The Consequences of Being behind Grade for Educational Outcomes in Rural Malawi

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BACKGROUND

This paper studies the effects of lagging behind grade for age on educational attainment and achievement in rural Malawi. Lagging behind grade, is an indicator of schooling progress, common in sub-Saharan Africa, which has potentially harmful effects. Prior research has shown that factors that cause students to fall behind such as delayed enrollment and grade repetition are directly linked to negative outcomes including pregnancy-related drop-out risk and worse learning outcomes (Grant and Hallman 2006; Liddell and Rae 2001). Research has shown that the effects of being behind grade for age can even spill over to classmates. For example, interaction with classmates at least two years older increases the likelihood of sexual activity for adolescent girls (Lam et al. 2009). The purpose of studying these outcomes is to determine whether being behind grade for age leads to a long-term disadvantage relative to adolescents who are not behind grade or whether it merely creates a delay in achieving a certain level of education allowing students behind grade to eventually catch up to their age mates. In addition to delineating the general effects of lagging behind, it is important to explore the cause for the lag. Is it delayed entry, grade repetition, withdrawal and re-enrollment? Which cause is the most detrimental to outcomes? This is important as there may be heterogeneity among these different groups of behind grade students. For instance, children with poor health are more likely to enroll in primary school late (Fentiman, Hall and Bundy 1999) while children with lower school performance in early grades are more likely to repeat a grade (Gomes-Neto and

Hanushek 1994; Liddell and Rae 2001). These differences can affect the pathways through which being behind grade affects schooling and other outcomes.

HYPOTHESES

The main of objective of this paper is to study the effects of lagging behind grade for age. The outcomes of interest are (1) age at school leaving, (2) literacy, and (3) numeracy. Overall, it would be expected that being behind grade would be detrimental to educational attainment and achievement.

DATA

Data come from the Malawi Schooling and Adolescent Study (MSAS), a longitudinal survey conducted from 2007 to 2011 by the Population Council that interviewed adolescents from Balaka and Machinga, two rural districts in the southern region of Malawi. The study provides a wealth of information on factors associated with schooling progress including literacy and numeracy test scores, and teacher and school characteristics. The baseline sample was 14 to 17 years in 2007. 1,764 in-school adolescents drawn from the school rosters of 59 randomly selected schools and 886 out-of-school adolescents drawn from the catchment area of the selected schools make up the baseline sample. The survey first interviewed adolescents between May and July of 2007 and has re-interviewed adolescents annually through 2011 with follow-up rates of 91% in 2008, 90% in 2009, 88% in 2010, and 88% in 2011 of the original sample. The survey collected extensive information on adolescent characteristics using face to face interviews and information on sensitive issues, such as sexual behavior and history, using

Audio Computer Assisted Self Interviews. In this paper we focus on the in-school sample of 888 boys and 870 girls that excludes adolescents who were not re-interviewed after the first round (one boy and five girls).

METHODS

To estimate the influence of lagging behind on transitions to adulthood, years lagging behind will be regressed on the outcomes listed above using OLS models on a pooled sample with covariates lagged one time period. The model to be estimated is: $Y = X_1 + X_2 + X_3 + \varepsilon$; where Y = Transition to Adulthood, X_1 represents years lagging behind grade, X_2 and X_3 are vector representing personal and household characteristics respectively.

Dependent Variables

Age at School Leaving: We determine timing of school leaving as the first round in which an adolescent reports not being enrolled if he/she does not report being enrolled in subsequent rounds.

Literacy: We measure literacy with a dummy variable indicating whether the respondent can read two simple sentences in English aloud.

Numeracy: We measure numeracy using performance on math tests administered to adolescents that include simple operations questions and word problems.

Independent Variables

Lagging behind Grade for Age: Lagging behind grade for age is quite prevalent in rural Malawi and in our sample so we use a continuous variable instead of a dummy variable to measure lag. We indicate how many years the adolescent is lagging behind the recommended grade for age (Age of adolescent – Highest Grade Attended – Seven). We cap the upper limit of this variable as three or more.

Control Variables: Total household assets, literacy and numeracy, parental education, residence with parents, age, orphan, and ethnicity.