This paper generally sought to investigate the integration level of ICT in the training of teacher trainees at University of Education, Winneba. All level 100 students were purposive targeted in particular since they were registered to take the ICT course. One hundred of the Level 100 students were randomly selected in class to perform tasks in ICT. As part of information gathering for this research work, set tasks were prepared for the students to perform and an observation checklist was used to collect data. All these activities were done both before the intervention and after the intervention. In order to determine if the observed differences in performance of activities were statistically significant, the chi square test of independence was used. There were statistically significant relationship between the success of the tasks before or after the intervention was made. It was established that the interventions had resulted in the improvement of the ability of the respondents to undertake various ICT tasks. It is therefore recommended that the university should continue with the integration of ICT in the programmes offered in the university