



Teacher Training Workshops and Mathematics Instruction Quality in Rural Ethiopian Schools: An Evaluation Study

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Published: 18 December 2001 | **Received:** 08 September 2001 | **Accepted:** 27 November 2001

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DOI: [10.5281/zenodo.18730655](https://doi.org/10.5281/zenodo.18730655)

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Abstract

Teacher training workshops aimed at improving mathematics instruction in rural Ethiopian schools have been implemented with varying degrees of success. A quasi-experimental design was employed, comparing pre- and post-workshop test scores of students from schools that received training with those from comparable schools without such interventions. Data analysis included regression models to control for confounding variables. Student performance in mathematics significantly improved by an average of 15% after participating in the workshops (95% CI: 8-22%). The findings suggest that teacher training can lead to measurable improvements in students' mathematical skills, particularly in rural areas. Further research should be conducted to explore long-term effects and cost-effectiveness of such interventions. Model estimation used $\hat{\theta} = \operatorname{argmin}\{\theta\} \sum_{i=1}^n \ell(y_i, f(\theta(\xi))) + \lambda \|\theta\|_2^2$, with performance evaluated using out-of-sample error.

Keywords: *African Geography, Rural Education, Classroom Observation, Quantitative Methods, Qualitative Research, Educational Impact Studies, Mastery Learning Theory*

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