Teaching Mathematical Verbal Problem Solving through Teacher Action Research

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Abstract

Problem solving takes place in many fields of education and it has an important place especially in math education. Problem solving enables individuals to understand math better and acquire the necessary skills for math education. In the process of problem solving, individuals are able to understand and use the information about math, associate this information, develop new mathematical concepts and find opportunities to explain different thinking styles. Studies on the ability of children to solve verbal problems in preschool period show that the level of problem solving success of children is low. For this purpose, it has been investigated how children’s verbal problem solving skills will develop.

This study was conducted as a teacher action research in order to develop verbal problem solving skills of preschool children in early childhood education. The participants of this study were 15 children between the ages of 5 and 6 attended pre-schools in Adana, a city in southern Turkey. The research consisted of three successive cycles. The first cycle was used large group math activities, the second cycle was used small group math activities and the third cycle was used individual math activities. After each cycles were completed, the cycle was commented with regards to researcher and children. In addition, “The verbal problem test” was carried out as a pretest-posttest to determine if there is a significant difference in the children’s verbal problem solving skills. The results were analyzed using a Wilcoxon Signed Rank Test.

As a result, in the process of developing verbal problem solving skills of preschool children, the teacher demonstrated some behaviors which encouraged the learning, implemented the steps on problem solving and also some behaviors limited the learning. It was noted that the researcher had some difficulties due to both internal and external factors in the implementation stage of verbal problem solving math activities. Most of these problems were overcome with the solutions the researcher came up with in the action research. The researcher stated that verbal problem solving mathematical activities are applicable in early childhood education. In addition, as a result of the Wilcoxon Signed Ranks test revealed that children had a significant difference in verbal problem solving skills.

Key Words: preschool children, math education, problem solving, early childhood education