

Editorial. Clinical and educational implications of Reuven Feuerstein's Mediated Learning Experience Theory: current scientific evidence

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On April 29th 2014 Reuven Feuerstein passed away in his 93rd year. He left many with a feeling of “being orphaned”, as witnessed by the innumerable condolences which arrived from all over the world at the International Institute in Jerusalem which he had founded in the early sixties under the name of the Hadassah-Wizo-Canada Research Institute, and later was renamed into “The Feuerstein Institute”. Letters written by parents of children with developmental or learning disabilities, or adults with sometimes severe brain damage, testified how his approach had changed their lives. Equally, innumerable letters of teachers, psychologists, therapists and colleagues, who had learned with him and from him, showed how widespread his influence was. Some critics compared him with a guru. Indeed, he was “the father” of a school of thought: structural cognitive modifiability and mediated learning experience, who also developed a unique combination of innovative assessment and intervention methods, and created an international institute where these methods could be taught and applied. But above all, Reuven Feuerstein was in the first place a man who wanted to help disadvantaged children & adults, to go beyond their actual barriers to learning. Barriers could be there for various reasons: a genetic origin, acquired brain damage, lack of learning opportunities due to socio-economic deprivation, or just plain shortcomings in environmental favourable conditions. He had a drive to help these unfortunate individuals to escape from a self- or others-defined status of passive acceptance that “nothing can be done”. But quite different from a guru, he had a never-ending endeavour to look for a scientifically grounded theory.

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Now is the time to reflect on the meaning of Feuerstein's intellectual legacy.

Although hundreds of papers, books and PhD's have been published on Feuerstein's theory and methods, relatively few of them can be retrieved from the databases which are actually regarded by the scientific community as reliable sources of scientific evidence. This might be a reason why "the Feuerstein approach" is relatively less well known.

Rather than telling stories, the Transylvanian Journal of Psychology (TSJP), in accordance with its mission of being a high standard scientific journal, wanted to compose a Special Issue about the relevance of Feuerstein's ideas for the science of psychology as well as for its many applications in education, special needs education, clinical and medical psychology, neuropsychological rehabilitation and other domains.

We invited a number of scholars who have known him, to write a review on a particular theme. Next to that we launched an open call for contributions. Contributions are systematic reviews, scope reviews, and original empirical research reports.

The TSJP is a peer-reviewed international journal, which scope is not only Eastern-Europe as the name would suggest, but to gather and disseminate world-wide scientific information. It is indexed in Psycinfo and full texts are available via Ebsco Academic Premier.

The response to our call made us decide to split the Special Issue dedicated to the intellectual legacy of Reuven Feuerstein in two volumes.

The purpose of this Special Issue volume N°1 is:

1. to provide an update of the theory of Reuven Feuerstein in view of current theories of intelligence, modifiability, neurosciences, etc.
2. to provide a scientific evidence base of the results of implementations which have been done based on Feuerstein's methods or ideas in a clinical or educational context with various populations of adults and children.

The "harvest" is a collection of outstanding papers, whose authors have not been "blind followers" of Feuerstein, but have remained critical scientific thinkers, who often developed their own systems and theories, while paying deep respect for the man who inspired them.

Special Issue N°2 will have more review and research papers on the implementation of Feuerstein's theory of Structural Cognitive Modifiability and

Mediated Learning Experience in the education of individuals at risk of educational failure, and in (re)habilitation of children and adults who have learning difficulties and brain damage in various degrees: some with a registered learning disability or some other cognitive developmental disturbance.

This first volume starts with a reflection of Robert Sternberg of Cornell University, past-president of the American Psychological Association, who discusses the current status of Feuerstein's theory of Structural Cognitive Modifiability (SCM) in relation to theories of intelligence. Sternberg calls Feuerstein's theory as "one of the three most prominent theories of intellectual development of all time, together with Piaget and Vygotsky", comparing his influence to Galileo or Copernicus. Then David Tzuriel of Bar Ilan University gives a brief overview of the theory of Mediated Learning Experience (MLE) and summarizes the extensive research into the developmental aspects of MLE processes carried out informally within the family system and in peers interactions and their effects on children's *cognitive modifiability*. He also describes methodological issues how mediated learning can be operationalized and outcome in terms of modifiability can be measured, using structural equation models.

Jo Lebeer relates current knowledge from the neurosciences with the theory of SCM. He reviews the extensive evidence of the effect of activity-induced neuroplasticity, in animals as well as in human beings, which could form the neurobiological basis of neurocognition through mediated learning experience. MLE is a candidate to constitute the missing link between "activity-driven neuroplasticity" and "self-constructive (re-)organization of the brain", which he has termed "ecological plasticity". Although a direct study of the effect of MLE on neurobiological plasticity mechanisms is still lacking (and would be methodologically hard to realize), Feuerstein's theory was, just as Donald Hebb's theory of the learning synapse, years ahead of this time.

Noami Hadas-Lidor's paper deals with the application of MLE/SCM theory in people with a psychiatric illness. This line of research was also ahead of its time, because nowadays it's becoming more and more clear that people with a schizophrenic psychosis also display cognitive deficits. Hadas shows the effectiveness of MLE-based dynamic cognitive intervention on modifiability. Similarly, Hefziba Lifshitz presents a review on data on modifiability of adults with intellectual disability, showing that these people are able to continue learning for a long time in adult life, thus declaring the concept of a "mental ceiling" to a myth. This is particularly relevant nowadays in the face

of a bulk of research about the risk of development of early Alzheimer's disease in people with Down syndrome.

David Martin in this volume focusses on the cognitive development and modifiability of people with hearing impairment. A summary of research studies on cognitive intervention programs provides a context for the introduction of Feuerstein's Instrumental Enrichment (FIE) Programme as a systematic intervention in different learning environments involving hearing impaired learners; a synthesis of these studies indicates significant positive outcomes for FIE in that context in North America, China and South-Africa. Finally, the only paper in this volume made by a junior, Italian researcher Cristina Vedovelli of the Univeristy of Sassari in Sardinia, deals with an empirical research made in primary schools. Her findings show that the most important modifiability is not so much demonstrable in the children, but more so in the minds and the attitudes of the teacher.

When Sternberg compared Feuerstein to Galileo, he did so to make a point about the need to develop the theory further, based on empirical research, in contrast to creating just a new belief system based on authority. That certainly will be quite a challenge. Taking the Galileo analogy further, that represented a real paradigm shift, with all its characteristics: e.g. being ahead of the current ideas of the time; causing resistance from the "established" authorities (which in Galileo's case lasted a century), even overt hostility; creating believers and disbelievers, etc.. Translated to our times: difficulty to obtain funding from established worldly as well as scientific authorities; difficulty to get published, etc. Does the Feuerstein theory and practice represent a shift in paradigm? The theory that intelligence is structurally modifiable and the practice of interactive assessment certainly are (Lebeer, 2005). The theory of mediated learning, however, is not so revolutionary any more: it can be understood as a socio-constructive theory of cognitive development, which has been supported in one way or another by many prominent psychologists such as William James, Vygotsky, Bruner, Bronfenbrenner and of course Sternberg as well.

The risk of an innovative paradigm however is that people in the face of resistance either drop the idea, or become followers dropping critical thinking. We can observe "a Feuerstein effect", similar to "The Hawthorne Effect" or "Pygmalion Effect" in many of the research reports examining the effect of Instrumental Enrichment. If the method "works", i.e. is claimed to be effective, even though not necessarily showing in statistically significant effects

because of methodological issues (e.g. lack of proper control groups or proper outcome measures), this might be due to the underlying quality of mediation or transmitting a firm belief system by the applicator. After all, the Feuerstein approach depends on the quality of mediation, as he himself stated and also personalized. This represents a particular challenge for future research. In medical literature this is often designated as a negatively loaded “placebo effect”. However, rather than viewing this as a “confounding factor” which needs to be avoided, the quality of mediated learning experience is an inherent element of the approach and constitutes its strength. Despite this methodological difficulty, the papers in this volume have all provided scientific evidence of the importance of MLE in cognitive modifiability. However, research remains difficult because human beings, and certainly brain and mind, in relation to their ecology, are highly complex systems and therefore behave in an indeterministic way (Prigogine, 1980). That means that whatever psychological or educational intervention is made, its results will remain largely unpredictable, contrary to what is expected.

When I met Reuven Feuerstein for the first time on a conference in Budapest in 1990, where the presentation of my PhD results about plasticity in children with developmental disabilities matched with the theory of MLE and SCM, I became even more fascinated by the man and his theories and it was the beginning of a long journey. Committed to study it more profoundly, I went to Israel every year for the next 10 years. It has been a privilege and an honour to have been able to study and work closely with Reuven Feuerstein and his team during the past 25 years. Even today, I must confess that most of my daily clinical work as well as teachings are heavily influenced by him. Feuerstein gave me the inspiration and energy to continue dealing with resistance in the daily hassles. Perhaps my father-in-law, once commenting my endeavours laconically with “it’s 5% inspiration and 95% transpiration” was right after all.

References

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