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Can Young Americans Compete in a Global Economy?

Young Americans entering the labor market today face substantial competition. Employers can look all over the world for workers with the skills to meet their firms' needs. Are young Americans ready for these challenges? The answer isn't obvious. On the one hand, U.S. high school students consistently perform worse on international standardized tests than students in other industrialized countries; on the other hand, the United States generally has maintained the highest college completion rate in the world. Sorting out the net effect of these two phenomena on young Americans' readiness to compete in a global job market has been difficult given the dearth of suitable data.

This *Economic Letter* summarizes new research by Cascio, Clark, and Gordon (2008) (hereafter CCG) that uses data from the International Adult Literacy Survey (IALS), fielded in the 1990s, to address this issue. The authors estimate the skill levels of 16- and 17-year-olds and 26- to 30-year-olds for the United States and other high-income countries. Consistent with other assessments of the school-age population, the IALS data show that U.S. 16- and 17-year-olds perform poorly relative to their counterparts in other nations. By their late 20s, however, those in the U.S. group in the IALS data compare much more favorably to their counterparts abroad, suggesting that they are able to "catch up" in college or beyond. The authors then discuss why the U.S. "age profile of skill" is so different from that in other countries.

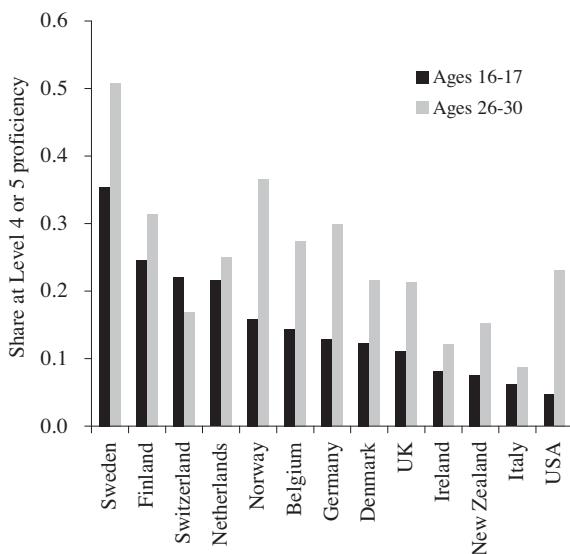
Comparing academic performance across countries

Although cross-country data on educational attainment and wage rates are available, they are poor proxies for skill, as they embody unmeasured differences in school quality, labor market regulation, and other country-specific factors. Using data from the relatively recent IALS sidesteps these problems. The IALS measured the information-processing skills of 16- to 65-year-olds in different countries in 1994, 1996, and 1998. Respondents were given several passages of text and, following each, were posed a series of questions to measure skills in

three domains: quantitative (applying "arithmetic operations...to numbers embedded in printed materials"), prose (understanding and using "information in texts"), and document (locating and using "information in various formats") (OECD 1995). The test was intended to measure "literacy" broadly ("general skills"), rather than occupation-specific knowledge or academic proficiency. Scores on the IALS tests were categorized from level one (the ability to locate information in text) to level five (the ability to locate information in dense text with multiple distractors and to make high-level inferences). Performance on the IALS test is strongly correlated with individual earnings, though the strength of that correlation and the responsiveness of earnings to changes in IALS scores differ considerably across countries (Blau and Kahn 2005).

Based on the IALS, CCG estimate the share of the population that is highly skilled—that is, who scored at least at level-four proficiency on the test on average—for a set of developed countries. Figure 1 displays separate shares for 16- and 17-year-olds and for 26- to 30-year-olds. Countries

Figure 1
Performance on the IALS test by age and country



Source: International Adult Literacy Survey (IALS).

are ordered from highest to lowest based on the performance of teenagers (solid black bars). To eliminate changes in the demographic composition of the population associated with high immigration rates of young adults, data are reported only for native-born citizens of each country.

The results for 16- and 17-year-olds confirm the findings from previous international standardized tests. On average, native-born U.S. teenagers performed worse on the IALS test than teenagers in any other country: Only 4.7% achieved at least level-four proficiency. In contrast, in the highest ranking country, Sweden, more than 35% of students achieved at least level-four proficiency. Across all nations other than the United States, on average 16% of 16- and 17-year-olds were highly skilled.

The gray bars, representing 26- to 30-year-olds, portray a very different picture. While the gap between the highest performing country, Sweden, and the United States narrowed only slightly, the gap between the United States and the average of developed countries narrowed substantially: 23.0% of U.S. 26- to 30-year-olds were proficient at level four or five, and 24.7% of this group in the other countries surveyed were similarly skilled. The U.S. position thereby moved from the bottom to the middle of the group.

The striking change in the U.S. ranking from the teenage years to young adulthood highlights an important difference in the “age profile of skill” across countries. While substantial learning takes place after high school in nearly all countries, these gains are particularly large in the United States. In fact, except for Norway, the age profile of skill is steeper in the United States than in any other country in the sample.

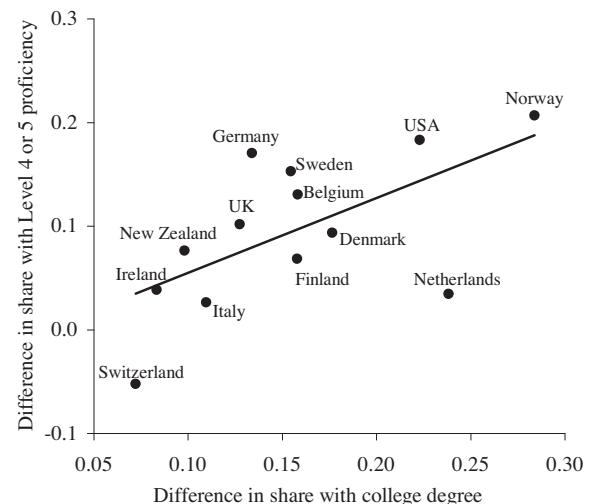
Why are age profiles of skill different across countries?

Why do U.S. 26- to 30-year-olds perform so much better on the IALS test than U.S. 16- and 17-year-olds? Why are such gains not observed in other rich countries? CCG argue that the steep age profile of skill observed in the U.S. may have emerged because the costs to the individual of investing in general skills in this country are lower and the benefits are higher than in many other countries. In particular, on the cost side, access to university education in many developed nations other than the U.S. is controlled by the government along two dimensions. First, students are “tracked” during the

equivalent of K-12; that is, some are on a track that makes them “university eligible,” and therefore they take courses that prepare them for college, while some are on a vocational track where the courses they take would make competing for a place in a college difficult if not impossible. Second, the number of available admissions to universities is limited and changes infrequently. Therefore, there is potentially fierce competition for few places in university classrooms. In contrast, there is less educational tracking in the U.S., so more students of varied educational backgrounds and ages can undertake the appropriate preparation to apply to colleges and universities. Furthermore, there is a relatively high level of private provision of college in the U.S., which allows for a greater ability to expand educational opportunities to meet higher demand.

If the comparatively greater access to—that is, low cost of entry into—the U.S. higher education system produces greater acquisition of general skills, the United States should have a relatively high college completion rate to match its relatively steep age profile of skill. The data in Figure 2 suggest that this is true. The figure also shows that the fraction of a country’s population receiving a bachelor’s degree (or equivalent) between ages 16–17 and 26–30 is strongly positively correlated with its age profile of skill. This suggests that individuals’ investments in higher education raise general skills in the average country, even when university education tends to be more track-

Figure 2
Differences in test scores and college graduation rates, ages 16-17 vs. 26-30



Source: International Adult Literacy Survey (IALS).

oriented and focused on a particular field than it is in the U.S.

Differences in the benefits from acquiring general skills also may be important in explaining differences across countries in the age profile of skill. For instance, a relatively high monetary return to college education may also have contributed to the relatively high U.S. college completion rates observed in the IALS. Similarly, in other countries, there are incentives to invest in vocational education over university education. For example, the German government heavily subsidizes participation in apprenticeships, which combine on-the-job and classroom training for specific professions. Thus, even though Germans and Americans spend about the same amount of time in school after age 17, Germans are more likely than Americans to allocate that time toward vocational education. While it has been argued that German apprenticeships bestow relatively general skills, it does not appear that vocational education pays off in this way in the average country: Compared to its strong correlation with college completion shown in Figure 2, the age profile of skill in a country is weakly correlated with increases in years spent in school overall after age 17.

Summary

The research described in this *Letter* suggests that the skills of young Americans entering the labor market may not be as low as internationally standardized tests historically suggest: While the average U.S. teenager has a low probability of being able to perform high-level inferences, Americans in their late 20s are as literate as their counterparts in a number of similar-income countries. These gains in skill appear to be a by-product of the low-cost, high-return nature of investment in general skills in the United States.

Will U.S. young adults continue to rank favorably in the distribution of skill across countries in the years to come? Perhaps not. While there is considerably less private provision of higher education in countries other than the United States, many did substantially expand public funding for universities in the 1980s and 1990s, increasing accessibility accordingly. Thus, many countries that significantly lagged the United States in college graduation only a decade ago—Finland, Sweden, and the United Kingdom, among others—now have comparable if not higher graduation rates. While it is unclear whether these countries will embrace the U.S. model of higher education, the educational battleground of the near future seems likely to move beyond the elementary and secondary level.

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References

- Blau, Francine D., and Lawrence M. Kahn. 2005. "Do Cognitive Test Scores Explain Higher U.S. Wage Inequality?" *Review of Economics and Statistics* 87(1) pp. 184–193.
- Cascio, Elizabeth, Damon Clark, and Nora Gordon. 2008. "Education and the Age Profile of Literacy into Adulthood." *Journal of Economic Perspectives*, forthcoming.
- OECD. 1995. *Literacy, Economy, and Society: Results of the First International Adult Literacy Survey*. Paris and Ottawa: Organisation for Economic Co-operation and Development, and Statistics Canada.

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