Ngeny, P. (2020). Evaluation of Implementation of Google Classroom on Science, Technology, Engineering and Mathematics Subjects by Secondary School Teachers in Nandi County, Kenya

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Abstract

The COVID-19 pandemic is an unprecedented global crisis, affecting human health and economic welfare across the globe. The pandemic has resulted in economic slowdown, affecting education, trade, investments, growth and employment. Learning institutions were closed down in Kenya in March. Various efforts have been put in place by the Ministry of Education (MoE) to ensure that learning goes on, particularly online learning. Secondary teachers of Mathematics and Sciences were trained by Center for Mathematics, Science, and Technology Education in Africa (CEMASTEA) and MoE on the use of Google classroom in teaching and learning. The purpose of this study therefore is to evaluate the implementation of Google classroom on Science, Technology, Engineering and Mathematics (STEM) subjects by Secondary School teachers in Nandi County. The objectives of the evaluation are to establish: the impacts of Covid-19 on the teaching and learning of STEM subjects; the extent of development of Google classroom by teachers; the extent of designing teaching and learning resources with their applications by teachers; the extent of implementation of Google classroom in teaching STEM subjects; the relationship between enrolment rates of students in Google classroom among teachers and the challenges faced by teachers in the use of Google classroom in teaching in Nandi County. This study will employ Concurrent Mixed Evaluation Design where Causal comparative Ex-post Facto design will be used to conduct the quantitative study and Phenomenological design will be used to conduct the qualitative study. The target population of the study is 234 teachers who were trained during the 2020 INSET and 36 trainers. All teachers will be put into four strata according to the subjects they trained (Mathematics, Physics, Chemistry and Biology). A sample of 10 teachers will be selected from each strata and two trainers in each subject will also be selected to participate in the study by use of simple random sampling technique. The County Trainers' Representative too will be selected purposively. The total sample size will be 49 respondents. An interview guide will be used to collect data from the County Trainers' Representative while structured questionnaires will be used to collect data from the teachers and trainers. Piloting of the instruments will be done to validate them. Test-retest method will be used to test for the reliability of the evaluation instruments. Qualitative data from the interview guide will be coded into themes and categories. Data from the questionnaire will be analyzed using both descriptive statistics and inferential statistics. Frequencies, means, standard deviation and percentages will be calculated. Chi-square test will be used to test the relationship between enrolment rates of students to Google classroom among teachers in Nandi County. Data will then be presented using tables and graphs. The findings of the evaluation will inform CEMASTEA, Ministry of Education and teachers on the extent of the achievement of objectives set in the use of Google classroom in teaching and learning of STEM subjects during Covid-19 pandemic.

Keywords: Implementation; Google Classroom; Secondary School Teachers