

Birleştirme Tekniğine Dayalı Fen Bilimleri Öğretiminin Tutum Akademik Başarı ve Kalıcılığa Etkisi

The Effect of Jigsaw Technique Based Science Instruction to Attitude Academic Achievement and Permanence

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EXTENDED SUMMARY

Individuals in all area of life are faced with the effects of science markedly. In this sense, science education will be given in schools is very important. One of the major difficulties in teaching science issues to students is the low level of motivation and desire to learn. One of the biggest reason is that using teaching methods and techniques. Science education researches in recent years are effective in achieving the goals of science education in the constructivist approach to learning and teaching reveals that allows for new applications. One method of based on constructivist approach is the cooperative learning. Cooperative learning is a student-centered teaching method of student has undertaken active role. The jigsaw technique is one of the techniques of cooperative learning methods. In the jigsaw technique they are formed in groups of 3-7 students. In these groups, students undertake the role of both teacher and student. It has created an environment where everyone's contribution is valued rather than an environment dominated by a few students. It was determined that the jigsaw technique from cooperative learning techniques is one of the least-studied technique compared to other techniques. Hence the purpose of this study to determine the primary school in the fourth grade science lesson teaching techniques based on jigsaw the attitudes of students towards science lesson, effect on the permanence of their learning and academic success. With this purpose to answer the following sub-problems:

Experiment and control groups'

- 1) Is there a significant difference between pre-test scores of attitude scale and academic achievement tests?
- 2) Is there a significant difference between post-test scores of attitude scale and academic achievement tests?
- 3) Is there a significant difference between scores of permanence test?

Method

Pretest-posttest with control group design was used in the study. Research was carried out at a state primary school of Kastamonu province in the fall semester 2015-2016 academic year. The working group of the study consisted of 62 students in two fourth-grade classes. One of the classes was designated as experiment group (N=30) and the other was control group (N=32). Lessons in the experiment group were carried out with jigsaw technique and in the control group were carried out with current curriculum. As data collection tools were used the achievement test and attitude scale developed by the researcher. Data were analyzed using SPSS 21.0 statistical software package. Independent t-test was used to compare the scores of the experiment and control groups. Findings was tested $p < .05$ level of significance.

Findings

At the beginning of the experimental application of the experiment and control groups there was no significant difference between both achievement test and attitude scale pre-test success. This result may be interpreted as equivalent to control and experiment groups at the beginning of the research. At the end of the experimental process, findings shows that a statistically significant difference between the experiment and control groups' academic achievements, attitude towards science course and permanence test scores in favor of experiment group. In this sense, finding may be interpreted the jigsaw technique administered in the experiment group is more effective than the current education program.

Discussion and Conclusions

In this study, jigsaw technique is used. It's one of the teaching techniques of cooperative learning methods. At the end of the study jigsaw technique based science education students' academic achievement has been shown statistically significant increases. Located in the literature in different areas and at different grade levels made using jigsaw techniques research results are similar with the results of this research. A positive impact on students' attitudes at different grade levels of cooperative learning is demonstrated by research. This research also jigsaw technique, one of the teaching techniques of cooperative learning techniques, positive attitudes towards the course was concluded to be effective to improving. In addition to this, the learning-based training jigsaw techniques applied in the experiment group was determined to provide realization of more permanent. Achieved this result supports the results of some studies in the literature. Cooperative learning techniques enable students to actively participate in the learning process by providing students however have to interact with their peers, increasing efficiency and interest in the course of learning. However, this technique is more effective in learning knowledges

as permanent. In this sense, third and fourth grade primary school in science course issues should be expanded use of cooperative learning techniques. The next researches, can be examine the effectiveness of jigsaw technique in elementary school different grade level and courses.