.

I do use mediated teaching throughout the day, especially at calendar time.

In my opinion, the mediational approach to teaching is the most important part of FIE- it changes or enhances the interaction of teacher and student forever! The resulting focus on precise language/control of impulsivity create an environment in which all children can learn.

I feel more positive about my role and significant influence with students since I have begun using a more mediational approach. I teach 'less' (i.e. content) but the learning is stronger because of the cognitive approach.

Reasons For Not Using the programs:

Materials:

The cost was too great to buy the materials [for FIE] myself. They are closely copyrighted.

In part, [did not try FIE because] materials were difficult to obtain.

Could not access/afford [FIE] materials when I needed them.

[FIE materials] too expensive.

Materials (FIE, LPAD) were difficult to find/order; they are expensive

Time:

[Do not use Bright Start because of] lack of time and other priorities.

Too many other obligations [FIE].

There was no longer any time that we were able to set aside for collaboration

Problems of time/number of children in the school.

Time constraints prevented me from using [Bright Start].

Curriculum Pressure:

The program [FIE] is time-intensive; I would have difficulty using the program at the expense of more direct instruction in academic subjects.

[FIE is] hard to fit in with 3r's expectations.

There was resistance in my schools to having teachers teach anything 'outside' the curriculum.

Two years ago, one school had a trained FIE teacher who tries to give a small group instruction over 6 weeks, but the principal discouraged him from continuing beyond that time. Just not seen as relevant.

I feel pressure to focus on reading and writing.

Isolation:

I think there are no 'support networks' in place for any teachers of Instrumental Enrichment at the moment.

Needs a more collegial approach (for me anyway!) and this hasn't happened.

LPAD is very high level and we need to team with other assessment professionals to use common language.

Training/Support:

I believe that for FIE or Dynamic Assessment to become a regular part of the school day practice - ongoing supervision is required (during the school day). After school meetings lose their energy as people are tired after a full day's teaching.

I need to review.

I do not use [FIE] presently partially because of lack of ongoing support from the program trainers.

No SLP support to help decide which instruments would work best nor to help interpret the results of LPAD.

I am completing this questionnaire because I thought it might be part of something I could connect into again, kind of a refresher!

Teaching Assignment:

[FIE], I discovered was more appropriate for intermediate students. One day I may take Bright Start because I teach in a primary annex.

It is very early in my teaching career. This is my first full-time continuing contract.

I do not use [Bright Start] at present because the lesson activities are not appropriate for Grade 2 and I do not have time to design appropriate activities to teach the concepts in the lessons.

Some of the [Bright Start] materials were not suitable for my group of students i.e. a grade 2 class.

School Support:

My school did not wish to support [FIE]. There is some interest now for me to run a program.

If I'd had a team being trained [in Bright Start], perhaps it would have been different.

I wish my whole school used FIE. I feel isolated and the continuity of learning isn't there for the students.

The fact that most of the staff are unfamiliar with cognitive education is also a deterrent.

Personal Development:

[Have not used FIE because I] wanted to have the skills to transfer to other parts of my program. (Special education classroom teacher)

I took the FIE and the LPAD, already having extensive background in the field of special education. I felt that both these tools would give me additional tools to use. I don't think that either one is a tool which can be used to facilitate learning just on its own.

I would particularly like to pursue Dynamic Assessment for Young Children at the k level but the cost has prevented it.

Particular Difficulties for Non-Enrolling Teachers:

As my caseload grew larger, I was able to be in schools only two times a week. There was no one who could present the program for a third or fourth lesson.

Bright Start training had many elements that I was already doing, so it was a good reinforcer. I had difficulty implementing much of anything else - didn't want to follow the 'binder' format at the time because it would not fit into well-established routines and other staff habits.

I would love to use these programs with the First Nations population that I am currently working with but as my job is 50% Early Literacy and as their needs are so severe in this area, I have only enough time to address this need (except in certain situations).

The difficulty of arranging the Resource Room time table to provide the required amount of time.

The push for 'resource team' models of delivery [of service] in many schools impact on the ways in which LAC/resource teachers are able to 'teach' as well as what they are able to teach. FIE is a victim of this situation.

Being in administration has limited my opportunity to actually instruct FIE in recent years. I hope to be able to use my training when I leave administration.

Currently, I am asked to teach specific skills in reading or math and there is no demand for FIE or Bright Start.

Role of the DRT with large caseload in many schools prevents the implementation of the program [FIE]. It requires a time commitment. I have offered in my main school several times but administration didn't remember. They were surprised when I asked for a questionnaire and said they didn't think anyone was trained in the school. We have boxes of materials that could be used but I am there only 3 days a week with 20 students.

PERCEPTIONS OF EFFECTS

FIE, Bright Start, and LPAD are the most useful training experiences that I have had. I believe I am a better teacher in all subject areas and with all grades than I would have been without this training.

The mediational approach to teaching and testing is supportive and yields much more information than traditional approaches.

I think Dynamic Assessment is a very useful and child-friendly, teacher-friendly tool. The specific info[rmation] it provides is easily translated into classroom strategies and curricular modifications.

Found the training improved my overall teaching practices.

For me, personally, Feuerstein's theory is the aspect of the training that has had the most profound effect on my teaching (and counselling).

It is another tool for teachers to use in their teaching - another way to reach the students.

I think more students should have the opportunity to take FIE and Bright Start.

[In response to the question 'Do you feel that training in these programs increased your effectiveness as a teacher?'] - nothing is ever useless. I can see lots of useful principles.

I feel the training has had a positive effect on my teaching style and effectiveness.

As a teacher - enjoyable and enlightening.

Excellent programs - change your whole approach to children and their learning. Also changes you as a teacher.

I feel I am better able to provide opportunities for my students to develop their higher thinking skills.

I feel I question more effectively. I was always concerned that students develop metacognitive skills and even more so after these courses.

Found I asked a lot more questions that had my students giving their own opinions rather than stating mine.

Special students - able to open up, feel their experiences are valuable, revealed amazing insights, learned to value/appreciate peers, recognized strengths.

I understand more about multiple intelligences and how to work with what people know - not just find out what they don't.

I am working with a grade 6 student who has made great progress in 'Organization of Dots'. However, he has made little progress with the language of the program. This has been somewhat the same for the other students. It is helping them to be more precise and to plan their thinking and be less impulsive.

I feel these programs increase in effectiveness based on the opportunity to bridge the concepts on a daily basis to classroom learning and out-of-school experiences. This can only occur when the classroom teacher is knowledgeable about the program and committed to integrating it into classroom experiences.

I am committed to the underlying theory of mediated learning. However, I want to synthesize this theory with Vygotsky's Cultural-Historical - Russian theory of 'psychological tools' - and the Social-cultural variant pursued in America - Wertz, Cole, etc - and my passion is to go deeper into Alex Kozulin's approach (he works at Feuerstein's Institute in Israel) that is explained in his two books - Psychological Tools and Vygotsky's Biography of Ideas. ... Carol Lidz at Touro College in New York is working on a synthesis of Feuerstein's and Vygotsky's ideas. This theoretical approach does work.

Without follow-up and support, the effectiveness definitely fades.

I am opinionated - all programs 'work'. Saw and heard little about the true effectiveness - does FIE keep kids in school? - does FIE make school learning easier for otherwise learning challenged students?

SUGGESTIONS TO SUPPORT IMPLEMENTATION/PROGRAM EFFECTIVENESS

I feel the effectiveness of my teaching would increase if the classroom teachers that worked with my students were also using a mediational approach. Given my position, I work with students for an average of 3, 40-minute periods a week. Therefore the students are exposed to traditional teaching methods for the majority of their time in school.

I question Feuerstein's belief that his instruments should be 'content free'! I believe his theory should also be developed in content area curriculum and reading materials. This would allow it to have a much wider acceptance.

A yearly refresher training course would be excellent. I haven't used FIE in two years (including this one) and I have only used Dynamic Assessment once after training and only in part.

Refreshers would be nice - also some of us who are trained could give talks or intro workshops - but we need the actual trainers to be freed up if we want FIE and LPAD to go anywhere in terms of district directions or to facilitate better transitions from Gr. 7 to 8/Gr. 3-4, or from ESL to mainstream, reintegration from alternate, etc.

I would like to find literature that shows how these ideas could be used in a 'counselling format' as that is now the job I am doing.

The Bright Start program is best suited to children in Pre-school to grade one. It would be helpful to have units designed for students in grades 2 and 3. Some activities are not appropriate for later primary students.

I would have liked to take Bright Start but I felt the school should provide the financial support as it had done for FIE and LPAD. As a special needs teacher I felt that Bright Start would serve me well when working with mentally and developmentally challenged students. If any opportunity comes up in the future for me to take Bright Start with financial support, I would love to take it.

There is no apparent District endorsement of the program beyond the training- i.e.
1. - encouraging principals to ensure FIE programs are implemented as part of an LAC program. 2. - producing pamphlets for parent consumption to encourage them to request the program in school . 3. - encouraging PAC's to have presentations about mediated learning, etc.!

I would have enjoyed having an ongoing 'Community of Learners' in the Vancouver School District who want to continue studying [Feuerstein's] (and Kozulin's and Vygotsky's) theory. The focus should be much broader than only FIE, Bright Start, or LPAD - in fact it is an overarching theory of learning which is 'Social Constructivist' and challenges Behavioral, Cognitive, and Social Learning theories of learning. Please contact me if there are others who share my interest in this topic.