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Cognitive Modifiability: What Is It All About?

Professor Reuven Feuerstein's discussion of cognitive development is presented in the first part of this chapter. In this discussion Feuerstein defines intelligence as adaptability or cognitive modifiability. He argues that intelligence should be viewed as a dynamic construct; that the human cognitive facility is flexible, not fixed. Feuerstein's view of cognitive development is rooted in this theory of Mediated Learning Experience (MLE).

This modality of learning entails learning 'through' a human mediator as opposed to direct learning. The 'mediator' controls when learning takes place, what is learned, how it is perceived and what meaning is abstracted in the learner's mind from the learning experience. The mediator often attempts to change the learner's psychological state, the nature of the stimuli and/or even herself in order to produce a learning experience. These changes can include the learner's state of alertness, interest and awareness; the stimuli's appearance in time, place, intensity and its background; and the mediator's tone of voice, appearance and body language. Without such changes the reality is grasped episodically and learning is random. Ultimately the mediator interprets the intended meaning of the learning experience for the learner and establishes in the student a state of expectation for relevant future exposures.

Feuerstein perceives cognitive functions not as components of ability in the factor analytic sense (e.g., mathematical reasoning, logical reasoning, spatial visual abilities, verbal abilities, musical abilities, etc.), but as general native abilities and dispositions. His developmental theory describes a structural process through which these cognitive functions are learned. Feuerstein's critical argument is that deficient cognitive functions that result from a limited or lack of Mediated Learning Experience can be

corrected or learned by formal and intensive instruction irrespective of age, etiology, or level of functioning.

Feuerstein's discussion culminates in a research report which explains his distinction of low performance due to the effects of cultural differences from cultural deprivation.

An interesting comparison between Reuven Feuerstein's and Lev Vygotsky's theoretical and applied work is presented by Barbara Presseisen and Alexander Kozulin in the second part of this section. She argues that both these thinkers significantly impacted the fields of socio-cultural psychology. According to her analysis, both Feuerstein and Vygotsky distinguish between mediated and direct exposure to reality. The first tenet of both theories is that reality is mediated by meaning. The second is that meaning is instilled in the human mind through social interaction. They both argue that the major function of all cultures is to provide humans with the tools for the interpretation of reality. Human mediation represents the conduit for the transmission of these tools from one generation to the next. For both, cognitive development represents a structural process of increased mastery of cognitive abilities.

Presseisen and Kozulin's discussion culminates in reports on specific applications of Vygotsky's applied system in Israel with adult immigrants from Russia and Instrumental Enrichment conducted with primary and lower secondary school children in the Philadelphia School District.

Intervention Programs for Low Performers: Goals, Means and Expected Outcomes

by Reuven Feuerstein, Mildred B. Hoffman, Moshe Egozi and Nilly Ben Shachar-Segev

Social services have long been plagued with ‘creaming up.’ Creaming up introduces inequities in the access to well-intentioned programs of social intervention due to their methods of helping the needy. This inequity is most clearly reflected in the fact that those individuals and groups who need help less are helped more, whereas those who are most in need of help are either not helped at all or are helped in a very limited and unsatisfactory way.

The creaming-up phenomenon, initially described in social welfare, is strongly paralleled in the field of education, in general and in the development of programs that aim at the enhancement of intelligence, in particular. A number of programs oriented to various dimensions of thinking (e.g., problem solving, critical thinking, creative thinking) have been developed for generalised use with relatively advantaged students. These students simply need to learn to make better use of the opportunities offered to them within the traditional public school system. Among the better known of these programs are Meeker’s *Structure of the Intellect* (1969); de Bono’s *CoRT* (1973); *Philosophy in the Classroom* developed by Lipman, Sharp and Oscanyan (1980); Whimbey and Lockhead’s *Problem Solving and Comprehension* (1980); Harvard University’s *Odyssey* (1983); Marzano and Arrendondo’s *Tactics of Thinking* (1986); and Sternberg’s (1986) program for developing practical intelligence. These programs have been structured in a way that makes their

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accessibility contingent upon a number of prerequisites: cognitive, emotional, motivation and functional basic school skills. The absence of these prerequisites in a given individual or group of individuals makes these intervention programs inaccessible to them. Yet the very absence of the prerequisites is often the determinant of the individual's failure to learn and therefore makes an intervention program even more necessary.

We begin this chapter by giving several examples of the creaming-up phenomenon to show its persuasiveness. The remainder of the chapter is devoted to providing guidelines for developing programs that do address the cognitive and metacognitive prerequisites for low-functioning performers. Thus, this chapter is not intended to be a systematic, comprehensive review of thinking skills programs or of existing programs for retarded performers; rather, the purpose of the chapter is to provide a broad-stroke discussion of the creaming-up phenomenon, generally and then a framework for analysing current instructional programs and developing new ones. This framework emerges from over 20 years of clinical research and experience with retarded performers. In our use of the term 'retarded performance', we differentiate between the manifest level of performance and the potential for learning that has not yet been actualised. It is the performance that is labelled 'retarded', not the individual.

THE CREAMING-UP PHENOMENON IN EDUCATION

In Bourdieu and Passeron (1964), French sociologists, analysed the effects of the open-gate policy that was instituted by the French higher educational authorities. This open-gate policy allowed individuals who usually would not have access to the university to enrol in courses there. Their findings pointed out that only a few of the students from the disadvantaged population were able to benefit from this policy; those who made best use of it were those who would have 'made it' in any case. The limited success of this program, designed to help individuals and groups in need of social promotion, was due to the lack of prerequisites possessed by the participants, which would have enabled them to benefit from the program. Accordingly, Bourdieu and Passeron (1964) concluded that an open-gate policy to higher education, unsupported by adequate measures to render it effective, only gives rise to pessimism about the role that education can play in the promotion of the disadvantaged. As the limited benefit of the opportunities offered to the disadvantaged becomes more evident the finger points to heredity as the major determinant of achievement. Indeed, Bourdieu and Passeron called their book *Les Heritiers*, hinting at the emphasis placed by certain behavioural scientists on the decisive role attributed to heredity as compared with the role played by education.

Similarly, a large number of intervention programs require that an individual show a minimal degree of initiative and resourcefulness in order to have access to them. However, the truly needy often lack this minimal