What did you learn in school today? Why learning and not schooling matters for economic development

From news sites to light dinner conversations, one topic seemed to be an insatiable resource of discussion in early December. When the OECD released its PISA 2012 results (The Program for International Student Assessment) on December 3rd, an array of public commentaries spurred, ranging from pride, to frustration, to dismissing the whole enterprise as misguided and misleading as a measure of educational achievement. And an old question reemerged: should we - both as economists and policy makers - care about the PISA results? And more importantly, what can these PISA results teach us not just about the present, but also about the world that will come?

The importance of investing in education to achieve development of a country has long been recognized. After decades of increasing recognition of the importance of education, it is now enshrined as a global priority in the Millennium Development Goals. In fact, the second target of these goals is to ensure that, by 2015, children regardless of their gender or origin will be able to complete a full course of primary schooling.

Besides having a defining influence on an individual's earnings, education plays a central role in explaining differences among countries on the aggregate. More formally, a theoretical framework within macroeconomics confirms the basis for this effect. Education both increases the human capital inherent in the labor force, which increases labor productivity leading to a higher equilibrium level of output (Mankiw, Romer, and Weil; 1992), but further increases the innovative capacity of the economy and therefore the faster adoption of new technologies thus promoting growth (Lucas; 1988). When these theoretical predictions are tested on historical data, education is typically proxied by the quantitative measure of years of schooling, averaged across the labor force. Barro (1991, 1997) and Mankiw, Romer, and Weil (1992) find a significant positive association between quantitative measures of schooling and economic growth running across countries.

Using average years of schooling as the proxy for education implicitly assumes that a year of schooling delivers the same increase in knowledge and skills regardless of the education system and the resources supporting it. But is it truly justified to think of a year of schooling in Ethiopia as being equivalent to a year of schooling in Finland? Since much of the research has focused on schooling measures with no consideration of quality differences, the results of empirical cross-country comparisons are undermined. Further, the typical measures focus only on formal schooling and leaves out informal learning. Using a broad set of international tests to measure students' achievements, Barro (2001) finds that, while both the quantity and the quality of education matter for economic growth, quality is much more important. He finds that when quality of education is taken into account, the share of cross-country variation in levels of economic development attributable to international differences in human capital rises dramatically. This result goes to explain why, although we are on track to meet the Millennium Development Goals in terms of education, a central part of most development strategies, we have failed to see adequate changes in economic conditions. The current situation in developing countries is much worse than generally pictured on the basis just of school enrollment and attainment. Even though enrollment in primary education in developing regions reached 90 per cent in 2010, up from 82 per cent in 1999, still more than 125 million youths around the world lack basic reading and writing skills, of which 61% are young women. Moreover, many children finish primary school having acquired very few productive skills. For example, in India net primary enrollment rates are 96% but in 2008 an independent assessment found that only 27 percent of children had mastered four basic skills: reading, doing a division problem, telling time and handling money. It seems that we often forget that education is not by itself the goal, but a means to achieving a broader set of goals.

Though there is no doubt that the quality of one's education is already of paramount importance, and that future technological development will only further increase the value to a good quality education.

This is why the PISA tests are so important. Coordinated by the OECD (Organization for Economic Cooperation and Development) PISA measures 15-year-old students' skills in reading, mathematics, science literacy and problem solving. First administered in 2000, it is conducted every three years and by testing more than half a million students in 65 countries remains the most thorough global survey in measuring quality of cross-country education. This year the focus was on Math, since

math proficiency seems to be a good predictor of participation in post-secondary education and higher expected future earnings. Once again, the Asian tigers led by Shanghai-China and Singapore dominated in math knowledge.

Special for the PISA results amongst cross-country comparisons is the extent to which they are used as an instrument of politicization within countries. Indeed, this year was no different and we did not have to look any further than Spain to witness the exploitation of the topic between the governing People's Party and the socialist opposition PSOE. The 2012 PISA results show that Spain's educational results remain below OECD averages with only marginal improvements despite a 35 percent increase in funding since 2003. As similar discussions take place in numerous countries, we must realize that although there is an increasing consensus that schooling should focus more on quality than quantity, there is little consensus as to how to achieve that. Some see the problem as one of insufficient funding, whereas others would wish to see schools better incentivising students, staff and teachers.

The PISA researchers see a focus on both as fruitful. They emphasize that for all countries targeting resources more towards less privileged students is an effective way of improving scores and they note that the top performers, notably in Asia, put emphasis on selecting and training teachers, prioritizing investment into the human capital of teachers versus the size of classrooms. But at the same time, The PISA researchers themselves point out that for example Spain could improve its scores by giving schools greater autonomy over their curriculum and by linking positive professional appraisals of teachers to higher teacher remuneration.

It some sense the current lack of incentives in most school systems is peculiar. We have long since come to realize that the best way of producing everything from televisions, to phone apps, to vaccines is by employing proper incentives, but somehow fail to apply the same insight to our most precious commodities; our children's education. As pointed out by Pritchett and Kenny (2013) it is not difficult to understand why a lack of sufficient incentives means that resources are not allocated efficiently to improve performance. They suggest three items they believe will improve the overall incentives in schools: strong accountability systems that measure student performance as well as possible; local autonomy such that schools can make appropriate educational choices; and a choice and competition in schools such that parents – typically the most vested parties of all - can enter into determining the incentives that schools face.

However we choose to improve our educational systems, it is clear that we must. And when we contemplate how to improve our own systems, what better way of learning than looking around the world to see how other systems shine or fail.

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