

School Resources and the Quality of Education: Is there a link?

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Short abstract:

The aim of this paper is to verify whether school resource factors have an impact on the quality of education. This latter is measured with the help of a unique database on student scores in international skills tests. The general difficulties inherent in this type of study are the possibility of endogeneity bias and measurement errors. After estimation bias correction, we show that improvement in the quality of educational systems does not necessarily require an increase in school resources. When an alternative indicator of the performance of educational systems is used, our results are confirmed. Consequently, one should remain cautious about recommending purely financial measures to improve quality of education.

Key words: Quality of education, School performance, School resources.

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Long abstract:

The majority of countries throughout the world devote between 1% and 11% of their GDP to education; equally often, this item of expenditure accounts for one fifth of government spending. Given the rapid growth and large magnitude of education spending, governments have been increasingly interested in ways of controlling education costs. One possible strategy is to modify the institutional structure of the educational system in order to improve the quality of education. There is a lack of clear consensus on whether the quality of an educational system can be improved simply by increasing educational expenditure. More generally, school resource factors as a whole do not appear to explain school performance in any satisfactory manner.

The objective of this paper is to determine the extent to which, within an educational system, school resource factors have an impact on school performance. For this purpose, we estimate an educational production function. As it would for a firm, this function relates inputs to an output. In this case, we have chosen two outputs. The first concerns student scores in international achievement tests. It is reasonable to consider that the performance of an educational system can be measured through student scores in standardised tests of skills such as mathematics, science and reading. However, given the limited nature of data on international tests, we also use net enrollment rate at the secondary level.

Compared with previous works, this paper proposes several advances. Firstly, we take into account two different indicators for the measurement of educational performance, where most of the studies limit themselves to one. Using two complementary measurements gives us the possibility of verifying the validity of our results. Further, our comparative international study adopts a panel perspective, enabling us to control for unobservable fixed effects. In fact, most of the previous studies do not control for bias due to omitted variables and fixed effects. Because we have panel data, we can take into account all the invariant effects whose characteristics are specific to the countries' educational systems. Another advantage of the panel database is that it enables us to take into account the possible endogeneity of school resource factors. To our knowledge, no other macroeconomic study uses regressors to control for endogeneity bias. Yet it seems fairly logical to imagine that a double relation of causality might exist between resource factors and the performance of educational systems. For example, an educational system may perform well because classes are small in size. In parallel, because of its high performance, the government may opt for a voluntary reduction in class size. Other examples can be found, and they all underline the need to take into account the bias generated by this possible endogeneity. That is we set out to do in this paper.