Education Policy in the UK

Stephen Machin* and
Anna Vignoles**

Introduction

Throughout the post-war period there have been many attempts to reform the UK education system, often with an explicit intention to try and make it more productive. The list of education policy reforms that have been attempted over the last 50 years is quite extensive, and recently the UK (and in particular England and Wales) has introduced many innovative market-oriented reforms to its education system, in an attempt to raise standards. The most striking recent reform is that parents have increasingly been given much more choice in terms of the school attended by their children, and schools have been forced to be more accountable. Other notable reforms include a nationally prescribed curriculum, vigorous attempts to raise participation in post-compulsory schooling and the introduction of tuition fees for higher education.

In this article we describe a number of the more important educational reforms that have been introduced in the UK during the last decade or so, and where possible we provide evidence of their impact. However, in the UK, although economists and others are increasingly able to inform policy-makers on the impact and efficacy of specific policy interventions, the evaluation of specific policies in a rigorous manner unfortunately remains relatively unusual. This is mainly because the design of policy interventions is often such that they are not amenable to economic evaluation. Here we highlight what one can view as robust findings on each policy intervention, and point to where more evidence is needed.

* Stephen Machin is Professor of Economics at University College London and Director of the Centre for the Economics of Education and Research Director at the Centre for Economic Performance, London School of Economics.
**Anna Vignoles is senior lecturer at the Institute of Education, University of London and a Deputy Director at the Centre for the Economics of Education.

Market reforms

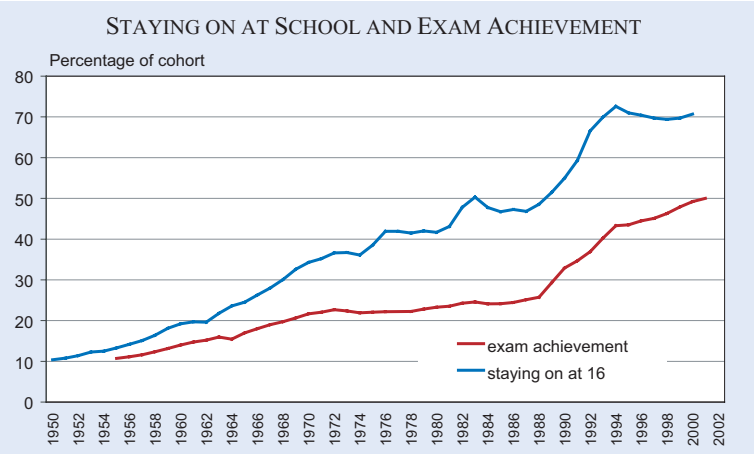
The problem

In addition to concerns about widening access and educational inequality, in the 1980s there emerged widespread fears about poor and falling standards in UK education. Specifically there were concerns that too many individuals were leaving school too early and with little in the way of basic skills.

The data is supportive of these concerns. Firstly, although the staying on rate at age 16 (the compulsory school leaving age in the UK) had been increasing over a number of years, as shown in Figure 1, it remains low by international standards.[1] Secondly there was growing concern that achievement had stagnated in schools, particularly in the compulsory phase. This is illustrated in Figure 1 below which shows the exam success rate at age 16, i.e. the proportion of the cohort achieving the equivalent of 5 or more grades A*-C at GCSE.[2] The proportion succeeding in their examinations at age 16 remained stagnant from around 1970 to the mid 1980s. Thus in the 1980s not only were around half the cohort leaving full time education altogether after the age of 16 but they were leaving with no qualifications. More than two thirds of the cohort did not achieve examination success at age 16 and therefore entered the la-

[1] See, *inter alia*, OECD (2005).
[2] The General Certificate of Secondary Education (GCSEs) are examinations taken at the age of 16. They replaced Ordinary (O) levels and Certificates of Secondary Education (CSEs) in 1988. Here the two sets of qualifications are equivalized, thus a GCSE grade A*-C is equivalent to an O level grade A-C or CSE grade 1.

Figure 1



Notes: Staying on is defined as the percentage of pupils staying on after the compulsory school leaving age. The exam achievement series measures the percentage of school-leavers achieving five or more higher grade GCSE (or O level) passes. Data for 1994–2000 comes from DfES Statistical Bulletins. Be-fore 1994, data are taken back using a series very kindly provided by Duncan McVicar (see McVicar and Rice 2001 for details).

Source: Clark, Conlon and Galindo-Rueda (2005).

bour market with no academic qualifications at all. Of course many of these individuals went on to take vocational qualifications, which are discussed later in this article, but nonetheless there was a widespread perception amongst UK education policy-makers that the UK had a particular problem with its so-called "long tail of low achievement".

The policy

In the light of these concerns, successive Conservative governments in the 1980s and 1990s increased the pace of reform and introduced so called "market mechanisms" into the UK education system, in an attempt to force schools to raise standards. The move towards a "quasi-market" in education was kick started by a significant piece of legislation – the 1988 Education Reform Act – which not only introduced the market reforms discussed here, but also the National Curriculum described in Section 3.[3]

The package of market-oriented reforms aimed to increase parental choice and thereby improve the accountability of state funded schools. Parents could, at least theoretically, choose which school their child attended and could also have representation on school governing bodies. School funding became more closely linked to student enrolment numbers, giving schools the incentive to attract and admit more students. Some schools were also allowed to take control of their own budgets[4] and be financed directly from the central government (as opposed to being under local government control). This gave them greater autonomy in their operations and in particular over which students they admitted to the school.

Alongside greater parental choice, policy-makers also endeavoured to improve the information available to parents about the effectiveness of schools, by way of publicly available test score information. This information was quickly re-produced by the media in the form of educational "league-tables", showing the position of schools relative to one another, in terms of their examination success rates at age 16. Later, as more test score information became available these league tables became more sophisticated, focusing on a range of outcome measures, rather than just examination success at age 16 and often taking a value added approach, i.e. taking account of the prior achievement of children entering a particular school. Nonetheless even today, newspapers still focus most on the overall exam pass rate in different schools as being the issue of primary interest to parents.

There are, however, significant limits to the operation of a quasi-market in the UK education system. Schools are generally not allowed to go "bankrupt", i.e. exit from the market, and many parents still lack full information on the quality of schools. This of course weakens the incentive for schools to improve. In fact understanding the exact nature of the incentives faced by schools is a problematic area, from a theoretical perspective. The literature on public sector service delivery (Dixit 2002; Besley and Ghatak 2003) would suggest that it is not clear what the objectives of decision makers in schools actually are. Schools are not like private sector firms where the objective is generally to maximise profits. Rather, in the case of schools, teachers and head-teachers have often-conflicting objectives. Of course there are also multiple outputs from the education system, ranging from improving test scores to engendering a love of learning. Thus, as Besley and Ghatak (2003) state, the critical issue facing policy makers is to work out the best means by which competition, incentives and accountability can be brought together to enhance educational outcomes in the broadest sense. Whether the UK achieved this is, of course, an empirical question.

The evidence

Bearing this theoretical literature in mind, it is unsurprising that a major concern in the UK is the unforeseen incentive effects of the market reforms. The evidence (mainly from the United States, e.g. Hoxby, 2000, 2003a, 2003b) shows that increased competition among schools and moves to decentralize school finance can enhance attainment, but can raise inequality because richer parents are better able to take advantage of a more market-oriented system. This, of course, has a productivity cost associated with it, in that often more able pupils from poor economic and social backgrounds fall behind. This is particularly important in the UK context with its tail of poor achievers, which is most obvious amongst poor and disadvantaged students. Empirical evidence is emerging that these concerns are manifest on the ground. For example, high socio-economic groups appear to

[3] See Le Grand (1991, 1993) or Adnett and Davies (2002) for descriptions of the "market-led" reforms in the UK.
[4] The major provisions of the Act were to set up a National Curriculum, to introduce testing and league tables, to offer local management of schools and to increase accountability (through a regular inspection regime and from changing the nature of school governing bodies). The Act also set up grant maintained (GM) schools that were allowed to select up to 10 percent of their pupils on the basis of ability or aptitude, and City Technology Colleges (CTCs), the first attempt to bring the private sector closely in to the state sector as they are part funded by private sector business.

have better information on, and understanding of school performance, via league tables (West and Pennell 1999). If wealthier parents act on this information, choosing for their children to attend the best schools, then there is a clear tension between strategies to raise standards and policies to reduce inequality. Socio-economic background also relates to school quality and pupil performance via peer groups. For example, attending a school with very few children from lower socio-economic groups is highly beneficial academically speaking (Feinstein 2003). If parental choice leads to greater socio-economic segregation across schools, such peer group effects will further reinforce socio-economic disadvantage.

The evidence on the extent of educational inequality in the UK somewhat counters this rather pessimistic view, however. Table 1, for example, shows staying on rates at age 16, broken down by parental income group for a number of different cohorts (the cohort birth year and the year that the cohort were aged 16 are given in the first column). Since the staying on decision occurs at age 16, the three years we look at are 1974 (for the 1958 cohort), 1986 (for the 1970 cohort) and 1996 (for the 1980 cohort). The Table shows the proportion staying on beyond age 16 for people from high, middle and low-income families. The last two columns then give the unconditional and conditional gaps in the staying on rate between children from the highest and lowest income families. The unconditional gap is simply the gap in participation rates between high and low income children. The conditional gap is the gap that remains once one has allowed for some other factors that influence participation, in particular ability of the child and gender.

Clearly there has been a rise in the staying on rate for all children, regardless of the income level of their family. Furthermore, in the early period inequality grew. Between 1974 and 1986, staying on rates rose fastest for children from high-income backgrounds. By contrast, during the period when some of the market reforms discussed above were in place, i.e. between 1986 and 1996, staying on rates grew faster for children from the lowest income backgrounds. Thus educational inequality rises between the first two cohorts, by 0.14 percentage points, and falls, by 0.13, between the second and third. This provides very preliminary evidence on the impact of market reforms on inequality however, given that the sixteen year olds considered in 1996 had spent most of their time in the education system before market reforms were introduced.

Of course the motivation behind the introduction of the market reforms was to raise standards and achievement, rather than issues related to inequality. The evidence on the impact of the reforms on children's achievement is minimal however. Empirical evidence from the US (Chubb and Moe 1990) is supportive of the view that decentralized schooling systems can produce better results, measured in terms of educational outcomes (see also Hoxby 2000). The only evidence for the UK to date is Bradley et al. (2001) which found that schools with the best examination performance grew most quickly and that increased competition between schools led to improved exam performance. More recent work finds only very limited evidence of choice and competition effects on pupil achievement. Gibbons, Machin and Silva (2005) report little evidence of a link between choice and achievement, but find a small positive association between competition and school performance. However, they attribute this to endogenous school location or pupil sorting. Only in a minority of cases, the one in five or so of the school population who attend religious primary schools is there any positive causal impact of competition on pupil achievement.

Table 1

Staying on rates (proportions) by parental income group

Cohort and year	Parental income group			Educational inequality (unconditional)	Educational inequality (conditional)
	Lowest 20 percent	Middle 60 percent	Highest 20 percent		
1958 cohort (1974)	.21	.27	.45	.24 (.02)	.24 (.02)
1970 cohort (1986)	.32	.43	.70	.38 (.02)	.39 (.02)
1980 cohort (1996)	.61	.71	.86	.25 (.03)	.23 (.03)
Change 1974–1986	.11	.16	.25	.14 (.03)	.15 (.02)
Change 1986–1996	.29	.28	.16	–.13 (.04)	–.16 (.04)
Change 1974–1996	.40	.44	.41	.01 (.04)	–.01 (.04)

Notes: Sample sizes are 5706 for the NCDS 1958 cohort, 4706 for the BCS 1970 cohort and 1610 for the BHPS 1980 cohort. The conditional model adds controls for family size, sex, parents' age and living in a single-parent family. Educational inequality in the conditional case is a marginal effect derived from a probit model of staying on beyond 16 including dummy variables for quintiles of family income. This marginal effect is defined as Pr[Stay On | Top Income Quintile] – Pr[Stay On | Bottom Income Quintile]. Standard errors in parentheses.

Source: Blanden, Gregg and Machin (2005), Table 5.3.

One might of course argue that Figure 1 shows clear evidence that the totality of reforms introduced during the late 1980s and early 1990s had a positive effect, particularly on achievement at age 16. Certainly there has been a dramatic rise in the examination success rate since the late 1980s. However, some care is needed before interpreting the data on this. In 1988 there was a reform of the examination system at age 16, with a switch from the GCE 'O' level system to the introduction of the GCSEs. This reform moved the education system from one that rationed the number of O level passes in a given year to one where, at least in principle, everyone could pass a GCSE (see Gipps and Stobart 1997; Blanden, Gregg and Machin 2005). Furthermore, the GCE 'O' level system was purely exam based, whereas GCSEs often have a substantial coursework component. It has been argued (see Kingdon and Stobart 1998) that this also facilitated an increase in the pass rate achieved.[5] Certainly the most dramatic feature of the data is the structural break that occurs in examination achievement in 1988, with substantial rises in achievement from 1988 onwards. Proving causality however is not possible and this illustrates the problem of evaluating the impact of nationally introduced education policies.

Table 2

Numeracy and literacy performance by age from the international adult literacy survey

	Percentage of adults at IALS level 2 or above					
	Numeracy			Literacy		
	Age 16–25	Age 26–35	Age 36–45	Age 16–25	Age 26–35	Age 36–45
Belgium (Flanders)	93	91	83	92	88	80
Switzerland (German)	93	87	81	93	83	76
Netherlands	92	93	90	92	94	91
Sweden	95	96	93	96	95	93
Germany	96	95	94	91	88	86
Ireland	82	80	77	84	84	79
Britain	78	80	81	83	82	83
USA	74	80	82	77	80	81

Notes: Based on IALS measurement of "quantitative literacy" and "prose literacy".

Source: OECD, *Literacy, Economy and Society*, pp. 152 and 154.

Curriculum reform

The problem

In addition to concerns about participation and examination achievement, it has also been recognised by education policy-makers that the UK has a particular problem with basic skills. Table 2 shows the level of basic skill in numeracy and literacy by age group, taken from the International Adult Learning Survey (IALS 1995). Specifically, the table shows the proportion of adults with numeracy and literacy skill levels at IALS Level 2 or above (deemed by policy-makers to be the minimum level of skills required to function effectively in the labour market). Amongst middle age workers, age 36-45, the UK performs around the average, as compared to other IALS countries. However, unlike in other countries, in the UK numeracy and literacy skill levels actually start to fall among younger workers. This was suggestive that the UK education system was becoming increasingly less effective in producing workers with adequate levels of basic skills.

The policy

To tackle the problem of poor literacy and numeracy, as well as address general concerns about poor standards, the UK introduced two other significant national policies. Firstly, in the late 1980s a standardized national curriculum was introduced for pupils aged between 7 and 16. The purpose of the national curriculum was to raise standards by ensuring that all students study a prescribed set of subjects up to a minimum level until the age of 16. The second policy reform, in 1998, was the introduction of the National Literacy and Numeracy Strategies. These strategies involved all primary schools allocating part of the daily curriculum to literacy and numeracy hours, with the specific aim of developing pupils' basic skills. The content of these daily literacy and numeracy lessons, and indeed how they should be taught, was tightly prescribed by central government. Students' understanding of the curriculum also began to be tested, via the use of national tests taken at ages 7, 11, 14 and 16 (or Key Stage 1, 2, 3 and 4).

Whilst the national curriculum was an example of a highly centralised education policy, contrasting to the

[5] This may also have affected the distribution of educational attainment at age 16 (for example, the shift to coursework seems to have been a factor in the strong improvement shown by girls relative to boys: see Gorard, Rees and Salisbury (2001) or Machin and McNally (2005).

devolution of power and accountability to schools inherent in the market reforms described above, it has also generated more information for parents on the quality of each school. Thus the national curriculum and accompanying testing regime may have also enhanced the operation of the quasi-market.

To understand why education policy-makers felt the need for a tightly prescribed national curriculum and daily lesson plan in primary schools, it is helpful to consider briefly the labour market for teachers. There are currently severe problems in attracting high ability, highly qualified students into teaching in the UK (Chevalier and Dolton 2005). In the short run, it appeared that being more prescriptive in what teachers should be teaching (and teaching them how to teach it) might raise standards, at least in the absence of being able to recruit more effective teachers. Of course in the longer term, an important policy aim is to try and re-establish teaching as an important and well-respected profession, which sits uneasily with policies that take away teachers' autonomy. However, this longer run objective clearly requires policy-makers to think seriously about improving the total compensation package for teachers, including of course their pay relative to other well respected professions, as well as their non-pecuniary conditions of work (Chevalier and Dolton 2005). Whilst some reforms on teacher pay and conditions have been introduced (performance related pay for example), and others are on the legislative agenda, there is no empirical evidence on the impact of these changes since the policies have been nationally introduced with no attempt at prior evaluation. Indeed that is the case with much of the curriculum reform described here, as is evident from the discussion on evidence below.

The evidence

Given that the national curriculum was introduced at the national level, a robust evaluation of its impact has not been possible. There is, however, evidence on the effectiveness of the literacy hour, since it was piloted prior to national implementation. Machin and McNally (2004) undertook an economic evaluation of the National Literacy Project (NLP), which was a pilot project, where the literacy hour was introduced in about 400 English primary schools in 1997 and 1998. This pilot resulted in children being exposed to the literacy hour in these schools for two years before the national roll out took place. Their analysis shows substantial improvements in reading and English took place (for example, reading scores rose by around .09 of a standard deviation) for a policy that is not very costly (just over £26 per pupil/year, in 2004 prices). This work suggests that improving the way in which teaching is delivered – in their case through the well-structured literacy hour – can provide a cost effective means of raising pupil attainment.

Raising participation in post-compulsory schooling

The problem

The relatively small proportion of young people staying on beyond the compulsory schooling age in the UK has already been discussed in Section 1. However, if school leavers went on to undertake part-time high quality vocational training that resulted in well-respected qualifications with high value in the labour market, then the fact that too few young people stay on in full time education would not be such a major issue. In the UK however, this is not the case. As Table 3 shows, the UK still has lower proportions of its workers at Level 2 or above, whether one considers vocational or academic qualifications. In fact the gap between the UK and other countries is higher when one focuses exclusively on vocational qualifications, particularly at Level 2. For policy-makers at least, this international evidence suggests that the UK has too few young people pursuing a vocational qualification, and too many dropping out of education and training altogether, and thereby entering the labour market with no qualifications.

Table 3

Percentages at qualification levels 2+ and 3+ in the UK, France and Germany, by type of qualification

	Level 2+			Level 3+		
	UK	France	Germany	UK	France	Germany
16–64 year olds, general	27	31	25	20	25	22
16–64 year olds, vocational	27	41	58	17	12	52
25–28 year olds, general	33	40	33	24	36	30
25–28 year olds, vocational	28	43	52	17	18	48

Notes: The data refer to 1998, except for Germany, which is for 1997. The German results refer to the old West Germany only.

Source: Steedman (1999).

The policy

There are two major policies that are worthy of mention in relation to attempts to raise participation in post-compulsory schooling in the UK. The first is the perennial (and often ineffectual) attempts at qualification reform, designed to enhance the attractiveness and labour market value of vocational qualifications. The second policy was the introduction of an Education Maintenance Allowance, which paid individuals from disadvantaged backgrounds a small means-tested allowance if they stayed on in full time education beyond the age of 16. We start however, by discussing the reform of the vocational qualification system.

Vocational education in the UK is seen as a particularly problematic area. The system of vocational training and qualifications in the UK is complex and has changed substantially over time. Certainly there is no unified system of vocational education, as is found in some other countries such as Germany. There are hundreds of different vocational qualifications currently available. Different providers offer very different qualifications, with quite different requirements in terms of achievement. This has left students, parents and employers somewhat confused about the content and economic value of different vocational qualifications.

Despite this, full-time vocational education is chosen by around 25 percent of all 16 and 17 year olds in the UK. This has risen from just under 15 percent in the mid-1980s (West and Steedman 2003). Vocational education therefore represents a sizable part of the UK education system. Part of the problem of vocational education in the UK stems from continued unsuccessful attempts to achieve so called "parity of esteem" between vocational and academic education. Numerous reforms have been introduced, all in an effort to improve the status of vocational qualifications, as compared to their academic counterparts (GCSE/A-levels). Of course the instability that this continual reform generates, itself undermines the value of vocational qualifications.

In the UK in the 1960s vocational education typically consisted of one day a week of study at a further education college, in conjunction with an apprenticeship. This system led to qualifications being provided by different awarding bodies depending on the industry. During the 1970s and 1980s the UK apprenticeship system virtually collapsed in the traditional apprenticeship sectors. Various initiatives attempted to replace the traditional apprenticeships (West and Steedman, 2003) with yet more qualifications, increasingly taken full time at further education colleges and with no work based element. These initiatives are too numerous to mention but the most recent reforms of note are the development of National Vocational Qualifications or NVQs and the General National Vocational Qualifications or GNVQs.

Introduced in 1988, NVQs were originally intended as competence based qualifications. They were designed to certify existing occupational knowledge and skills, and were targeted at those in work. Many criticisms have been aimed at NVQs, in particular that they are too low level and do not require sufficient vocational knowledge and skill. GNVQs, on the other hand, were introduced in 1992 and were designed to be largely classroom-based taught vocational qualifications. The aim was to provide an option that would enable students to either enter the world of work directly afterwards or to continue with further study. The reforms continue apace however. Most recently vocational GCSEs have been introduced, by design equivalent to their academic GCSE counterparts, and GNVQs are shortly to be abolished.

Alongside this, there has been a concerted effort to reintroduce high quality apprenticeships. In 1995 the Modern Apprenticeship scheme was introduced to provide a high quality vocational option for more able students. Modern Apprenticeships are modelled on the German dual system of apprenticeship, and are aimed at young people (age 16-19). The apprenticeship prepares the worker for a NVQ level 3 qualification, and generally lasts around 3 years. The UK apprenticeship rate is now greater than that of France, Finland and the US, although still well below the levels in Germany and Denmark.

Policy-makers did recognise however, that simply changing the nature of vocational qualifications was not, by itself, going to necessarily encourage higher participation. In particular, it was unlikely to encourage poorer students to continue on in full-time education to take, for example, a GNVQ. The policy-question was therefore how does one target poorer students and encourage them to stay on in education for longer? The policy solution was the Education Maintenance Allowance (EMA). The objective of the EMA was to raise post-compulsory educational participation and retention in education of young people (age 16-19) from low income families. Education Maintenance Allowances are weekly term time only pay-

ments made to students aged 16-19 for staying on in full time education for 2-3 additional years. The amount paid to the student varies and is means tested, with a maximum of £30 per week. Receipt of the allowance is conditional on attendance at school or college and in addition the scheme has financial bonuses for students who progress well in their chosen education course. The EMA scheme was therefore designed to give young people from disadvantaged backgrounds an added incentive to stay on in education and to help them meet some of the additional costs associated with full time education. It is estimated that in 2004, around 50 percent of young people aged 16-19 lived in households with an income level that qualified them to be eligible for the EMA.

One unique feature of the Education Maintenance Allowance scheme is that it was thoroughly evaluated prior to full national implementation and the evaluation design was methodologically robust. In 1999, Education Maintenance Allowances were introduced in England on a pilot basis. These pilots were then extended to about a third of the country between 2000-2004. In 2004, the EMA was rolled out throughout the UK and, as we shall see when discussing evidence, it is viewed as a highly successful policy intervention.

The evidence

We start by discussing the impact of the continual reform of the UK vocational education system, i.e. the development of new vocational qualifications. Perhaps the best way to evaluate new qualifications is to consider their labour market value, since this reflects the demand by employers for this type of qualification and the skills embodied in it and will indicate the attractiveness or otherwise of the qualification for young people. The evidence on this is clear. NVQs and indeed GNVQs, have minimal economic value in the labour market (Dearden et al. 2002). In particular, NVQ2 qualifications actually have a negative impact on individuals' wages, in many sectors of work. This is suggestive of a negative signalling effect from taking these low level qualifications, i.e. employers perceive that individuals who take these vocational qualifications to be of low ability and actually prefer individuals with no qualifications at all. This is reinforced by the fact that many individuals who have been unemployed for some time take NVQ2 qualifications. Even higher level NVQ qualifications, i.e. Level 3-5, have very low labour market value and considerably lower than their academic equivalents. Furthermore, it is not the case that all vocational qualifications have lower labour market value. Firstly, the older vocational qualifications (HNC/HND) do have substantial labour market value, arguably on a par with their academic counterparts. In terms of new qualifications, where an apprenticeship leads to a NVQ level 3 qualification, it leads to a substantial wage premium (McIntosh 2002). The evidence therefore points to the lack of success policy-makers have had, by and large, in reforming the vocational qualification system, but also indicating that some interventions, such as the re-introduction of apprenticeships, might be moving in the right direction.

Of course a major reason that employers hold vocational qualifications in lower esteem (and pay individuals with these qualifications less) is precisely because in the UK less able students choose to go down the vocational route (Clark, Conlon and Galindo-Rueda 2005). However, there are additional problems within the vocational education system itself, at least in the UK. The proliferation of vocational qualifications in the UK has led to a system little understood by employers. If employers are not even sure what a person has learned as a result of taking a particular vocational qualification, it is unsurprising that some vocational qualifications have very little or nil economic value. Continuing to develop new vocational qualifications in the fruitless struggle for parity with academic qualifications may actually exacerbate the problem.

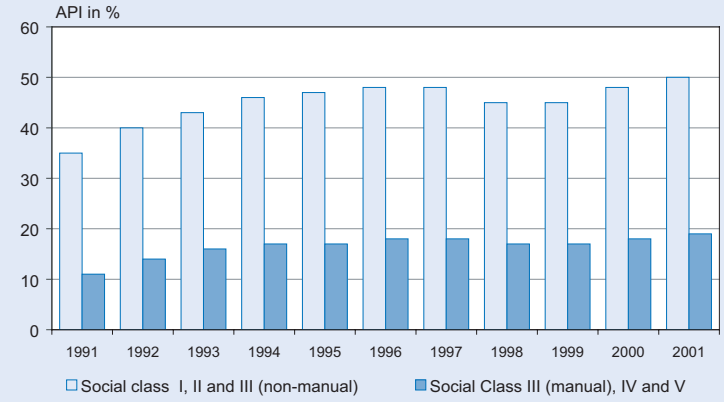
By contrast, policy-makers have had much more success with their Education Maintenance Allowance policy. The results from the EMA evaluation suggest substantial impacts from the subsidy. Dearden et al. (2005) found that overall, educational participation post 16 was 4.5 percentage points higher amongst those eligible for the EMA (as compared to an education participation rate of 64.7 percent in the control sample). The EMA had a different impact for different groups of students however. The EMA increased initial educational participation of eligible males by 4.8 percentage points and of eligible females by 4.2 percentage points. Of course if the EMA encourages students who would otherwise drop out to stay on in education it is a possibility that these students will find their course of study too difficult. They may then drop out subsequently. However, for individuals in their second year of receipt of EMA, the impact of EMA increased to 7.6 percentage points for males and 5.3 percentage points for

females. This is encouraging in terms of the longer-term impact of EMA. Dearden et al. (2005) concluded that the EMA not only increases participation in full time education beyond the compulsory school leaving age but also enhances retention in full time education subsequently.

The evaluation by Dearden et al. (2005) also found that around half of the individuals who stayed in education were drawn from inactivity rather than from work. Thus the subsidy did not simply draw young people away from the world of work and back into education. Rather a significant proportion of the people who continued in education due to the EMA would otherwise have been inactive.

Figure 2

PARTICIPATION RATES IN HE BY SOCIAL CLASS
Great Britain, 1991 to 2001



Notes: Top 3 social classes: professional, managerial, intermediate occupations, skilled non-manual; Bottom 3 social classes IIM, IV, V – unskilled non-manual, skilled manual, unskilled manual.
Source: Department for Education and Skills Age Participation Index.

In summary, the attempts to raise educational participation post-16 have had mixed success. Reform of the vocational education system has not, by and large, been successful. This is obvious from the fact that fifteen years later, policy-makers are still undertaking radical reform of this system. However, the Education Maintenance Allowance offers a more promising way of raising participation, although it is too early to deduce its impact on participation nationally.

Higher education reform

The problem

Higher education in the UK is viewed as a success story, with continually rising participation in higher education (HE) since the late 1960s. However, there have been concerns about who is accessing HE. As shown in Figure 2, even during the last fifteen years, participation in HE has largely been the preserve of the higher socio-economic groups in the UK. Furthermore, there is evidence that the gap in HE participation between richer and poorer students actually widened, at least in the mid-and late 1990s (Machin and Vignoles 2004; Blanden and Machin 2004). Contrary to what many believed before the expansion of higher education, the expansion appears to have actually acted to increase educational inequalities, so that a greater share of HE participants is from well-off backgrounds (Machin and Vignoles 2004). This means that although poorer students are more likely to go on to higher education than they were in the past, the likelihood of them doing so relative to their richer peers is actually lower than was the case in earlier decades. This is one of the key policy challenges facing many governments and certainly is a major problem in the UK. This matters if, as appears to be the case, one is in a situation where more able children from less advantageous economic backgrounds are missing out.

The policy

The government's primary HE policy over the last two decades has been to enable and encourage further expansion of the sector. Expansion is arguably needed for two reasons. Firstly, policy-makers want to continue to expand the supply of skilled labour in order to compete internationally. Secondly, they want to improve the chances of anyone, regardless of socio-economic background, attending HE. Thus the government has a target of getting 50 percent of all young people to attend university by 2010. Of course, the next issue is how one might finance such an expansion. In the UK, higher education has traditionally been free at the point of use for students. However, as higher education participation rose in the 1980s and 1990s, this became increasingly problematic. Firstly, the level of per capita resourcing in HE fell dramatically, as student numbers were expanded whilst funding remained more or less constant in real terms. For example, between 1989 and 1997 per student funding fell by 36 percent (Clark, Conlon and Galindo-Rueda 2005). In response to these problems, a means tested tuition fee was introduced in 1998. The fee was for a maximum of

£1,000 per year and had to be paid upfront, i.e. prior to the student starting the year of study in HE. Poorer students were exempt from these fees. Previously however, poorer students were also entitled to a grant to subsidise their maintenance costs whilst at university. Such grants were gradually reduced in value in real terms and phased out completely in 1999. Grants were replaced by means-tested loans, repayable on an income contingent basis after graduation.

In 2003, the Labour government proposed some further radical reforms. The purpose of the reforms was to allow universities to increase their funding, by levying higher tuition fees on students, and for institutions to differentiate themselves by charging higher or lower fees than other institutions. Universities will therefore be able to charge a higher amount, up to £3,000 per year. The fee is not payable up front however. Instead the fee debt will be paid post graduation and on an income contingent basis. In other words, graduates rather than students will pay back tuition fee loans and if their income level is sufficiently low they do not have to meet the debt payments on the loan.

The evidence

There are two main questions concerning the expansion of higher education. First, one needs to address the question as to whether more graduates are needed and whether, in the face of an increased supply of graduates, the investment in postsecondary degree acquisition remains one that yields a significant return. Secondly one needs to determine the impact of expansion, and financial reform, on inequality in HE participation.

The demand for graduates still outstrips the supply, and so there is still a significant payoff for possessing higher educational qualifications (Blundell, Dearden and Sianesi 2005; McIntosh 2005). For example, in Table 4 below, wage and employment differentials between graduates and non-graduates are shown over the period 1980-2004. It is very clear that the graduate wage premium has not fallen despite the very sharp increases in the supply of graduates and in fact has actually risen sharply at the same time as the supply rises (until the 2000s when it stays flat). Some recent evidence does suggest a slight fall in the wage premium for very recent graduates in specific subjects (Sloane and O'Leary 2004; Walker and Zhu 2005). In particular, very recent arts and humanities graduates may have seen a small fall in the immediate return to their degrees.

Table 4

Aggregate trends in graduate/non-graduate employment and relative wages, 1980–2004

	UK labour force survey/ General household survey	
	Graduate share of employment, in %	Relative weekly wage (full-time)
1980	5.0	1.48
1985	9.8	1.50
1990	10.2	1.60
1995	14.0	1.60
2000	17.2	1.64
2004	21.0	1.64
1980–2004	16.0	.16
1980–1990	5.2	.12
1990–2000	7.0	.04
2000–2004	3.8	.00

Notes: Sample is all people aged 18–64 in work and earning, except for relative wages, which are defined for full-time workers. The relative wage ratios are derived from coefficient estimates on a graduate dummy variable in semi-log earnings equations controlling for age, age squared and gender (they are the exponent of the coefficient on the graduate dummy).

Source: Machin and Vignoles (2005), updated.

Overall, however, the evidence currently supports the view that the demand for graduates is sufficient to justify further expansion, although we are probably likely to see an increasing diversity of graduate outcomes, with some lower ability graduates in certain subjects experiencing low returns to their degrees. One effect of the introduction of tuition fees, however, is that it is likely that students will be more responsive to market signals about the value of different degrees and will make their choices accordingly. This should, in the absence of other market constraints, mean that we do not see substantial expansion and over supply of certain types of graduate.

Evidence on the extent of inequality in HE participation is somewhat more complex. The gap in HE participation between richer and poorer students has actually widened in recent years (Machin and Vignoles 2004; Marcenaro-Gutierez, Galindo-Rueda and Vignoles 2004). Further examination suggests that much of this gap is due to the fact that poorer students lack the qualifications required to enter HE. In terms of educational policy, the question is whether tuition fees have worsened the situation. Tuition fees were introduced in the UK in a manner that has prevented any robust evaluation of their impact on student participation. From an economic perspective, the extensive and robust empirical evidence of persistent high private returns to a postsecondary degree would appear to provide justification for greater student contributions in the form of higher fees. However, the critical point here seems to return to the issue of the

socio-economic mix of students who attend university. If fees are charged (which may in future be, as in the US, differential fees by subject and/or university) then it is absolutely vital that this does not act to reinforce the inequalities already present. Descriptive evidence on the impact of tuition fees introduced in 1998 indicates that the widening of the gap in participation between richer and poorer students is not as a direct impact of tuition fees, given that it occurred prior to the introduction of fees (Marcenaro-Gutierrez, Galindo-Rueda and Vignoles 2004).

Concluding remarks

The evidence on the impact of the various reforms discussed in this article is rather patchy, although it is better for some areas of the education sequence than for others. For example, we are still a long way off from knowing what the impact of market-oriented reform is on student performance and inequality in the UK education system. But whilst we do not know what impact the National Curriculum has had in the UK on pupil achievement, we do know that the literacy hour has proved to be effective in improving primary pupil's reading skills. We know that some of the vocational qualifications introduced in recent decades (NVQ2 for example) have failed to attract any value in the labour market, suggesting these reforms have been unsuccessful in this dimension at least. We know that paying young people from disadvantaged backgrounds a relatively small allowance to stay on in school is likely to increase their chances of doing so. We know that despite expansion of HE, young people from disadvantaged backgrounds are still much less likely to go to university and more worryingly that the gap in participation between rich and poor actually widened in the 1980s and 1990s. We suggest that this is due largely to inequalities earlier in the education system, rather than financial reform and other factors in HE. In other words, poorer students are much less likely to acquire the necessary qualifications to get into HE in the first place. We have only weak evidence on the direct impact of tuition fees, but the evidence we do have suggests that they have not significantly impacted on HE participation by lower income students in the UK.

Of course knowing what works in education is not sufficient to inform policy. As economists, we need to inform policy-makers about what works and at what cost, relative to alternative policy options. Yet there remains a deficiency of good cost benefit evaluations in the field of education. Perhaps the best example of a properly designed evaluation in the UK is the Educational Maintenance Allowance evaluation, but even this does not include a full cost benefit analysis, and there are relatively few examples in the field as a whole. The fact that developments on the cost benefit front have been markedly slow in this field is not due to the laziness of researchers however. Unlike in other fields, such as health economics, data on educational and labour market outcomes has been far more readily available than data on the myriad inputs that go into the education process, such as teachers, books, infrastructure, peer groups and parenting. This is slowly being rectified in the UK at least, with the construction of superior data sets. Therefore in the next 5-10 years, this is where one would expect to see the most progress being made in terms of empirical analysis and how it is used to inform the design and implementation of education policy.

References

Adnett, N. and P. Davies (2002), *Markets for Schooling*, Routledge, London.

Besley, T. and M. Ghatak (2003), "Incentives, Choice, and Accountability in the Provision of Public Services", *Oxford Review of Economic Policy* 19, 235–49.

Blanden, J. and S. Machin (2004), "Educational Inequality and the Expansion of UK Higher Education", *Scottish Journal of Political Economy*, Special Issue on the Economics of Education 54, 230–49.

Blanden, J., P. Gregg and S. Machin (2005), "Educational Inequality and Intergenerational Mobility", in S. Machin and A. Vignoles, eds., *What's the Good of Education? The Economics of Education in the United Kingdom*, Princeton University Press, Princeton.

Blundell, R., L. Dearden and B. Sianesi (2005), "Measuring the Returns to Education", in S. Machin and A. Vignoles, eds., *What's the Good of Education? The Economics of Education in the United Kingdom*, Princeton University Press, Princeton.

Bradley, S., G. Johnes and J. Millington (2001), "School Choice, Competition and the Efficiency of Secondary Schools in England", *European Journal of Operational Research* 135, 527–44.

Chevalier, A. and P. Dolton (2005), "The Labour Market for Teachers", in S. Machin and A. Vignoles, eds., *What's the Good of Education? The Economics of Education in the United Kingdom*, Princeton University Press, Princeton.

Chubb, J. and T. Moe (1990), *Politics, Markets and America's Schools*, The Brookings Institution, Washington DC.

Clark, D., G. Conlon and F. Galindo-Rueda (2005), "Post-Compulsory Education and Qualification Attainment", in S. Machin and A. Vignoles, eds. *What's the Good of Education? The Economics of Education in the United Kingdom*, Princeton University Press, Princeton.

Dearden, L., S. Mcintosh, M. Myck and A. Vignoles (2002), "The Returns to Academic and Vocational Qualifications in Britain", *Bulletin of Economic Research* 54, 249–74.

Dearden, L., C. Emmerson, C. Frayne and C. Meghir (2005), "Education Subsidies and School Drop-Out Rates", *Centre for the Economics of Education Discussion Paper*, in press.

Dixit, A. (2002), "Incentives and Organizations in the Public Sector", *Journal of Human Resources* 37, 696–727.

Feinstein, L. (2003), "Inequality in the Early Cognitive Development of British Children in the 1970 Cohort", *Economica* 70, 73–97.

Gibbons, S., S. Machin and O. Silva (2005), "Choice, Competition and Pupil Achievement", *Centre for Economics of Education Discussion Paper*, in press.

Gipps, C. and G. Stobart (1997), *Assessment: A Teacher's Guide to the Issues, Hodder and Stoughton*, London.

Gorard, S., G. Rees and J. Salisbury (2001), "Investigating the Patterns of Differential Attainment of Boys and Girls at School", *British Educational Research Journal* 27, 125–39.

Hansen, K. and A. Vignoles (2005), "The United Kingdom Education System in an International Context", in S. Machin and A. Vignoles, eds., *What's the Good of Education? The Economics of Education in the United Kingdom*, Princeton University Press, Princeton.

Hoxby, C. (2000), "Does Competition Among Public Schools Benefit Students and Taxpayers?", *American Economic Review* 90, 1209–38.

Hoxby, C. (2003a), *The Economics of School Choice*, Chicago University Press, Chicago.

Hoxby, C. (2003b), "School Choice and School Competition: Evidence from the United States", *Swedish Economic Policy Review* 10, 9–66.

Kingdon, M. and G. Stobart (1998), *GCSE Examined, Falmer Press.*

Le Grand, J. (1991), *Equity and Choice, Harper Collins*, London.

Le Grand, J. (1993), *Quasi-markets and Social Policy*, Macmillan, London.

Machin, S. and S. McNally (2004), "The Literacy Hour", *Centre for the Economics of Education Discussion Paper* 43.

Machin, S. and S. McNally (2005), "Gender and Student Achievement in English Schools", *Oxford Review of Economic Policy*, in press.

Machin, S. and A. Vignoles (2004), "Educational Inequality: The Widening Socio-Economic Gap", *Fiscal Studies* 25, 107–28.

Machin, S. and A. Vignoles (2005), eds., *What's the Good of Education? The Economics of Education in the United Kingdom*, Princeton University Press, Princeton.

Marcenaro-Gutierrez, O., F. Galindo-Rueda and A. Vignoles (2004), "The Widening Socio-economic Gap in UK Higher Education", *National Institute Economic Review* 190, 70–82.

McIntosh, S. (2002), "Further Analysis of the Returns to Academic and Vocational Qualifications", *Department for Education and Skills Research Report*, no. 370.

McIntosh, S. (2005), "Evidence on the Balance of Supply and Demand for Qualified Workers", in S. Machin and A. Vignoles, eds., *What's the Good of Education? The Economics of Education in the United Kingdom*, Princeton University Press, Princeton.

McVicar, D. and P. Rice (2001), "Participation in Full-Time Further Education in England and Wales: An Analysis of Post-War Trends", *Oxford Economic Papers* 53, 47–56.

OECD (2005), *Education at a Glance*, Paris.

Sloane P. J. and N. C. O'Leary (2004), "The Return to a University Education in Great Britain", *IZA Discussion Paper* 1199, Bonn.

Steedman H. (1999), "Report to the Department for Education and Employment: Updating of Skills Audit Data 1998", *Centre for Economic Performance Working Paper*, London School of Economics.

Walker, I. and Y. Zhu (2005), "The College Wage Premium: Over Education and the Expansion of Higher Education in the UK", University of Warwick, mimeo.

West, A. and H. Pennell (1999), "School Admissions: Increasing Equity, Accountability and Transparency", *British Journal of Education Studies* 46, 188–200.

West, J. and H. Steedman (2003), "Finding Our Way: Vocational Education in England", *Centre for Economic Performance Occasional Paper*.