



An Application to Close the Gap in General Chemistry Teaching: Chemistry Visualisations

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Abstract

The purpose of the present study to examine the effects of the chemistry visualisations on the comprehension of prospective science teachers in the topic of "Atom" in the introductory General Chemistry Lesson. The current study used a mixed-method approach within a pre-experimental static group comparison design. It was based on qualitative data collection and data analysis procedures. Experimental group and control group consist of forty (40) and thirty-nine (39) prospective science teachers (freshman students) respectively. In both groups, topic were taught by the second researcher of the present study. While the chemistry visualisations were used in the experimental group in teaching the topics; any chemistry visualisations were not used in the control group. Open-ended questions, which were prepared by the researchers based on previous related studies, were used to collect data on the conceptual understandings of prospective science teachers. The data were analyzed by content analysis and categorical findings were reached in the level of "understanding, partial understanding and no understanding/non-response" regarding the conceptual understandings of prospective science teachers. The findings revealed that the conceptual understanding levels of the experimental and control groups differ according to the above categories. In the light of the findings, we could say that chemistry visualisations contributed to the comprehension of prospective science teachers in the topic of "Atom" in the introductory General Chemistry Lesson. The findings have been discussed by comparing them with the previous studies and some implications have been made.

Keywords: *chemistry visualisation, animation, simulation, prospective science teachers, chemistry teaching;*

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