EVALUATION BRIEF | JULY 2018

UPGRADING VOCATIONAL EDUCATION EQUIPMENT IN MONGOLIA

Improving job outcomes requires more than providing technical equipment

Program Overview

MCC's $284.9 million Mongolia Compact (2008—2013) funded the $49.3 million Vocational Education Project, which included the $21.8 million Improvement of Learning Environments Activity. This activity aimed to increase employment and income among unemployed and marginally employed Mongolians. The activity was built on the theory that providing modern equipment to vocational schools would improve the quality and relevance of the technical and vocational education system, thus leading to improvements in individuals' employment and increased incomes.

MCC commissioned Innovations for Poverty Action to conduct an independent final impact evaluation of the Vocational Education Project's Improvement of Learning Environments Activity. Full report results and learning: https://data.mcc.gov/evaluations/index.php/catalog/82

Key Findings

Implementation

- A variety of equipment, such as for heating, plumbing and electrical teaching, was delivered and installed as planned.

Impacts on Employment and Income

- Neither individuals' employment nor income changed as a result of increased exposure to the improved equipment in the selected vocational schools.
- Additionally, there was no impact on intermediate results or other higher-level outcomes, such as assets and expenditures.

Possible Explanations

- Worse labor market conditions may have occurred for individuals in the trades targeted for equipment upgrades, compared to individuals in non-targeted trades, making it challenging to detect results with the evaluation's methodology.
- One hypothesis is that training on improved equipment may not have translated into outcomes that are appealing to employers.

Evaluation Questions

This final impact evaluation was designed to answer the following question:

1. What is the effect of learning and training with upgraded equipment on graduates' employability and wages?

Detailed Findings

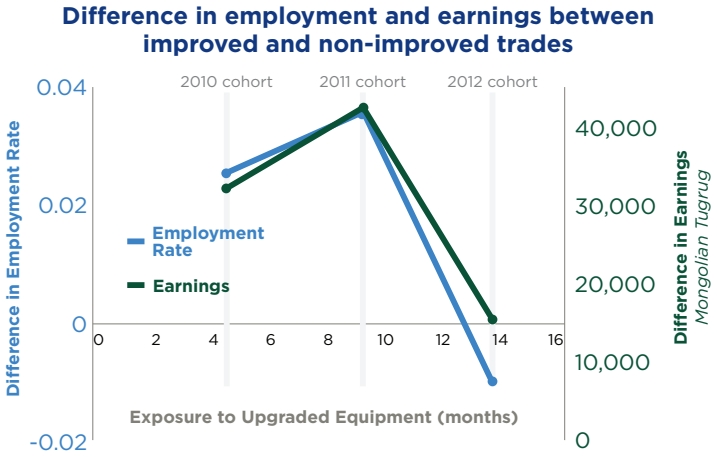
Implementation

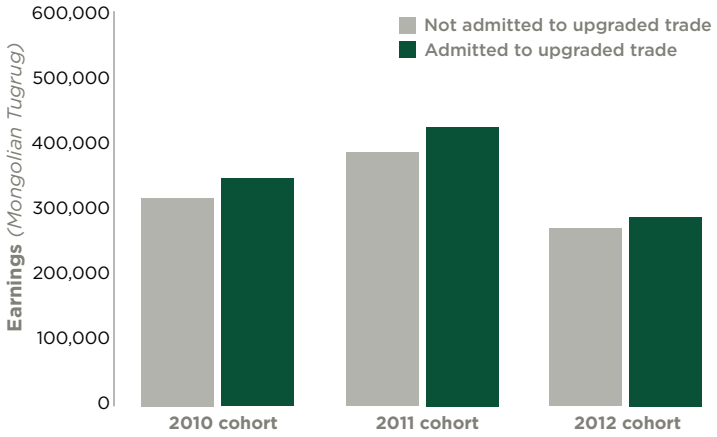
The Improvement of Learning Environments Activity provided equipment to 18 schools across 15 provinces in Mongolia. The types of equipment provided included heavy machinery, lathe-milling, electricity and electronics, plumbing, welding, heating and cooling technology, hydraulics and pneumatics, concrete and reinforcement, and auto mechanical training. With a few short delays, all equipment was delivered and installed as planned.

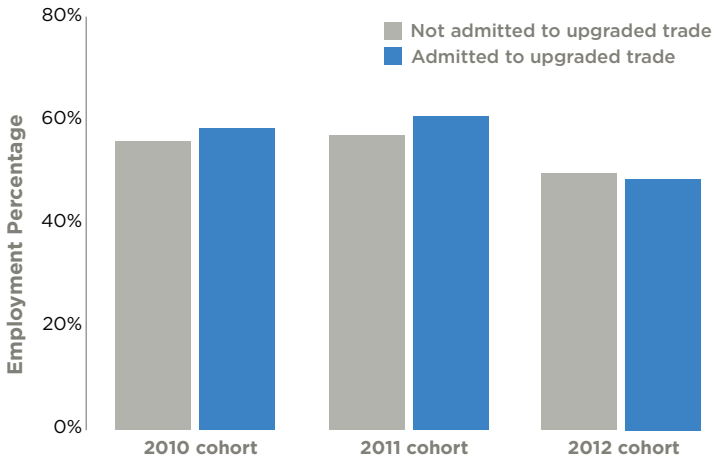
Impacts on Employment and Income

No significant impacts were found on measures of employment or income as a result of increased time spent learning with the improved equipment. The 2011 cohort (15.8 months of exposure) had increased employment and income compared to the 2010 cohort (6.8 months of exposure), but the results were not statistically significant. The 2012 cohort's (24.4 months of exposure) employment and income measures were worse than both earlier cohorts. There were no differences by gender. Note that the top graph on the right is essentially a summary of the bottom two. It shows the differences between individuals admitted to an upgrade trade versus those that were not, across cohorts.

Similarly, no significant impacts were found on intermediate results, such as trade-relat-







ed knowledge, work intensity or employment type. Exposure to improved equipment also did not have an impact on other higher-level outcomes, such as future expectations, assets and expenditures.

Possible Explanations

The lack of impacts may result from differing labor market opportunities each year. Labor market conditions for those who studied trades that received the upgraded equipment could have deteriorated relative to those who studied other trades. There is some evidence of a general deterioration of labor market opportunities for individuals admitted to technical and vocational schools in the 2012 cohort.

Heavy machinery equipment

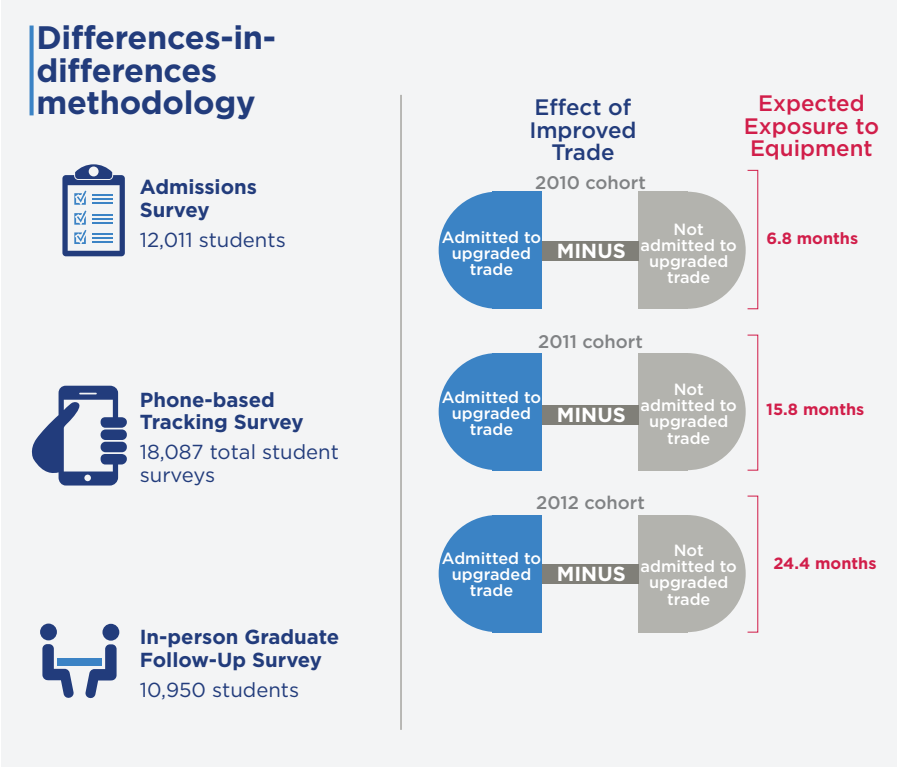
Another hypothesis is that individuals' exposure to upgraded equipment did not improve skills that employers valued. There were no significant increases in scores on tests measuring trade-related knowledge (although it is possible the tests did not capture all skills learned from upgraded, compared to older, equipment). There is strong evidence that schools received equipment upgrades, but there is no data on whether teachers used equipment upgrades effectively or whether individuals learned skills that were useful to employers.

MCC Learning

- Understand the link between equipment and expected outcomes as improving employment outcomes and household incomes may require interventions beyond providing technical equipment alone.
- Fully define the theory of change to ensure intermediate outcomes are articulated and measured, which increases the learning that it is possible to obtain from the evaluation.
- Include a detailed problem diagnosis as a precursor to effective program design. MCC now uses better problem diagnosis processes, including the constraints analysis, which identifies the binding constraints to economic growth, and detailed root cause analysis. In the case of the Technical and Vocational Education and Training (TVET) sector, a root cause analysis should include a comprehensive institutional assessment, a credible approach to identifying skills gaps in the labor market and an understanding of the current/potential role of the private sector in TVET provision.

Evaluation Methods

The impact evaluation used a difference-in-differences quasi-experimental methodology to estimate the impact of exposure to upgraded equipment on students' employment and earnings. The evaluation took advantage of the gradual rollout of equipment upgrades to TVET schools over time, exploiting the variation in exposure to equipment upgrades across the 2010, 2011 and 2012 cohorts. The exposure period varied from 6.8 to 24.4 months.



Three types of surveys were administered to individuals: an admissions survey (12,011 individuals) collecting baseline demographics data and an aptitude test, a phone-based tracking survey (18,087 total student surveys) each following year to update contact information and collect basic information on education and job-related achievements, and an in-person graduate follow-up survey (10,950 individuals). Individuals completed the graduate follow-up survey in the year after their expected graduation. The follow-up survey included all tracking survey information, further questions about asset ownership, consumption, expenditure and other household activities, and a written trade-based skills test. The skills tests contained technical questions specific to the trade individuals studied and general questions on numeracy and computer literacy.

In addition to the student surveys, administrative surveys were conducted with teachers and administrators at up to 50 TVET institutions over three years to capture characteristics, such as school size, funding, and the availability and use of equipment.