

ASSESSING THE EFFICACY OF COMPUTER SIMULATION IN IMPROVING PRE-SERVICE TEACHERS' CONCEPTUAL UNDERSTANDING OF CHEMICAL BONDING: A CASE STUDY

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ABSTRACT

This study used computer simulation to enhance pre-service science teachers' proficiency in chemical bonding. The study's design was a case study employing a single group pre-test and post-test action research approach. A total of forty-four (44) first-year pre-service science teachers from St. Ambrose College of Education (SACE) who were enrolled in the general chemistry course made up the sample. The study involved a sample of forty-four (44) 100-level pre-service science teachers. Out of the 44 pre-service science teachers, 24 (54.56%) were men and 20 (45.46%) were women who participated. The pre-service science teachers in an intact class were chosen using a purposive sampling technique of the non-probability sampling procedure. For the intervention activities, lesson plans, worksheets, and computer simulation models were used as the teaching resources. The mean performance for the pre-intervention tasks was 3.14 (SD=1.07), and it climbed to a mean score of 6.60 (SD=1.15). This implied that the use of the computer simulation had enhanced pre-service teachers' conceptual understanding of chemical bonding as their average performance improved significantly following the intervention. The study found that the students' conceptual grasp of chemical bonding was improved by the incorporation of computer simulation. To demystify the abstractness of chemistry concepts and allay students' fears about studying chemistry, it is advised that computer simulation be employed in the teaching and learning of chemical concepts.

Keywords: Chemical- bonding, computer, simulation, improve, performance.

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