BASIC SCHOOL SCIENCE TEACHERS' KNOWLEDGE FOR TEACHING BASIC ELECTRONICS

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ABSTRACT

The study was conducted to investigate basic school Integrated Science teachers' Pedagogical Content Knowledge (PCK) levels and the challenges they face teaching basic electronics. A mixed-method approach using the sequential explanatory design was adopted for the study. Data was collected using a questionnaire and an interview guide. Initially, the questionnaire, which had both task-based and open-ended items was used to collect data from seventy-four (74) purposively selected Basic School Integrated Science Teachers (BSIST) who taught at Primary 6 and Junior High School (JHS) 2. Subsequently, a semi-structured interview guide was used to collect data from six purposively selected Integrated Science teachers who had moderate PCK levels. The quantitative data was analysed using frequency counts and simple percentages, while the thematic analysis was used to analyse the qualitative data. Results obtained from the study show that 90.5% of the BSIST have low PCK for teaching basic electronics. The results also show BSIST face challenges such as limited content knowledge, large class sizes, and limited-time in teaching basic electronics. Due to the low PCK levels and challenges BSIST face, low students' academic achievement in basic electronics is to be expected. The study, therefore, recommends the development of basic school Science teachers' knowledge base for teaching basic electronics through professional development programmes that consider their differing needs.

Keywords: PCK, Integrated science teachers, basic electronics, challenges, basic schools.