

Digest of the PricewaterhouseCoopers Report

The RSC is sending a copy of this report to all schools and colleges in an attempt to give teachers data that can be used to dispel the myth that financial rewards for chemistry and physics graduates are poor.

We hope the findings will be shared with those involved in careers education and guidance as well as being used by science teachers.

Introduction

In 2005 the Royal Society of Chemistry (RSC) and the Institute of Physics (IoP) commissioned PricewaterhouseCoopers (PwC) to undertake an analysis of the benefits of UK higher education attainment.

Using established econometric methodology and data from the Quarterly Labour Force Surveys, the economic costs and benefits associated with education to first degree standard were calculated.

The results presented have been obtained by considering the earnings and employment benefits associated with getting a degree, taking into account a variety of other contributory factors (such as age, gender, region of residence etc). This was done to ensure the economic benefit resulting from the qualification was assessed rather than the other differentiating characteristics of the graduate population. In particular, the analysis assesses the value of degree subjects rather than particular career paths.

The analysis is based on a financial cost model and it is important to note that this study does not take into account the "non-financial" or social benefits, such as the value of the experience of going to university, improved health benefits (particularly over the longer term), reduced incidence of criminal behaviour and technological progress associated with specific degree subjects.

Key findings

The value of higher education to an individual

- Over a working life, the average graduate will earn around 23% more than his/her equivalent holding two or more 'A' levels.
- Chemistry and physics graduates will earn on average over 30% more during their working lifetimes than 'A' level holders.
- The figure of 30% compares with between 13 and 16% for graduates in subjects including psychology, biological sciences, linguistics, and history.
- The average monetary value, in today's terms, of completing a degree is an increase of £129,000 in lifetime earnings compared to those of people with 2 or more 'A' levels.
- There is wide variation in the value of different degree subjects. For example, the combination of enhanced employment and annual earnings suggests that graduates in chemistry and physics earn well above the average, with the overall value for these subjects currently standing at around £185,000-190,000 more in lifetime earnings than achieved by those with 2 or more 'A' levels.

- The analysis also shows that graduate earnings grow at a constant rate during the first few years after graduation, regardless of the degree subject.
- However, graduate earnings show marked differences in the mid-career years, with particular growth being associated with chemistry and physics degrees when compared with other subjects.
- These findings suggest that the use of starting salaries as comparators for subjects, and their specific use to illustrate longer term career potential, may be misleading, as they reflect a snapshot picture rather than a lifetime estimate of potential earnings.
- Based on existing literature, the financial benefit of completing a degree is much greater for women than for men. This may be due in part to the relatively low earnings of non-graduate women.

Rates of return to the individual

- The analysis also assesses the costs associated with undertaking a degree, trading them off against the economic benefits.
- The individual rate of return to the average degree holder is about 12% per annum. This compares with an individual rate of return for graduates in chemistry and physics of approximately 15% per annum. Undertaking a chemistry or physics degree provides an above average investment to the individual.

Other factors considered in the report

- The value of higher education to the state.
- Rates of return to the state.
- Likely impact of the introduction of top up fees in 2006/07.
- Comparison with Germany.

Other Surveys comparing benefits of education

The Centre for the Economics of Education based at the London School of Economics have produced a report DP47 Dec 2004 'Evaluating the Impact of Education on Earnings in the UK', which can be accessed at <http://cee.lse.ac.uk/publications.htm>. This is based on a long term study of people born in Britain in a week in March 1958. This concludes that compared to leaving school at 16 without qualifications, the average return to O-levels is around 18%, to A-levels 24%, and to higher education 48%.