The Effects of School Safety on Academic Achievement

Background

A safe learning environment is a place where structured learning is free from environmental, internal, and external threats to learners and educators' well-being; where both the infrastructure of the organization and the people within that environment are deemed safe. Safe learning environments can be threatened by internal threats, such as bullying, corporal punishment, and gang recruitment, external threats, such as attacks on schools, and environmental threats, such as natural disasters. All these threats have the potential to significantly decrease students' academic performance. While a growing body of research points to a connection between school environments and student outcomes, much remains unknown about the effect of perceived school safety on learning. More quantitative analysis of the relationship between school safety and student performance in developing countries is needed.

Research Objective

To identify the causal direction and magnitudes of student and teacher perception of safety on learning outcomes in Rwanda, Tanzania, and Zambia through a quasi-experimental analysis.

Data and Empirical Approach

In this study, we gather information from three USAID assessments: Early Grade Reading Assessment (EGRA), the Early Grade Mathematics Assessment (EGMA), and the Snapshot of School Management Effectiveness (SSME). The key dependent variables are standardized learning outcomes in English, reading fluency, and math addition problems, while independent variables are the perception of school safety from students in Rwanda, and from head teachers in Tanzania and Zambia.

Initially, researchers conducted an Ordinary Least Squares estimation to explore the determinants of student performance when controlled for school and family-specific characteristics. These results were then verified using a quasi-experimental method that employed a Propensity Score Matching technique. This allows for the conditions of a randomized experiment of the control groups on school safety and academic performance. Lastly, in order to account for any misspecifications in the treatment or outcome models, a Doubly Robust Estimator was used. As long as one of the models is correct the estimator will provide an unbiased estimate, ensuring the validity of the results.

Findings

Effects of Unsafe Learning Environment
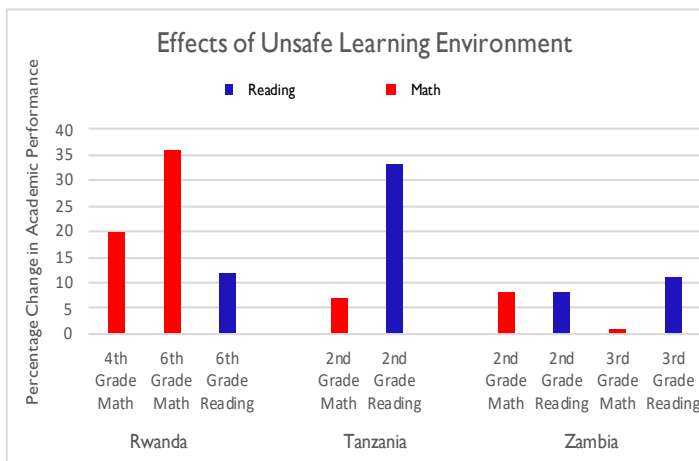
Student-reported school safety: We find negative effects of an unsafe school environment on learning outcomes for reading and math in all aforementioned estimation procedures of Rwandan students who self-reported their perception of school safety. Results show that for 6th grade math evaluations, a student who feels unsafe solves seven fewer addition problems correctly per minute (36% deviation from average performance), compared to peers who feel safe at school. For 4th grade math evaluations, the difference is about two problems per minute (20% deviation from average performance) when compared to students of similar characteristics, who only differ through the perception of school safety. Also, 6th grade English reading fluency is significantly affected, with students who feel unsafe reading about five fewer words per minute than comparable peers (12% deviation from average performance).

Head teacher-reported school safety: Negative effects are found both in regression and quasi-experimental estimation for Tanzania, where head teachers reported perceptions of school safety for students. Specifically, quasi-experimental estimation shows that Tanzanian students who reportedly had an unsafe learning environment solved 0.7 fewer problems correctly per minute in math addition (7% deviation from average performance). Also, English reading fluency is significantly affected, with students who experience an unsafe environment reading about eight fewer words per minute than comparable peers (33% deviation from average performance). It is worth pointing out that an average Tanzanian student loses one-third of his/her reading efficiency (the mean being 24 words per minute) solely due to school safety issues. Particularly in the 2nd grade regression analysis for Tanzania, we find that female students perform worse than their male peers in English reading assessments, when both girls and boys are facing unsafe school environments.

Also, the presence of security guards in unsafe school environments is found to reduce the negative consequence on 2nd grade math outcomes. In Zambia, our research showed no statistically significant effects of school safety when reported on by a head teacher. This is true in all grades and subjects, except for 3rd grade English reading. The quasi-experimental estimations show an 11% reduction from the average performance in English evaluations.

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Conclusions and Recommendations

- Perceptions of unsafe school environments are correlated with lower learning outcomes. Donors, policymakers and other education stakeholders need to consider school safety issues as a barrier to learning in policy design and program implementation.
- There is a need for more standardized measurement tools and more research to measure how threats to school safety affect performance and how these threats vary across sex, age, region, and other attributes.
- Alternative research approaches are needed to evaluate the impact of school safety on student achievement. A longitudinal or experimental approach will enable researchers and policymakers to understand the effect of specific policies and programs implemented to enhance student academic performance.

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