

# CAN AN EXTRA YEAR AT HIGH SCHOOL IMPROVE ACHIEVEMENT?

For countries in the developing world improving the education outcomes of their citizens is a central and ongoing challenge. **Christopher Ksoll** and **Kim Lehrer** use the recent experience of Ghana to consider whether an additional year of schooling has a causal impact on pupil's achievement in their high school exams.

## Estimating impacts of country-wide education reforms on achievement is often complicated by a lack of comparable control-groups or tests.

Educational reforms typically affect the whole population so that observed changes in test scores might reflect changes in grading or test difficulty rather than learning. In this paper we analyse the impact of an additional year of high school in Ghana on high school leaving test scores where we observe a credible control group, Nigeria.

The high school leaving exams in both Ghana and Nigeria – the West African Senior School Certificate Examination – are identical for a subset of subjects in any given year. Ghana implemented a reform for the 2011 graduating cohort that extended senior high school from three to four years. The target knowledge assessed by the exam remained the same.

Compared with previous years, the cohort receiving an additional year of education performed much better on the tests, with approximately 70 percent passing the test in 2011 compared with just below 50 percent in 2008 and 2009. Receiving a credit pass in six (specific) subjects – the requirement for admittance to university – doubled from 15 percent to 30 percent. These are very large gains, statistically and economically significant.

We then turn to studying heterogeneous impacts. We find that there was no difference

between achievement gains of girls versus boys. The extra year benefitted students from weaker schools most. At the individual level, the non-parametric evidence on the whole distribution of grades suggests that students in the middle of the distribution of test scores benefitted most. Both results suggest that

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the better students in poorer schools might have made particular advances.

We then look at our control group, Nigeria. We find that test scores in Nigeria also rose during this period, though by much less. Taking into account that these changes might have been due to changes in the test difficulty reduces our estimate of the impact of the extra year somewhat. Even with this reduction, on average, the additional year that Ghana implemented for the 2011 graduating cohort lead to approximately 15 percent increase in passing rates in Ghana (when we use Nigeria's definition of passing) relative to previous graduation cohorts, and relative to Nigeria over this period. These achievement gains are significant and large.

Our research contributes to the literature on returns to education by focussing on the intermediate outcome, namely achievement. Achievement is rarely used to measure

outcomes of large-scale policy reforms, and our analysis reveals both the power and pitfalls of this measure. On the one hand, it can be used to evaluate policies almost immediately. On the other hand, it requires a credible control group, as our results would have been upward biased if we had not been able to account for changes in test difficulty that also affected Nigeria.

Lastly, our research has substantial policy implications. The quality of students is decried by tertiary institutions as being quite low. We show that extending high school by one year can lead to students who are better prepared. This is a particularly relevant topic in developing countries such as Ghana, where, previous to the reform, half of the students did not pass the school leaving exams and over 60 percent did not achieve grades that permitted them to attend university.

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