

Abstract Title Page
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Title: “The Impacts of Introducing Accountability: Evidence from a Randomized Field Trial in Vocational Schools in China”

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Abstract Body

Limit 4 pages single-spaced.

Background / Context:

Description of prior research and its intellectual context.

As demand for skilled labor increases, policymakers in an increasing number of developing countries have turned toward vocational education and training (VET) to educate and prepare students. The United Nations Educational, Scientific and Cultural Organization (UNESCO) published a 2012 report “acknowledging the need for [VET] to contribute to economic growth, social equity and inclusion, as well as to sustainable transformation.” The Asian Development Bank (ADB) stated that VET is necessary to “promote equitable social development” (ADB, 2009). Countries in the Asia Pacific region, such as Indonesia, Vietnam, and Nepal, have rapidly increased enrollments in vocational high schools since the early 2000s (Ministry of National Education of Indonesia, 2006; Government of Vietnam, 2009; Council for Technical Education and Vocational Training of Nepal, 2014).

Internationally, China has been one of the most ambitious promoters of VET. As China’s economy continues to grow and jobs require more skills, Chinese policymakers have deemed VET important for developing human capital and giving students skills they need for future employment (Fang, 2009; Zhang et al, 2013). The State Council has promoted a policy agenda that emphasizes the important role of VET in powering China’s economic development (China State Council, 2002, 2005, 2014). Indeed, the Chinese government increased annual investments in vocational high school education six-fold between 1990 and 2011 (CNBS, 1991, 2012). Across the same period, student enrollment increased dramatically, reaching 20 million students as of 2012 (or 46% of all high school students in China—CNBS, 2012). Statements by leading figures in the central government suggest that expanding VET will continue to be a major priority in China going forward into the next decade (China State Council, 2014).

However, available evidence suggests that while levels of investment in VET are high, this increased investment is not translating into better student outcomes. On the one hand, a recent large-scale study systematically examined the level and types of inputs into the VET system and found that absolute investment is high and meets official government benchmarks for school facilities, teacher qualifications and basic curricular standards (Yi et al., 2013). On the other hand, studies have demonstrated that students in VET schools make few, if any, absolute gains in academic, vocational, or non-cognitive skills and abilities (Loyalka et al., 2015). Recent impact evaluations further show that major government initiatives to essentially double the level of school resources per student in some schools or provide training and certification for VET teacher have no positive impact on student outcomes (Li et al, 2015; Johnston et al, 2015).

Although providing greater school inputs (expenditures or more highly trained teachers) has no discernible impact on student outcomes, it is possible that increasing the accountability of VET schools (to better use existing resources for the purpose of improving student outcomes) may have a positive impact. A large literature argues that merely increasing school inputs is insufficient for improving student outcomes, but rather that introducing organizational structures and incentives can improve student outcomes (e.g. Glewwe et al. 2011; Hanushek, 1997). Furthermore, VET schools in developing countries in China are, in contrast to academic schools,

characterized by an almost complete lack of accountability. Whether imposing an accountability system on VET schools can indeed improve student outcomes is, however, an empirical question.

Purpose / Objective / Research Question / Focus of Study:

Description of the focus of the research.

The purpose of this study is to evaluate whether introducing an accountability system for vocational schools in China can improve student outcomes. Specifically, we seek to examine whether introducing such a system improves (a) students' vocational skills; (b) students' academic skills; (c) students' non-cognitive abilities; (d) student graduation rates (as opposed to dropout rates), (e) the quality of students' internship experiences. We not only seek to examine whether introducing an accountability system improves student outcomes but how/why and for what types of students.

Setting:

Description of the research location.

The setting for the study is Henan Province, China. Henan Province is located in Central China and has a population of 106 million people. Owing to its central location and the size of its population, Henan is a major source of unskilled and semi-skilled workers for the manufacturing industry in China. Furthermore, Henan has been designated as a "model VET" province by China's central government. It is thus an ideal place to evaluate interventions that have the potential to improve the VET system.

Population / Participants / Subjects:

Description of the participants in the study: who, how many, key features, or characteristics.

We sampled all 118 vocational high schools in seven large prefecture-cities of Henan province that had one of the two most popular majors (computing or digital control). Within each school-major and within each grade of that school-major, we randomly sampled one class of students. Altogether, our sample consisted of more than 12,000 vocational high school students.

Intervention / Program / Practice:

Description of the intervention, program, or practice, including details of administration and duration.

The intervention was an accountability system that held VET schools accountable for improving students' academic and vocational skills, reducing dropout, and meeting government and industry standards for internships. The intervention had the full backing of the Henan provincial bureau of education and the Electronics Industry Citizenship Coalition (which represents essentially all major electronics industry firms in the world).

At the beginning of the 2014-2015 school year (in September 2014, after a baseline survey in May 2014 – see below), a meeting was held to introduce treated school principals to the accountability system. In that meeting, treated school principals were told that they could receive special rewards from government and industry as a result of meeting specific assessment standards (essentially improving academic and vocational skills for at least 60% of the students,

reducing dropout rates, and meeting the five basic internship compliance standards for all students). School principals were not told which majors or grades would be assessed, but rather that they were responsible for ensuring improvements in student outcomes regardless of major or grade.

The rewards included rewards from the Henan government (a higher probability of receiving special earmarked grants for school improvement and specific promotional opportunities for school principals) as well as rewards from the electronics industry (schools that passed assessment standards would become “credentialed” and have the chance to send their student interns and graduates to firms in the electronics industry, where schools that did not pass assessment standards would not).

Research Design:

Description of the research design.

After conducting a baseline survey in May 2014, we randomly assigned half of the 118 VET schools in our evaluation sample to treatment and control groups. As part of the being in the treatment condition, the principals of the 59 “treatment” schools were all invited by the Henan provincial education bureau to the central meeting in September 2014 (see above). During that meeting, the Henan government and researchers from our project team introduced the details of the accountability system to the treated schools in full. The other 59 (“control”) schools were deliberately not told about this accountability system (and the government did not tell control schools about this system throughout the school year).

Data Collection and Analysis:

Description of the methods for collecting and analyzing data.

Baseline Survey: In May 2014 (at the end of the school year), we conducted a “baseline” assessment among first and second year students in 118 vocational high school programs. We collected information on the following metrics:

- a. Fully-proctored, standardized tests of students’ academic and vocational skills
- b. Dropout rates collected by following a cohort of students

We also collected information on:

- a. Measures of non-cognitive abilities such as self-efficacy and grit
- b. Students’ individual and classroom behaviors (self-reported)
- c. Teaching/curricula (how teachers are instructing students)
- d. School resources, including teacher qualifications, finances, facilities
- e. School governance

Endline Survey: In May 2015, at the end of the following school year, we returned to the 118 vocational high school programs and conducted an endline survey. In the endline survey we surveyed/tested the following types of students:

- grade 2 students (formerly grade 1 students in the baseline). Specifically, we assessed students’ academic and vocational skills and ascertained their dropout status.

- grade 1 students (that were not yet in vocational schools in the baseline survey). Specifically, we assessed students' academic and vocational skills.
- grade 3 students (formerly grade 2 students in the baseline). Specifically, we ascertained students' dropout status. We also asked them about their internship experiences (to determine whether the internships they had were compliant with government and industry standards).

We also measured a number of secondary outcomes and potential mediators to explore the causal chain:

- a. Measures of non-cognitive abilities such as self-efficacy and grit
- b. Students' individual and classroom behaviors (self-reported)
- c. Teaching/curricula (how teachers are instructing students)
- d. School resources, including teacher qualifications, finances, facilities
- e. School governance

We were able to use the above information to evaluate whether the accountability treatment program improved student outcomes, how/why and for whom.

Findings / Results:

Description of the main findings with specific details.

Initial results show that introducing the accountability system had a positive impact on a number of student outcomes. Vocational skills improved by approximately 0.2 SDs. Academic skills improved by approximately 0.15 SDs. Dropouts were reduced by 4 percentage points (or approximately 15%). There is tentative evidence (that we are still exploring) that internship experiences improved.

Conclusions:

Description of conclusions, recommendations, and limitations based on findings.

Based on the results of the evaluation, it appears that introducing an assessment and accountability system into the vocational school system in China can improve a broad set of student outcomes. Although we are eager to see whether the impacts continue into year 2, it should be noted that this is the first positive result for any VET policy/program evaluated in China thus far. The results therefore have major implications for policymakers and industry partners in China.

Appendices

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Appendix A. References

References are to be in APA version 6 format.

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Appendix B. Tables and Figures
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