

## **Effect of Instructional Materials on Academic Performance in Heat Transfer Concept among Secondary School Physics Students in Fagge Educational Zone, Kano State, Nigeria**

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**Abstract :** This study investigated the effects of instructional materials on academic achievement among senior secondary school students on the concept of Heat Transfer in physics in Fagge Educational Zone, Kano State Nigeria. The population consisted of SSII students from 10 public schools. Out of this, 87 students were randomly selected from which 24 males and 22 females formed the experimental group and 41 students as control group. A quasi experimental design with pretest and post-test for both the groups was adopted. Two research questions and null hypotheses guided the conduct of the study. The experimental group was exposed to teaching using instructional materials while the control group was taught using the normal lecture mode. Heat Transfer Performance Test (HTPT) was used for data collection. The instrument was validated by experts in the science education field. A Pearson Product Moment Correlation (PPMC) was used to determine the reliability co-efficient and was found to be  $r=0.83$ . The research questions were answered using descriptive statistics while the hypotheses were tested at  $p \leq 0.05$  level of significance using t-test. The result obtained from the data analysis showed that students in experimental group performed significantly better than those in the control group and that there was no significant difference in the academic performance between male and female students in the experimental group. Based on the findings of this study, it was recommended among others that the physics teachers should be receiving regular training on the importance of using instructional materials whether ready made or improved in their teaching.

**Keywords :** heat transfer, physics, instructional materials, academic performance

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