

Young Children and Powerful Ideas: Snapshots of Creative Learning by Constructing from Early Childhood Education Settings

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Abstract

Papert, in 'Mindstorms', unfolded a fascinating learning experience involving 'Children, Computers and Powerful Ideas'. This poster aspires to offer a fascinating learning experience involving 'Young children and Powerful Ideas'; a learning experience though, that doesn't involve computers. Through a collection of snapshots presenting young children (three to six-year-olds), involved in tasks of creative learning by constructing, from real early childhood education settings, this poster demonstrates how Papert's powerful ideas can be applied without the use of computers. It also demonstrates how when Papert is applied in the classroom little children gain access to big ideas.

This poster presents snapshots of young children involved in tasks designed and implemented by seven early childhood educators that were involved in in-service and pre-service teacher training courses on developing mathematical activities for young children. The main aims of the courses that were organised and facilitated by the first author of this poster, were to train the participants to deal with their practice as teacher-researchers and to support the participants in developing scientifically justified mathematical activities through a process of designing, implementing, reflecting and revising. At the beginning of the courses, the teachers were exposed through workshops to the constructionism tradition and Papert's conviction that mathematics education should aim not at teaching children mathematics but at teaching children how to think as mathematicians. Creativity, problem solving and mathematical literacy (presented as a combination of experiences, skills, attitudes, epistemological awareness and conceptual understanding) were some of the courses key themes.

The tasks presented in this poster, that were designed and implemented by the seven teachers, involve problem solving-based activities where children (a) had to construct shapes by composing other shapes, (b) create flowers with the use of different shapes angles and (c) construct triangles, quadrilaterals and circles with simple every day materials and objects. Through the snapshots presented in the poster, with the use of children's constructions and representations, photographs and conversations, one can detect the results of applying Papert in early childhood education settings. Thus, through the poster, Papert's conviction in (a) the importance of learning-by making and thinking-as-constructing, (b) providing children with objects-to-think-with, (c) accepting the validity of multiple ways of knowing and thinking and (d) acknowledging that 'when knowledge can be broken into mind-size bites it is more communicable, more assimilable, more simply constructable', comes to life through little children's involvement in creative learning.

Keywords

Young children, construction task, teacher training, creative learning