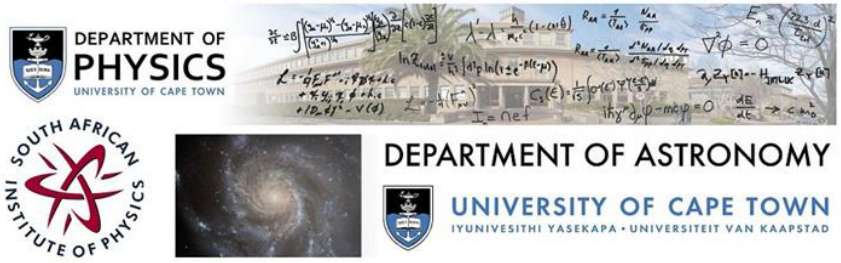

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COMPARISON OF TWO MODELS OF PROBLEM SOLVING IN PHYSICS: A STUDY OF SECONDARY SCHOOL STUDENTS IN ADAMAWA STATE, NIGERIA

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Abstract content
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While problem solving is a key part of learning physics, it is not easy to teach. Thus, a number of models have been proposed that attempt to provide some structure to the process, each emphasizing different aspects and differing in approach. However, it is not clear whether these differences lead to different outcomes or, to what extent, they are dependent on the nature of a particular problem. As part of an attempt to find a way to answer these questions two problems solving models were compared in a study with secondary school students in which the following two models were used: (a) Understanding Basic Mechanics (Reif, 1995) and (b) the Logical Problem-Solving Model (Heller and Heller, 1995). The study consisted of the construction of four problems, two qualitative and two quantitative open-ended questions and administered to form four and form five students. After applying the two different models in solving the problems, a comparison was made in terms of the strengths and weaknesses that emerged from the exercise. The key finding was that Reif's model appeared to be well suited for approaching qualitative problems while that of Heller and Heller worked well for solving quantitative problems.

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