APPLYING PIAGET'S THEORY OF COGNITIVE DEVELOPMENT TO MATHEMATICS INSTRUCTION

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ABSTRACT

This paper is based on a presentation given at National Council of Teachers of Mathematics (NCTM) in 2005 in Anaheim, California. It explicates the developmental stages of the child as posited by Piaget. The author then ties each of the stages to developmentally appropriate mathematics instruction. The implications in terms of not imposing unfamiliar ideas on the child and importance of peer interaction are highlighted.

FULL TEXT:

PDF

REFBACKS

- There are currently no refbacks.

Theory of Cognitive Development. Slide 9. Cognitive development is Jean Piaget’s theory. Through a series of stages, Piaget proposed four stages of cognitive development: the sensorimotor, preoperational, concrete operational and formal operational period.[21] The sensorimotor stage is the first of the four stages in cognitive development which “extends from birth to the acquisition of language”.[22] In this stage, infants progressively construct knowledge and understanding of the world by coordinating experiences (such as vision). Piaget’s second stage, the pre-operational stage, starts when the child begins to learn to speak at age two and lasts up until the age of seven. During the Pre-operational Stage of cognitive development, Piaget noted that children do not yet understand concrete logic Jean Piaget’s cognitive development theory discusses how an individual progresses through the learning process in stages. This paper focuses on Jean Piaget’s developmental stages and how to apply this theory to the learning of mathematics. Each stage has been described and characterized, highlighting appropriate mathematical techniques that help to lay a solid foundation for learning of mathematics in future. General implications of the knowledge of stages of development have been incorporated for instructions in mathematics. Keywords - Cognitive Development, Infinite Sets, Jean Piaget’s Theory, ...