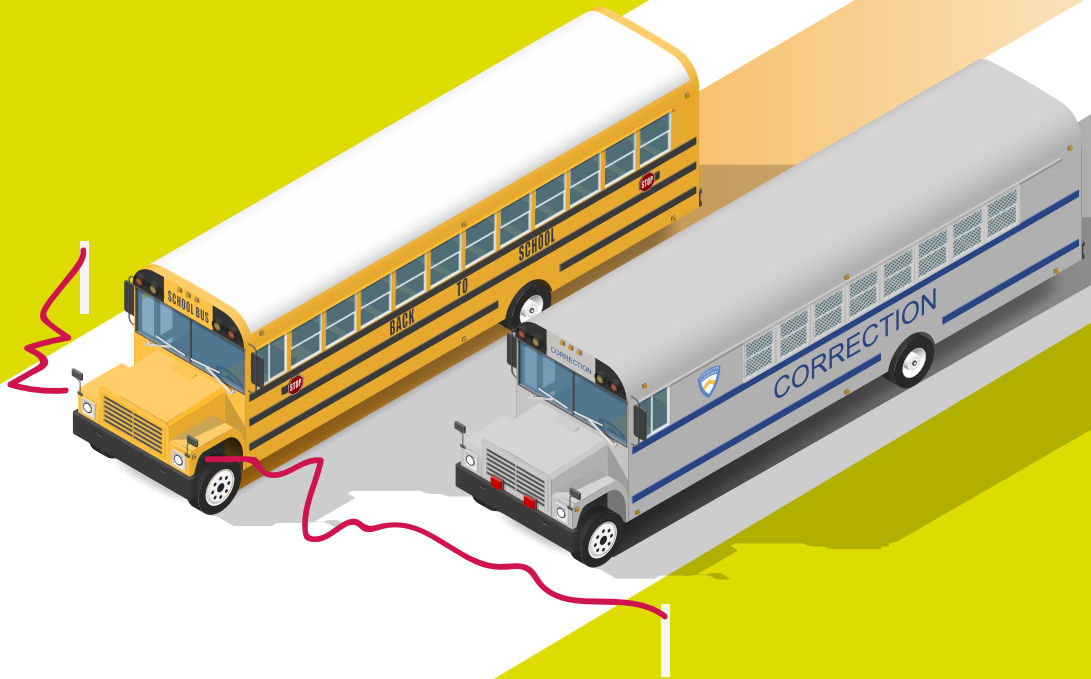


If young people spend longer in school, are they less likely to commit crimes? **Stephen Machin** and international collaborators examine the impact on youth crime of an educational reform in Australia that raised the minimum school leaving age.

Larrikin youth: can education cut crime?



Keeping young people in school longer reduces their opportunities to commit crime

Across the world, education levels of incarcerated criminals are well below those of the general population. So can we conclude that increasing education levels will reduce crime? Unfortunately the answer to this question is not as straightforward as it may appear. The issue is that the level of education is in general an individual's choice rather than being determined by outside forces.

The most obvious method of establishing whether more education causes a fall in crime would be to determine randomly the education level of each individual and then compare average crime levels for the high versus low education groups.

This would mimic the protocols of a traditional medical drug trial, randomly assigning one group to drug X (a cholesterol-lowering drug, for example) and the other group to a placebo. Comparison of the average change in cholesterol levels for each group pre- and post-treatment would identify the efficacy of the drug – whether the reduction in cholesterol is significantly larger for drug X vis-à-vis the placebo.

But if the allocation across the two groups is not random – for example, if doctors allocate highly motivated individuals willing to change their diet and exercise regimes to drug X and those less motivated to the placebo – this would skew the results and over-estimate the drug's efficacy.

Similarly, individuals who voluntarily choose to invest in higher levels of education are likely to have a lower discount rate – that is, they are less 'present-oriented' or more willing to forgo now for future rewards. By contrast, criminals are likely to have a higher discount rate, valuing rewards now with less concern for possible future implications.

In this case, individuals with higher levels of education are also likely to be less prone to crime. But analogous to the non-random drug trial, education in itself does not cause a reduction in crime since individuals self-select into extending or shortening their education.

Unfortunately, neither government education departments nor voters are likely to agree to the random allocation of education across individuals. So to uncover the causal impact of an increase in education on the level of crime, we need to use alternative methods. Our study uses a 'natural experiment' – the introduction of the Earning or Learning education reform in Australia – coupled with extremely rich administrative data on the criminal offending and education of individuals over time.

The Education or Learning education reform was enacted in Queensland in 2006. The reform led to a mandatory increase in the minimum school leaving age. Pre-reform, young people could leave school after completion of grade 10 or when they reached the age of 15, whichever occurred first. Post-reform, young people had to complete an additional two years either in school, vocational education, apprenticeship or full-time work up to the age of 17.

Figure 1:
Education before and after Queensland's Earning or Learning education reform

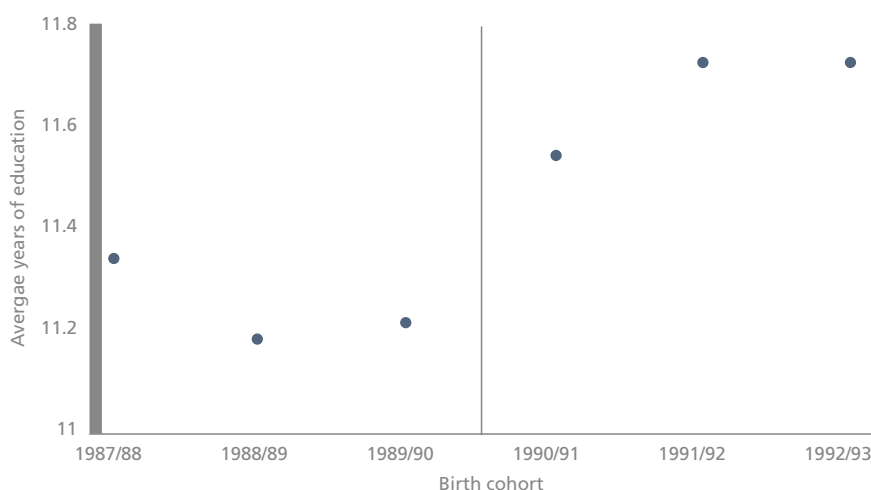
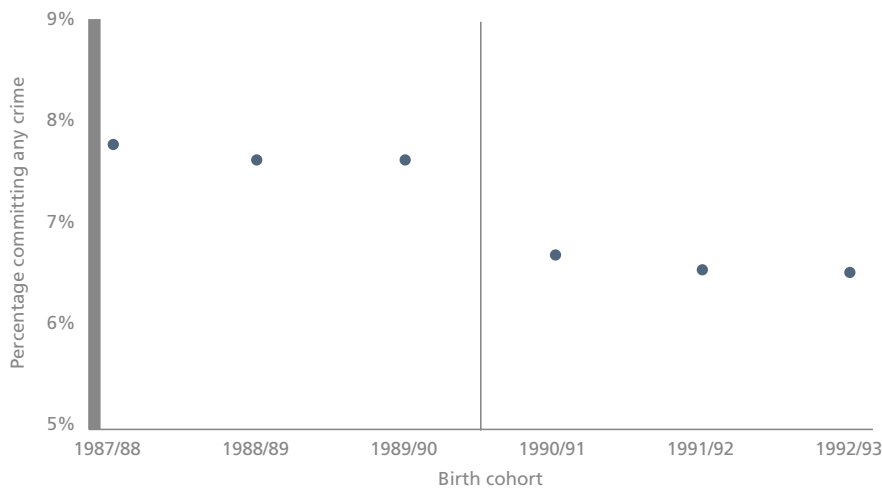


Figure 2:
Youth crime incidence before and after Queensland's
Earning or Learning education reform



Education
reduces crime
among young
men in their
late teens and
early twenties

The first birth cohort to be affected by the reform comprised young people who turned 16 in 2006. The reform thus increased the education level of those who would otherwise have left school at age 15. Thus, comparing crime levels pre- and post-reform provides an opportunity to identify the causal impact of education on crime.

We are in the fortunate position of having obtained Queensland administrative data matched at the individual level across state agencies, the Department of Education and Training and the Queensland Police Service. Thus, we have individual records for the entire population of attendees at all Queensland government-funded schools, together with matched individual criminal offence data for the period 2002 to 2013. The focus of our study is on young men aged 15 to 21 – those boisterous and sometimes badly behaved youth whom Australians informally call 'larrikins'.

The first empirical issue is to check that the reform actually achieved its intended goal: to raise the average levels of education. As Figure 1 clearly demonstrates, the average education level of 17 year olds increased significantly post-reform. The second issue is to check the pattern of youth crime pre- and post-reform: Figure 2 clearly illustrates a significant reduction in the incidence of youth crime post-reform.

Taken together, these two pictures provide a compelling story of the link between education reform: a rise in

average education and a seemingly causal decline in youth crime. More detailed analysis, controlling for additional factors, indicates that the reform increased the years of schooling by 0.26 years and decreased youth crime for young men aged 15 to 21 by 0.008.

An estimate of the causal impact of education on crime can be calculated by the ratio of these two figures, producing a highly significant reduction in crime of 0.03. Placing this result in context, the average pre-reform offending rate was 0.08, which means that increased education levels reduced crime by about a third.

Figure 3 provides a graphical interpretation of our results, showing crime-age profiles before and after the reform for all offences, and broken down into violent, property and drug offences.

Two important points are clear. First, the reform not only reduced crime overall but a reduction is also evident for the three broad aggregates of property crime, violent crime and drug crime. The pattern also suggests that the largest reduction in youth crime is for property crime.

The second important implication of Figure 3 is that of a distinct pattern of crime reduction that varies by age and by broad crime type. Specifically, crime reduction is greater for those aged 17 and younger compared with those aged 18 to 21. This sheds light on the reasons underlying the relationship between education and crime.

The
crime-reducing
effects of
education are
concentrated in
property crime

Previous research suggests two competing but complementary explanations. One is that education boosts young people's human capital and consequently raises the rewards to labour market participation relative to a life of crime. The alternative explanation is that a mandatory increase in years of education leads to an 'incapacitation effect' – that is, a lack of opportunity to commit crime when kept in the classroom to a later age.

The fact that younger age groups – those still in school – experience a greater reduction in crime confirms the importance of the incapacitation effect. But – and this is important – the fact that crime levels remain lower post-school suggests that the incapacitation effect is

not the sole impact of education: increasing education levels also has a longer-run crime-reducing impact.

Finally, we examine the impact of the education reform on the typical age at which criminal activity begins. One possibility might be that the reform simply delays the inevitability of some young men's slide into a life of crime.

In fact, the empirical results suggest quite the contrary. The reform significantly reduced the probability of ever offending. The proportion ever offending for the group of young men not affected by the reform was 0.28: it fell by 0.05 (corresponding to an 18% reduction) for those directly affected.

This article summarises 'Larrikin Youth: New Evidence on Crime and Schooling' by Tony Beaton, Michael Kidd, Stephen Machin and Dipa Sarkar, CEP Discussion Paper No. 1456 (<http://cep.lse.ac.uk/pubs/download/dp1456.pdf>).

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Figure 3:
Youth crime age profiles before and after Queensland's Earning or Learning education reform

