

Pre-parative and Post-parative Play as a Key Component of Mathematical Problem Solving

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Abstract: It is well known that educators such as Froebel, Dienes, and Gattegno recommend periods of free play with material objects before introducing mathematical relationships that can be come to be seen as embodied in the apparatus. In this paper I advance the conjecture that inviting learners to engage in a kind of mental free play with the situation or context proposed in a problem could serve to enrich their sense of the underlying mathematical relationships which are needed in order to resolve the specific problem. Also, after solving the initial problem, playing with a successful method and varying quantities in the problem can enrich the example space of solvable problems and increase the chance of similar actions becoming available when faced with similar problems in the future. The psychologists' distinction between play and exploration is considered in the context of mathematics.