THE EFFECT OF TEACHING OF THE CONCEPTS OF TRANSFORMATION GEOMETRY BY THE EXCHANGE OF KNOWLEDGE METHOD ON ACADEMIC SUCCESS

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Abstract

The reflection of transformation geometry and the difficulties in teaching concepts related to rotation transformations are already needed to be taught for different approaches. This is the method of exchange in knowledge. In this research, it is aimed that the teaching of the gains of reflection of transformation geometry and rotation transformation with the method of exchange in knowledge, which is a targeted learning method, will accomplish the success of prospective teachers.

In the research, quasi-experimental design with pre-test and post-test control group was used. The research was carried out with the participation of 66 prospective teachers studying in the Department of Elementary Mathematics Education of Pamukkale University Faculty of Education and taking Analytical Geometry course. Candidate teachers were determined as 32 experimental and 34 control groups by applying the Reflection and Rotation Test adapted by the researcher. In this research, Reflection and Rotation Test was used as data collection tool. The Reflection and Rotation Test was developed by Dixon (1995). In the research, exchange of information method was applied to experimental group and traditional teaching method was applied to control group.

Parametric and non-parametric tests were used according to whether the data obtained from the study showed normal distribution.

There was no significant difference between the achievement scores of the experimental and control groups according to the pre-test results ($p > .05$). The difference between the pretest and posttest scores of the experimental group in which the method of exchange in knowledge was applied was found to be statistically significant ($p < .05$). There was a statistically significant difference in the pre-test and post-test scores of the control group in which the traditional teaching method was applied ($p < .05$). There was no statistically significant difference in the post-test results of the experimental group in which the method of exchange in knowledge was applied and the control group in which the traditional teaching method was applied ($p > .05$). However, while the average of the last test of the experimental group in which the method of exchange in knowledge was applied was 26, the average of the experimental group was higher since the average of the control group in which traditional teaching was conducted was 24.32. From this it can be said that the prospective teachers in the experimental group in which the method of exchange of knowledge is applied benefited better from the method.

Keywords: Transformation geometry, Method of exchange in knowledge, Reflection and rotation