

IMPACT OF TEACHING AND LEARNING PROCESS ON STUDENTS' SCIENCE LEARNING: A CASE STUDY IN BADULLA EDUCATION ZONE

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The teaching-learning process is vital in education. Thus, the results of a successful teaching-learning process are invaluable. However, it is not easy to separate the learning process from the teaching-learning process, as they interact closely. Therefore, it is essential to recognise the impact of the teaching and learning process on students' science education. Three hundred students and 25 teachers from GCE Ordinary Level classes from 21 schools in the Badulla Education Zone were used to achieving this goal. Mixed methods were used in the study. From that, simple random and stratified sampling techniques were used in the quantitative method. The purposive sampling technique was used in the qualitative method. Data were collected from questionnaires, interviews, and observations. Data were analysed using statistical packages and thematic analysis techniques. The information on the teaching-learning process was collected under the following factors: teaching strategies, teaching methodology, feedback and evaluation, and positive and negative reinforcement. According to the results, there was a linear correlation between Science scores, teaching methods and materials, teaching strategies, feedback and evaluation, and positive and negative reinforcement ($p < 0.05$). Similarly, the Pearson correlation coefficient values (r) of the above variables were 0.747, 0.723, 0.742, and 0.695, respectively. Furthermore, there was a very strong linear positive correlation among factors such as teaching strategies vs teaching methods and materials ($p < 0.0001$, $r = 0.935$) and teaching strategies against feedback and evaluation ($p < 0.0001$, $r = 0.954$). Furthermore, qualitative analyses showed similar results with notable influences of the following themes on the teaching-learning process of science: teaching strategies, teaching methodology, feedback and evaluation, and positive and negative reinforcement for student performance. Therefore, by enhancing the quality and effectiveness of the teaching-learning process, students' academic and non-academic achievements can be improved.

Keywords: Correlation, GCE (O/L), Science, Teaching-learning process