

Modifiability and mediated learning in the light of neuroscientific evidence of ecological plasticity

JO LEBEER¹

Abstract

This article explores the concept of ecological plasticity in relation to cognitive modifiability and mediated learning. Although direct neuroimaging evidence on the effect of Mediated Learning Experience is lacking up till now, there is some indirect evidence. The brain's development is not finished at birth, but cognitive development is contingent on the development of multiple brain networks. The brain is shaped by experience. The development of mind results from constant building of new synaptic connections as a result of learning activities, generated by a complex puzzle of stimuli: interaction with people, inclusive environments (home, school, leisure,), intervention programmes, socio-emotional experience, and mediated learning experience. Current evidence is reviewed how "environmental enrichment", a well-studied phenomenon from animal studies, can be transferred to human beings. Ecological plasticity is a characteristic of brain development : ecology has "external " as well as "inner" factors, whereby "external" means the whole of the stimuli a person receives from the outside world (information, activities) triggering emotional and learning experiences, whereas by "inner" factors we mean conscious and unconscious experiences. We criticize reductionist and deterministic discourse in much of the literature on brain and behaviour connection. Ecological neuroplasticity thus can be regarded as the neurobiological basis of Structural Cognitive Modifiability theory, which was anticipated by Reuven Feuerstein 50 years ahead of his time. However, at present, no distinction on neuroimaging can yet be made between mere activation and human-mediated activation. The specific action of mediated learning on neurobiological reorganisation of plasticity remains as yet to be researched.

Keywords

cognitive modifiability, ecological neuroplasticity, developmental disability, mediated learning experience