

**SOME IMPLICATIONS FOR THE
MATHEMATICS TEACHER FROM A
STUDY OF CHILD DEVELOPMENT**

**AN ABSTRACT OF
A THESIS
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Two concepts are examined in this thesis. The first is that intelligence is not genetically fixed nor is its development predetermined. The second is that development progresses in stages which are identifiable.

The purpose of the study is to examine the significance of these concepts and to show how they may be used by the mathematics teacher to improve the teaching of mathematics.

R. A. Spitz's data on the effects of "mothering" on the intelligence of institutionalized infants and W. Dennis' study of three orphanages in Tehran are presented as evidence supporting the first concept. Specific experiments by Hebb, Riesen, von Senden, and Köhler which show the effects of experience on the ability of animals and humans to perceive visually and to solve problems are presented as further evidence supporting the concept that intelligence is not fixed and its development not predetermined.

The work of Jean Piaget and his collaborators support the second concept, that development proceeds in definable stages. The child's psychological and intellectual level at various periods and stages is specified in detail. Much of Piaget's data is derived from experimental studies of the child's concepts of number and space and many of these experiments are described since they are of particular interest to

the mathematics teacher.

The data suggests that the mathematical subject matter and method of presentation may be selected by the teacher to correspond with the student's particular stage of development, and suggestions for such matchings are presented.

The study also suggests the need for a mathematics test which may help determine stages of development. Such a test could be used as a teaching device.

Since the proposals in this thesis would probably require costly changes in curricula and textbooks, and also supplementary training for teachers, further study and experimentation are recommended.