

**A Pilot Study for Determining The Effect of V-Diagrams On
Development Of Concepts Related To Electric Current**

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Abstract

The aim of this study is to determine the effect of V-diagrams on development of concepts related to electric current and students' affective and psychomotor skills. The study is conducted with twenty, 7th grade primary school students in Trabzon. To collect data reflective writings that students written after the application, V-diagrams students prepared during the application and data collected from observation forms to determine students' affective and psychomotor skills are used. At the end of the study it has seen that V-diagrams improve students' psychomotor skills, it has contribution to conceptual learning in cognitive area and it affects students' lower level affective skills as receiving, responding to phenomena.

Keywords: V-diagrams, electric current, emotional skill, psychomotor skill.

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Extended Summary

V-diagrams were developed by Gowin and Novak (1984) during 1970s for helping students constructing knowledge, establishing a relationship between theoretical knowledge and laboratory practices to prepare lab reports more useful and understandable. V-diagrams can be created by drawing a large letter V. It includes three main parts as conceptual part, methodological part and focus question. The focus question must be placed in the center and it should specify what is wanted to be finding out, and it should be linked to the conceptual and methodological part. Also it should be written with considering what the purpose of the experiment is and what you will gain as a result. The focus question could be a question which should be proved experimentally, a key concept or a question laying down the purpose of the experiment. A list of utensils used in the experiment are found at the end point of shape V. "Theories and Principles" title should be filled, with the theory and principles that are going to help to achieve the result of experiment, before coming to laboratory, is placed directly beneath the conceptual part. "Concepts" title which will include the concepts, principles, terminology and symbols about the experiment should be placed under the heading of the "theories and principles" title. Data obtained from the experimental measurement, observation and conclusion should be recorded under the "Recorded" part.

Purpose

The aim of this study is to determine the effect of V-diagrams on development of concepts related to electric current and students' affective and psychomotor skills.

Method

The study was conducted in spring term 2010-2011 training year with twenty, 7th grade primary school students in Trabzon. The present study was carried out as a pre- experimental post-test model research design. In the present study reflective writings that students written after the application, V-diagrams students prepared during the application and data collected from observation forms to determine students' affective and psychomotor skills are used to collect data. At the beginning of the study sample was informed about V-diagrams and how to prepare. Then they were divided into four groups, each consisting of five students. Experimental materials were given to each group. Before the focus question was asked an event is described and three sub questions were asked about this event. Students were asked to complete the remaining part of the diagram during and after the experiment. V-diagrams that students have prepared are examined to determine their ideas about electric current.

Results

Data obtained from V-diagram are given in sub- headings “theories and principles”, “focus question”, “reflective writing”, “and affective skills observation form”, “psychomotor skills observation form”.

Conclusion

Even though each student is explained how to fill the V-diagram a portion of the students filled incorrectly. As the groups are crowded it has seen that some of the students do not ask questions and do not participate to experiment and when observation data were examined. At the end of the study it has seen that V-diagrams improve students psychomotor skills, it has contribution to conceptual learning in cognitive area and it effects students’ lower level affective skills as receiving, responding to phenomena. As the classroom is crowded and unsuitable for group discussion some troubles were revealed n implementation process.

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