

Sanal Laboratuvar Uygulamalarının Öğrenci Başarısına ve Öğrenilenlerin Kalıcılığına Etkisi: Mersin-Erdemli Örneği*

Effect Of Virtual Laboratory Practices Of Student Success And Learning Permanence: Mersin-Erdemli Sample*

DOI= [10.17556/jef.08804](https://doi.org/10.17556/jef.08804)

Menevşe Şükran DUMAN**, Gülşen AVCI***

Extended Summary

Purpose

The aim of this study is to investigate the effect of virtual laboratory practices of student success and learning permanence. For this purpose the questions that needs to be answered are:

- 1.What is the impact on the academic achievement of eighth graders science and technology course in "States of Matter and Heat" unit prepared in the application of virtual laboratory?
2. Is there an impact on student achievement in science and technology lesson "States of Matter and Heat" unit of the processing virtual lab activities?
- 3.Is there an impact in providing information on student persistence of the virtual laboratory applications?

Method

In the study quasi-experimental design with control group is used which is widely used in quantitative studies. The participants are 31 eight grade students who is studying in the district of Mersin Erdemli. The data is gathered using unit achievement test consisting of 25 multiple choice questions. In the analysis of the pre-test, post-test and permanence test data, t-test for independent-sample and dependent sample is applied. This study includes topics in the states of matter and heat unit which is located in the science and technology curriculum.

* Bu çalışmanın özeti International EJER Congress 2015' de bildiri olarak sunulmuştur. Duman, M.Ş. (2015)"8.sınıf öğrencilerinin Maddenin Halleri ve Isı ünitesinde karşılaşılan kavram yanlışlarının belirlenmesi ve giderilmesine, başarı düzeylerine ve öğrenilenlerin kalıcılığına sanal laboratuvar uygulamalarının etkisi" isimli yüksek lisans tezinden alınmıştır.

**Öğretmen, Mersin İl Milli Eğitim Müdürlüğü, e-posta:m.cortancioglu@hotmail.com.

***Doç.Dr.Gülşen AVCI,Mersin Üniversitesi, e-posta:gulsen4@hotmail.com

Results

Before applying the study, unit achievement test applied as a pre-test to students in the study group. According to the pre-test results, significant difference was not observed in two groups designated as experimental and control groups. The unit, in the experimental group it was carried out on the basis of the virtual lab activities. The teacher-centered teaching was performed in the control group. Both groups have also been shown to increase test scores administered at the end of the last unit. However, this increase is observed in the experimental group was higher. After eight weeks, when the application is finished, unit test was applied to the study group success as a retention test. According to the results, obtained from retention test, it was found that the retention test scores of experimental group students were higher than the control group. In this study showed that the virtual laboratory practices is more effective than the teacher-centered teaching method on student success and learning permanence.

Discussion

When the results were analyzed, the students in the experimental and control groups were formed in significant differences in academic achievement. When considered that the education process took ten weeks in both groups, this difference is assumed as normal. But academic success in the experimental group was significantly higher than the control group. During the application study, the students located in the experimental group developed a positive attitude to performed experiments in a virtual laboratory, and they were found to be at a high level of interest in the course.

Conclusion

According to the results of this study, it has made the following recommendations:

- Virtual laboratory applications used in the study used different units of science and technology, in different courses or in different classes.
- Other studies done by directory data obtained after teaching with the virtual laboratory applications.
- Other than teacher-centered teaching and other teaching methods and techniques, comparing the effectiveness of virtual laboratory applications can be examined.
- Virtual laboratory programs can be gained by students in the laboratory to laboratory experiments showing that there are insufficient or without laboratory schools.

* * * *