

EFFECT OF IN-SERVICE TRAINING ON SCIENCE TEACHERS' SELF-EFFICACY BELIEFS AND CONTENT KNOWLEDGE COMPETENCIES IN BASIC ELECTRONICS IN THE GHANAIAN JUNIOR HIGH SCHOOL CONTEXT

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ABSTRACT

Pupils, particularly girls, who enter secondary schools with high favourable attitude towards science and interest in science, soon see these qualities eroded by their experience of school science. Teachers are the fulcrums of pupils' school science experiences in Junior High Schools (JHS) basic electronics. This study therefore, was to determine JHS science teachers' self-efficacy beliefs and content knowledge competencies in basic electronics and whether attending an in-service programme could change these characteristics. The study involved 46 participants; JHS science teachers in Kassena Nankana Municipal, in the Upper East Region of Ghana. Science teachers were assessed using pre-workshop questionnaires and again, with post-workshop questionnaires after an in-service workshop on JHS basic electronics. The data collected was subjected to qualitative analysis and an inferential t-test analysis for paired (dependent) samples. The findings of the study showed that science teachers had initial moderate self-efficacy beliefs but developed high self-efficacy beliefs after the in-service training. Also, the study showed that JHS science teachers initial content knowledge competencies ($MS=32.8\%$, $SD=22.86$) needed improvement as compared to their excellent content knowledge competencies ($MS=89.9\%$, $SD=8.49$) in the post-workshop state. The differences in content knowledge competencies was significant ($t(45) = 16.477$, $p = 0.000$). These findings therefore, suggest that regular and continual in-service training targeting specific sensitive challenging content areas in basic electronics (science) should lead to teachers' developing the coping abilities to teach the content area and meet the specific task needs of pupils.

Keywords: In-service training, self-efficacy beliefs, Content Knowledge Competencies, Electronics, JHS, Ghana.