ROLE OF CONTEXT IN COGNITIVE DEVELOPMENT[1]

Gideon Carmi, Hebrew University, Jerusalem, Israel

(Theoretical Exposition and Preliminary On Experiments)

Purpose and Significance

The purpose of this study is to contribute both theoretically and practically within the area of cognitive development and conceptualization. We will discuss the effects of manipulating concept supporting and concept-distracting perceptual cues on performance in cognitive tasks - an area which has been virtually ignored by Piaget and his colleagues. We propose two main effects: 1) that the manipulation of perceptual cues will reveal the capability of both low and middle-class socio-economical-status (SES) children to reason concrete-operationally well before the ages posited by Piaget, or posited by investigators of cognitive functioning of low SES children, once and perceptual dressing of the standard tasks is made more digestible to these children, 2) that by exposing these children to an effectively spaced sequence of perceptually varying tasks which lead up to standard Piagetian or Piaget-like tasks, they will perform successfully also on the latter, again well before the posited age range for such performance. This is intended to serve as a model for accelerating cognitive functioning in general, whether at school, in everyday life or in vocational training.

From a theoretical standpoint, we propose to contribute thereby towards the crystallization of a model of cognitive development which integrates the "cognitive-change position" of Piaget and others, with the "perceptual-change position" of Odom and others (Odom, 1978). This model - which could be called a "cognitive-perceptual position" has been emerging out of field work in "Creative Maths and Science Teaching" with low SES children in Israel2 (1976-81), in Venezuela3 (1978-81), Costa Rica4 (1981) and Brasil5 (1981). This model takes account of the perceptual input as an additional dimension to cognitive processing, yet is closely and causally interwined with the latter. Our model is a continuous model from which Piaget's stage-like structures should, in principle, be derivable without further assumptions as a result of sudden overlaps of continuously changing regions. Piaget's experiments are seen as isolated points, each on another continuous dimension along which a "salience"-paramenter and changes. This model leaves ample room for cultural, social and other differences in cognitive development, especially in the attainment of stage-like behavioral criteria. The model also indicated the theoretic tools for explaining and predicting such differences.

Its major significance should be seen in its potential to provide a theoretical basis as well as practical tools for examining and accelerating cognitive and conceptual development, especially for disadvantaged children.

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