

The long-run labor market effects of more education

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THIS REPORT PRESENTS results from a study of the long-term effects of two Swedish education reforms from the 1930s and 1940s; one that extended school terms and another that added a school year at the end of schooling. The report shows that longer terms have significantly larger effects on labour market outcomes than an added school year at the end of schooling. This is in line with previous research, showing the importance of early interventions to create equal opportunities in life.

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Countries spend a substantial amount of resources on education. On average, OECD countries spent five per cent of GDP on the education sector in 2019, and the lion's share of this was allocated to elementary and high school education (OECD, 2019). Educational investments can differ substantially in character. Decision-makers thus have many different tools at their disposal when choosing how to invest more resources into education.

In recent years, the role of time as an educational input has received attention in the policy debate, and policy-makers around the globe are considering giving schoolchildren more classroom time. According to human capital theory, more time in education should generate positive labor market returns in terms of increased lifetime income. There is also theoretical and empirical evidence on the important role of early life investments (Cunha and Heckman, 2007), and that for example more instruction time early on is more effective than later efforts of a similar kind. Yet, despite the recent interest in time as an input, there is limited knowledge about the long-term effects of different types of interventions that increase instruction time.

This report presents results from a research project where we investigated the long-term effects of two education reforms implemented in Sweden in the 1930s and 1940s.* The first reform was a term extension, which could affect students from their first year in compulsory school. The second reform increased instructional time by extending compulsory education by an additional year at the end, when students were 13 years old. The two reforms increased instructional time by a comparable amount and affected the same cohorts, the key difference being that the former distributed the extra time over the complete course of primary education. The aim of both reforms was to improve basic skills and increase equality of opportunity.

The implementation of the education reforms varied across time and space, allowing for a quasi-experimental design with a well-defined control group. To analyze the long-run effects, we collect unique historical data on the timing of the implementation of the two reforms across school districts. We merge this information to detailed administrative data on all individuals born 1930-1940, including information on place of residence during school age, labor market outcomes in 1970, and pensions in 2006-2013.

The results show that the term extension was very effective in increasing labor market earnings, especially

among women. On average, the effect is 5% when scaled to a school year and for women, the effect is more than 9%. The term extension also increased female employment and we find significant improvements in women's pension earnings. In contrast, the labor market effects of the year extension were modest, with earnings increases of about 2% for both men and women.

The observed positive labor market effects could result from the extra instructional time improving children's basic skills taught in school. While we have no data on grades or test scores for these cohorts to test this hypothesis, we can examine occupational outcomes. Individuals affected by the term extension are more likely to work in relatively well-paid occupations in administration and transportation. Specifically, there was an inflow of women into white-collar occupations that require basic reading, writing and math skills, such as bookkeepers and secretaries. This finding is consistent with the term extension having improved students' basic skills, in turn, affecting their occupational choice.

In conclusion, extending education by longer terms had much more positive labor market effects than extending education by one year at the end of compulsory education. By investing in children from the very first years in school the term extension clearly seems to have achieved its intended aims. Our study provides empirical support for an important tool in the toolbox of school reformers worldwide.

* This report is based on research with Nina Schwarz, University of Duisburg-Essen. For more details and results, see Fischer et al (2019).