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El desarrollo del potencial de aprendizaje Entrevista a Reuven Feuerstein

The Development of the Potential of Learning An Interview with Reuven Feuerstein

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Resumen

A través de las respuestas que el Dr. Reuven Feuerstein nos ofrece en esta entrevista, podemos tener una primera aproximación al trabajo que él ha venido realizando desde hace más de 40 años. Su línea de trabajo se inscribe en la psicología cognitiva estructural con un interesante apoyo en nuevos usos de herramientas típicas de la psicometría, pero con énfasis en el desarrollo de habilidades del pensamiento y no en medir o señalar coeficientes de inteligencia.

El Dr. Feuerstein nos ofrece un balance actual de sus campos de trabajo más importantes, los cuales tienen aplicación a diferentes ámbitos de la educación, desde preescolar hasta entrenamiento de pilotos de alta tecnología.

Palabras clave: Modificabilidad cognitiva, operaciones mentales, funciones cognitivas deficientes, mediación del aprendizaje, mapa cognitivo, aprendizaje mediado.

Abstract

Dr Reuven Feuerstein's answers to this interview provide a first approximation to the work he has been doing for the last 40 years. It belongs to the area of structural cognitive psychology, with an interesting new use of the typical tools of psychometry focused on the development of thinking skills, not on IQ testing.

Dr. Feuerstein offers a current balance of the most important fields he has been working on, which can be applied to different educational settings, from preschool to the training of High-Tech pilots.

Key words: Cognitive modifiability, mental operations, deficient cognitive functions, mediated learning, cognitive map.

Reuven Feuerstein was born in 1921 in Botosan, Romania, one of nine children in the family of a scholar in Jewish Studies. He immigrated to Israel in 1944. He is married to Berta Guggenheim Feuerstein and has four children. He and his family currently reside in Jerusalem, Israel.



Feuerstein attended Teachers College in Bucharest (1940-41) and Onesco College in Bucharest (1942-44) but had to save his life by fleeing before obtaining a degree in psychology,. From 1944-45 he attended the Teacher Training Seminary in Jerusalem. He resumed his education in 1949 in Switzerland where he attended lectures given by Carl Jaspers, Carl Jung, and L. Szondy. From 1950-55 he attended the University of Geneva, under Andrey Rey and Jean Piaget, completing degrees in General and Clinical Psychology (1952) and obtaining a license in Psychology (1954). In 1970 Feuerstein earned his Ph.D. in Developmental Psychology at the Sorbonne. His major areas of study were developmental, clinical and cognitive psychology from a cross-cultural perspective.

From 1970 to 1995, Feuerstein holds the position of Professor of Educational Psychology in Bar Ilan University School of Education (Ramat Gan, Israel). From 1978 he has held an appointment as Adjunct Professor at Vanderbilt University's Peabody College of Education (Nashville, Tennessee, USA).

From 1965 to the present, Professor Feuerstein has been director of the Hadassah-WIZO-Canada Research Institute, which became part of the International Center for the Enhancement of Learning Potential (ICELP) in 1993 (Jerusalem, Israel). His life's work, and the central focus of the ICELP, has been the development of the theories of structural cognitive modifiability (SCM) and mediated learning experience (MLE), and its emergent practices of dynamic assessment (LPAD), active intervention to modify cognitive structures (the Feuerstein

Instrumental Enrichment [FIE] program) and systems for shaping and sustaining modifying environments. Research, training, and service have been merged in his work with populations in need of cognitive development, and enlarged to a diverse spectrum of individuals and groups at all age and functional levels.

The seminal nature of Professor Feuerstein's work is evidenced by the hundreds of thousands of people who have studied his theories and programs, by the pioneering work to develop the first models of dynamic assessment procedures which have been adapted and disseminated throughout the world, and for one of the first systematic attempts to develop a cognitive enrichment paradigm, which continues to be used over the last 40 years in many countries. The FIE program has been translated into 18 languages, and there are more than 45 centers throughout the world affiliated with the ICELP, carrying on the work by providing training, services, and program development. Feuerstein, as the prime or contributing author, published a series of books and over 80 journal articles, chapters in edited books, and monographs.

Sergio Noguez Casados (SNC): What exactly got you interested in developing the Structural Cognitive Modifiability (SCM) theory?

Reuven Feuerstein (RF): Structural Cognitive Modifiability (SCM) as a theory grew out of my interest to see people whose functioning was low and in certain cases extremely low, become able to modify themselves through cognitive processes, so that they could adapt themselves to the requirements of society. Working with these people has made me aware that modifiability is indeed possible, it was then that I tried to look for the theoretical basis for our strong empirical data. The theory of SCM has developed over the years, and has permitted us to create a large variety of cognitive apparatuses, which serve as the pillars of the theory.

During the period of 1950-54 I served as Director of Psychological Services of Youth Aliyah in Europe, an institution responsible for assigning prospective candidates for emigration from Morocco, Tunisia, Algeria, Egypt, and some European countries to various educational programs in Israel. In the early 1950s, I was involved in research on Moroccan, Jewish, and Berber children in collaboration with several members of the "Genevan" school, including Professors Andre Rey, Marc Richelle, and Maurice Jeannet. It was during this period that much of the psychological data that contributed to the development of concepts of cultural difference as differentiated from cultural deprivation was gathered. This period was also seminal in the development of working hypotheses concerning low functioning children and their potential for change.

SCN: What lies at the heart of SCM? Which are the core concepts?

RF: At the heart of SCM lies the theory of Mediated Learning Experience (MLE), to which we attribute human modifiability. It is MLE, which is a typical human modality of interaction, that is responsible to the unique character of the human being which is *structural modifiability*. There is a great host of cognitive conceptual tools,

among them, the cognitive map, the deficient functions, and the *process orientation* which marks and shapes the applied aspects of the SCM theory.

SCN: To what extent does SCM relate to the field of Human Development?

RF: SCM explains human development not only from its biological, but from his socio-cultural-psychological point of view. Human development is explained by a double ontogeny: biological and socio-cultural. And SCM is the outcome of the two ontogenies.

On an ampler sense, the SCM is based on a concept of human growth, which is characteristic of its evolutionary nature and of the transformation of its cognitive potentialities into reasoning abilities and continuous search for solutions to the problems of diverse order raised by its surroundings.

SCN: What exactly is the Feuerstein Instrumental Enrichment Program (FIE) and what characterizes it?

RF: FIE is one of the three applied systems derived from the SCM:

- a) The Learning Propensity Assessment Device (LPAD) which has historically taught us about the nature of human intelligence and its modifiability.
- b) The FIE, which is a form of MLE whose goal is to increase human modifiability where necessary.
- c) The shaping of Modifying Environments, which is considered by us as a vital condition to materialize the potential of human modifiability.

The FIE program is composed by 14 instruments; each of them is in charge of a series of cognitive function. By working on them, correction of cognitive deficiencies associated to them is fostered. The learner goes through a series of exercises of increasing complexity and abstraction, which are accompanied by new elements intended to promote interest and intrinsic motivation to do the program's activities.

The instruments of the FIE are:

- | | |
|-------------------------|-------------------------------------|
| 1) Organization of dots | 2) Orientation in space I |
| 3) Comparisons | 4) Categorizations |
| 5) Analytic perception | 6) Orientation in space II |
| 7) Illustrations | 8) Numerical progressions |
| 9) Family relations | 10) Instructions |
| 11) Temporal relations | 12) Transitive relations |
| 13) Syllogisms | 14) Representational stencil design |

Other instruments not included in the 14 before exist and are used for specific goals according to certain conditions of the subject. Some of those instruments

are: Analogies, Convergent Thinking, Divergent Thinking, Illusions, Maps, and Discrimination Auditory and Haptic among others.

The FIE program is content-free, since learning of contents is not the program's aim, nor is it among its objectives. Contents are circumstantial for the learner to apply cognitive operations. The work with each instrument implies the learning of rules, principles and strategies to solve problems underlying the task; it is also intended to aid transferability of the learning experience to other contexts from the person's own experience, in order to foster meaningful learning.

SCN: To what degree does Instrumental Enrichment promotes or fosters meaningful learning?

RF: Mediation methodology (MLE) improves the student's possibilities to have meaningful learning experiences as a result of the attention paid to different aspects, like the "bridging" students are asked to establish between the learning achieved in a particular context and its application to other situations, which makes them draw a case from their own experience to which the new learning can also be applied. Another element which creates the right conditions for meaningful learning is the intrinsic motivation elicited by the nature of the tasks assigned by the FIE. One more factor which enhances and fosters students' meaningful learning is doubtless the continuous use of metacognitive processes.

FIE is meant to equip the individual with the prerequisites of learning, which will permit the individual to benefit from the exposure to learning experiences. Research done on FIE and hundreds and hundreds of projects have confirmed this basic assumption.

SCN: Is the Mediated Learning Experience a pedagogical model?

RF: MLE is defined as a quality of human-environment interaction. It is much more than a simple pedagogical model and entails the shaping of cognitive processes as a by-product of cultural transmission.

As such it represents one of the following two modalities of human-environment interaction:

- a) Direct exposure to stimuli, considered as the most pervasive way in which the organism-environment interaction affects the organism.
- b) MLE, through which the interaction human-environment is mediated by a human being whose intentionality transforms the three components of S-O-R in a meaningful way into a compatible combination, where H is Human, O is Organism, R is Response and S represents the Stimuli; and where H interposes himself between the S and the O as well as between the O and the R.

In the MLE modality, the model S-R (Stimulus-Response) or S-O-R becomes S-H-O-H-R. See Figure 1 below:

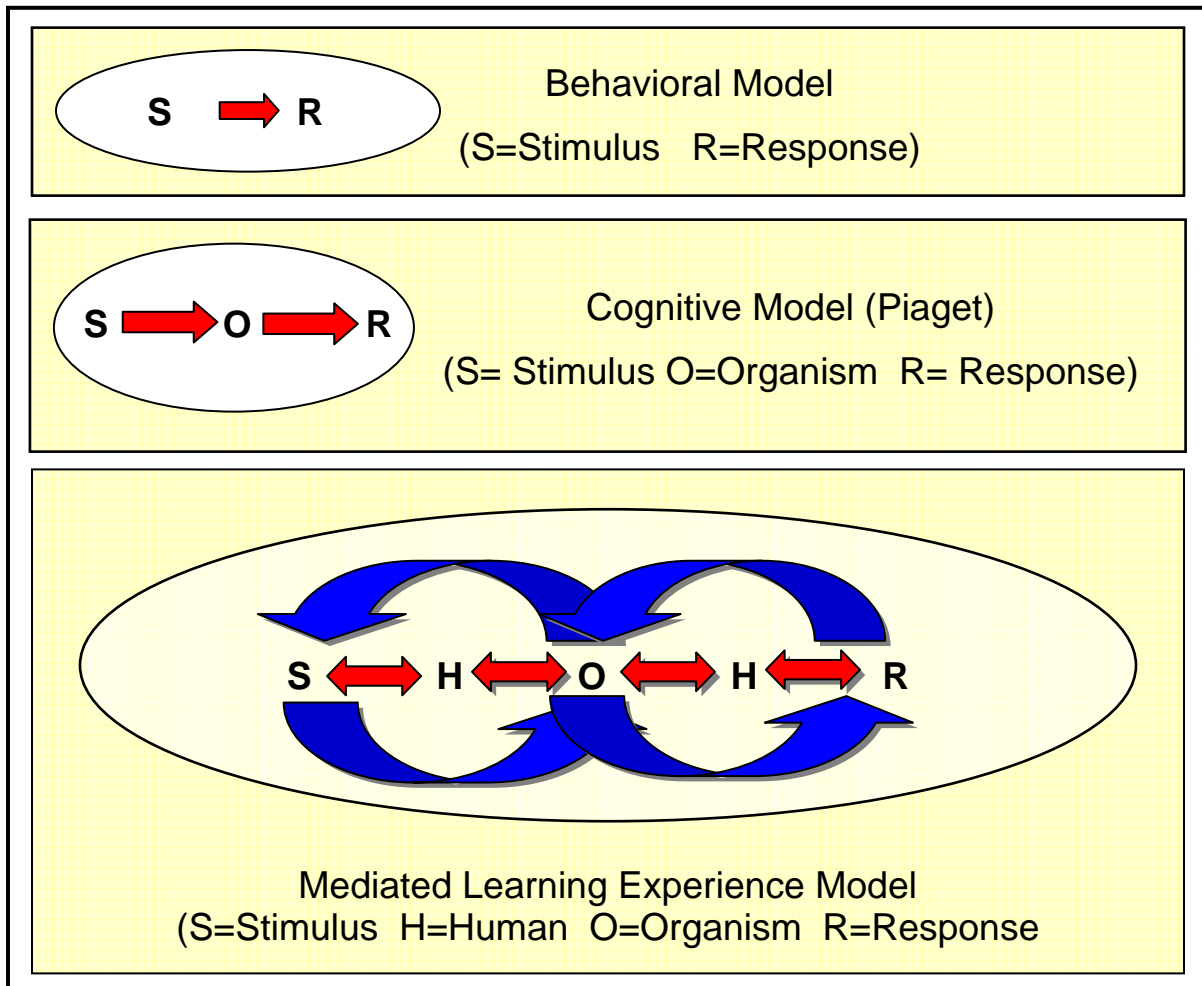


Figure 1. Models of learning

MLE has a universal meaning irrespective of language or content in which the mediational interaction takes place.

MLE represents the unique feature of human interaction and as such it is conceived of as the determinant of the auto plasticity of the human organism. MLE plays a major role in determining the evolutionary trends and the considerable changes that take place in the human mental functioning.

A lack of MLE deprives the devoid organism of its autoplaticity which may result in a lack of or reduced modifiability, *i.e.* in individuals for whom the direct exposure to stimuli has a limited effect even when this exposure is of an active operational nature.

SCN: Within the context of the many different thinking skills programs, what particularly stands out from FIE?

RF: FIE is a non-content program, and it is shaped by parameters of MLE, affecting the individuals' propensity and motivation to learn and to benefit from it.

The objectives of the FIE illustrate its distinguishing characteristics. The continuous improvement of the individual's modifiability is the general mission that is pursued. Its particular objectives are:

- 1) Correction of the deficient cognitive functions.
- 2) Acquisition of basic concepts, labels and operations.
- 3) Production of intrinsic motivation through habit formation.
- 4) Creation of task-intrinsic motivation.
- 5) The production of reflective, insightful, and introspective thinking processes.
- 6) The development of the active learning attitude.

The principles and didactics of MLE and FIE are useful in changing the attitudes and techniques of educators, psychologists, social workers, and counselor towards the target populations. The methodology of Instrumental Enrichment is transferable to other subject matter and treatment areas.

SCN: What kind of people can Feuerstein Instrumental Enrichment be applied to and what sort of problems has it been used for more effectively?

RF: Initially, we conceived FIE for the culturally different and culturally deprived. In recent years it has been applied to large masses of individuals with cognitive deficits of different etiologies: Down Syndrome, Fragile X, Genetic and Cerebral conditions. However, in the last 10-5 years, FIE has become the most preferred modality to train people, even with high levels of functioning, when they are confronted with the need to adapt to new situations. Thus Industry, High Tech and University students have been found to benefit greatly from exposure to FIE. The strength of SCM is the theoretical basis which includes an in-depth understanding of Cognitive Processes and the learning which is involved. The weakness is, that the regular models of research are not always adapted or suitable to study some of the basic concepts, implied in the process of learning which turns some of the concepts into questionable modalities of thinking.

SCN: What are the practical applications of the Learning Potential Assessment Device?

RF: The LPAD is, from our point of view, and it has become more and more recognized, as the most vital tool to be used when one attempts to positively affect the cognitive processes of the individual and of groups. It has now become applied in order to understand the deficiencies of otherwise high functioning individuals, which have often passed unexplained, and therefore uncorrected. LPAD and MLE

have become now applicable to High Tech pilots and other otherwise high functioning individual workers.

However the large masses of people using FIE are the regular school children and adolescents, the learning disabled and people with special deficiencies, inborn or acquired.

SCN: How many and which countries are FIE and LPAD being used in?

FIE is applied today in about 64-70 countries, with great differences in the intensity and frequency of application. Some states have adopted FIE to be used state-wide, and in a system oriented approach, others are applying it in hundreds of schools but without the system-oriented approach. LPAD is less widely used because it requires much more training than FIE. Recently there is a great demand for LPAD, and we are confronted with the need to train many LPAD people for both adults, school and pre-school children including adults whose level of functioning does make them accessible to regular LPAD.

SCN: Besides your Structural Cognitive Modifiability Theory, what other theoretical proposals do you consider worth looking at (e.g. neuro plasticity theories), in order to supplement your ideas?

RF: Neuro plasticity as it is conceived nowadays is one of the greatest support of our theory and it is fortunate that we have now this great source of support. Of course there are other biological and cultural theoretical elements, which are integrated in our theory. See the LPAD book, the last version, on its way to be published.

SCN: Living in a world of accelerated progress of information technology applied to education, in your opinion, what role will proposals like yours have to play in the future?

RF: The theory of SCM is a platform for an optimistic and active modification approach to human being confronted with the quasi “mutational” changes occurring in our era. Cognitive Modifiability is a condition, according to Herrnstein and Murray (1994), without which appropriate integration of human being would not be possible. SCM, LPAD, FIE and the Shaping of Modifying Environments have demonstrated that modifiability is indeed possible and the human being has to be given the opportunity to benefit from and materialize the developmental option which this presents!

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