

The Effect of Active Teaching and Subject Content Coverage on Students' Achievement: Evidence from Primary Schools in Kenya

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Abstract

There is a growing public concern in Kenya over the persistent gap between those schools that are consistently ranked at the top and those ranked at the bottom of the annual Kenya Certificate of Primary Education (KCPE) examination league tables. This has raised the issue of inequality in educational opportunity. Our primary concern in this paper is to understand some of the classroom-school factors that may explain the persistent differences in achievement between the top and bottom schools. We focus on time-on-task (the length of exposure to any particular teaching and learning task) and curriculum content, and ask whether this explains the difference in performance. We test the following hypotheses: differences exist on teachers' time-on-task between low and high performing schools; greater teacher time-on-task has a positive effect on student gain score; and greater content coverage has a positive effect on student achievement. For the student achievement gains, we use item response theory test scores of 1889 Grade 6 pupils from 70 schools in Kenya. Data on time-on-task were generated from 70 maths lessons observed in these schools, while content coverage was developed from students' maths note books for the entire period they were in Grade 6. The study was conducted by a team of researchers at the African Population and Health Research Center (APHRC) with funding from Google.org. Using two level hierarchical modelling, we control for pupil, teacher and school factors. Results show that exposure to content is positively correlated with pupil gain scores (gain score is the difference in score between test at time t1 and test at time t2 of the same pupil taught by the same teacher). Maths teachers in both bottom and top performing schools spend the same proportion of time-on-task. However, we do not find that time-on-task is related to achievement in this sample.

Keywords: Time-on-task, Content coverage, Achievement, Item response theory, Gain score, Opportunity to learn

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