

Stronger together

Businesses and universities in turbulent times

A report from the CBI Higher Education Task Force



www.cbi.org.uk/highereducation

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Foreword by Sam Laidlaw



The UK has a world class higher education sector. But it faces some urgent challenges including the changing needs of business, intensifying international competition and constrained public sector funding. Effective collaboration between the higher education sector, business and government will be critical to the UK's economic recovery and sustainable international competitiveness.

This report was prepared on behalf of business to offer recommendations on how business, the higher education sector and government can each contribute to ensuring:

- Future students have the best chance of success in an increasingly competitive world
- The capabilities of the higher education sector are fully utilised to equip our existing workforce with the skills necessary for today and tomorrow's world
- Research and innovation partnerships between business and higher education have the best chance of success.

Although written from a business perspective, this report recognises that business is not the only stakeholder and that universities have a wider social role to fulfil. Equally all stakeholders, including government, have some difficult choices to make.

We were fortunate in having on this Task Force the vice-chancellors of three eminent universities, as well as business leaders from different sectors, representing both large and small employers. While there may have been differences of emphasis among Task Force members, all have endorsed the content of this report and we hope the initiatives they have outlined will be followed by businesses across the country.

Members were unanimous that the challenges are real and urgent. Business has to step up to the challenge, as does the higher education sector, in providing highly employable graduates and value for money. Finally government must provide the incentives, framework and funding necessary for sustainable success.

A handwritten signature in blue ink that reads "Sam Laidlaw". The signature is fluid and cursive.

Sam Laidlaw

Chairman, CBI Higher Education Task Force
and CEO, Centrica plc

Executive summary

Universities are a vital public good, making a crucial contribution to the intellectual, cultural, social and economic well-being of the UK. They play an essential role in ensuring that the country has the skills and knowledge necessary for its long-term success.

This report sets out what business wants from higher education (HE), and how it can work with government and universities to improve outcomes. Two points should be emphasised at the outset. First, universities are vital to the success and competitiveness of industries and business, but they have other important stakeholders. Second, the report calls on the business community to do more to support students and graduates, to develop closer partnerships with universities on research and innovation activity, and to find better ways of communicating with HE. Businesses will benefit and must therefore contribute more.



What business wants from higher education

A competitive business sector needs excellent universities to produce the graduates, postgraduates, research and innovation that are required to drive economic growth and prosperity. The UK has one of the most successful HE sectors in the world – whether measured by the quality of its graduates and postgraduates, by the amount of world-class research it undertakes, or by the large number of international students it attracts.

Success for the UK in the global economy will increasingly depend on the development of high-value added sectors in services and manufacturing. These in turn will require a highly trained workforce, rich with graduate-level skills. The six business priorities for HE are to:

- Support high-quality research and teaching in increasingly challenging circumstances
- Raise the numbers and quality of graduates in science, technology, engineering and maths (STEM)
- Ensure all graduates have employability skills
- Improve the environment for university-business collaboration on research and innovation
- Encourage more workforce training
- Support diversity in the HE system to cater for an ever-wider range of student and business needs.



Action now will be critical

The HE sector faces big challenges. Public funding will come under severe pressure in the next few years as the government struggles to manage an unsustainable fiscal deficit. At the same time, UK universities are facing growing competition from the emerging economies, as well as from North America, and parts of continental Europe. The private sector is also entering the market, with more for-profit teaching likely to be offered in the future. Business as usual is not an option in the current economic environment, and difficult choices have to be made.

New thinking is required on the financing, structure and mission of our universities if they are to sustain and strengthen their position in a rapidly changing environment.



Why business must do more

Business already does a lot to support students and fund research, but the Task Force believes that employers need to engage and invest more effectively. Each Task Force member has undertaken to do more, and this report also sets out a range of commitments which all businesses should consider:

- Employers should provide greater financial support for new graduate recruits
- Business should do more to encourage the development of the skills it values in science, engineering, technology and maths. The quality and quantity of STEM graduates will improve if business provides more guidance on the content of courses, and offers more opportunities for work experience at secondary school and undergraduate levels
- Undergraduates should be given the chance to undertake real-life projects as part of their degree, and more internships and sandwich placements should be provided. Business should provide guidance on the nature of employability skills in all subjects
- To increase overall research collaboration, business should seek to work with universities as a core part of their innovation activity
- Businesses should seek to engage with the HE system to develop and help finance bespoke training provision for their employees.

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Delivering business outcomes in tough financial times

The current funding models need to be reappraised. Government must recognise that a vibrant university sector is critically important to the well-being of the UK, and that taxpayer support here is already lower than in many other major economies. Heavy cuts in the public funding of teaching and research would damage the long-term competitiveness of the UK. If savings have to be made, the best way would be to get better value for existing expenditure, most obviously in the way the system of financial support for students operates. The goal must be to keep the cost of a university education within an affordable range, and to protect the interests of poorer students. The government is about to establish an independent review of tuition fees, to be completed later next year. The stark choice it will face lies between finding new money to put into the system, or seeing the number of students decline. At this stage, therefore, an increase in fees appears inevitable. It will be up to the universities, with the support where appropriate of business, to provide the extra bursaries that will be needed to ensure that higher education remains open to all.

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How universities can do more for business

Just as companies are having to focus on cutting waste to survive the recession, so universities need to take bold action. The constraints on public funding will provide a spur to develop new ways of generating income, and of addressing difficult issues on pay and pensions. There are strong arguments for greater collaboration between different institutions at a departmental level, and for joint ventures or even consolidation.

Given the financial pressures, the focus must be on quality rather than quantity, and the government's target for 50 per cent of 18-30 year olds to participate in HE should be dropped for the time being. The surge in student numbers over recent decades means that the UK now compares reasonably well with other developed economies in its HE participation rates. And a high priority must be to deal with educational disadvantage at the school level, which reduces the opportunities for many potential university students. Vocational routes must also be supported, including apprentice programmes.

Research collaboration between universities and business has increased over the past decade. To take the process further, the allocation of public funding for research should give more recognition to the potential economic value of excellent research work, and to multi-disciplinary research. Universities should be careful not to price themselves out of research collaboration with the private sector, and should take into account in their costs the long-term benefits of the research relationship to both sides of the partnership.

Fresh thinking is required about the way teaching is funded, in order to encourage innovation in the way that courses are designed and delivered, to encourage more competition for student numbers, and to ensure highly valued subjects like STEM are adequately resourced.

Universities could also improve their capacity to deliver workforce training, including leadership and management courses. Employers must do more to make their needs for this training clear.

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Ensuring students have the skills to succeed

A survey undertaken for the Task Force showed that many recent graduates felt they had not received high-quality careers advice. Others thought more could have been done to help them develop the employability skills necessary to secure the jobs they wanted. Action here would be in the interests of both students and businesses.

Improving the availability and quality of information and advice will help to influence the choices students make, and their demands for particular courses. While they are still at school, students need much more information about the value business places on particular skills. Increasing the number of school students who study science and maths in greater depth will help young people keep their options open until the time comes to consider their higher education choices.

The Task Force believes that business and universities must ensure that all students develop employability skills while still at university. These skills are self-management, teamworking, business and customer awareness, problem solving, communication and literacy, numeracy, and the application of information technology. Language skills are also important in an increasingly globalised workplace. Students should be striving to develop these skills which, alongside their academic qualifications, are not an optional extra.

The Task Force's recommendations will deliver real change

The Task Force has made 24 recommendations to government, universities and students. It is also encouraging businesses to sign up to a range of commitments, designed to improve HE outcomes (summarised on pages eight to nine). Its top priorities are:

- 1 To help raise the numbers and quality of graduates in science, technology, engineering and maths** as well as improving numeracy of all graduates, all young people should be expected to continue some form of maths or numeracy education after the age of 16, dependent on their interests and abilities. The brightest 14 year-olds should be encouraged to take triple science at GCSE or Standard Grade in Scotland (recommendations 22 and 23)
- 2 To ensure all graduates have employability skills**, all businesses should provide work experience, internship and live project opportunities for school and university students (business commitments four, five and six)
- 3 To provide the support required to maintain the quality of teaching and research in HE, tough choices are required.** Savings to make this possible can be made by providing tuition fee loans at the government's cost of capital and removing the interest rate subsidy on all loans; and by refocusing student support through maintenance grants, with support concentrated on those most in need. Because public sector finances are constrained, student contributions will have to increase (recommendations one, two, three and four)
- 4 Government should encourage greater diversity** in the sector by allowing universities more freedom to develop innovative new teaching models that meet business and student needs, and by permitting a greater degree of competition between universities (recommendations eight, 10 and 17).

What will success look like?

The proposed reforms are focused on addressing business priorities for higher education and will deliver:

- Strong business-university partnerships in which employers' needs and HE outcomes are aligned. This is essential if the UK is to have a dynamic economy, built on knowledge-intensive, high value-added sectors
- A sustainable and more efficient HE sector with the right incentives to deliver high-quality teaching and research
- Businesses taking a more active and integral part in developing students' skills and experience of the world of work before graduation
- A marked increase in the quantity and quality of STEM graduates
- A richer experience for students, which will help to prepare them for the world of work
- More universities engaging in collaborative research and workforce training.

The price of failure is high

Failing to address these challenges will mean an increasingly less competitive economy with:

- Businesses finding it harder to recruit the calibre of employee they need from the UK, and looking instead for talent overseas
- A continued shortage of STEM skills, with the UK failing to capitalise on the potential to be world-leaders in sectors such as environmental technology, pharmaceuticals, high value-added manufacturing and financial services
- UK universities losing their world-class reputation for teaching and research, thereby adding further to their financial concerns which in turn may lead to a lessening of quality.

Summary: Task Force business commitments and recommendations

To maintain world-class teaching and research and address funding concerns

Government needs to:

- Provide tuition fee loans at its cost of borrowing, removing the interest rate subsidy for all but those most in need (**Recommendations one and two**)
- Ensure that savings achieved through reforming student support are recycled back into the HE sector to maintain teaching and research quality (**Recommendation three**)
- Refocus student support through maintenance grants so that subsidies are concentrated on those individuals who are most in need (**Recommendation four**)
- Maintain standards of higher education – therefore government and the devolved administrations have little choice but to plan to raise student contributions over time (**Recommendation five**)
- Postpone its 50 per cent participation target for HE, and concentrate instead on raising performance at the school level (**Recommendation six**)
- Welcome competition from the private sector, subject to quality and value for money (**Recommendation eight**)
- Apply a VAT opt-out for HE to encourage more shared services arrangements between universities (**Recommendation 10**)
- Within the overall limit on publicly-funded student numbers, consider reforming the current funding rules to allow universities to meet the demand for increased student numbers in particular disciplines if they wish to do so (**Recommendation 17**).

Universities need to:

- Consider the case for greater collaboration and consolidation, as well as joint ventures with the private sector (**Recommendation seven**)
- Continue to address their cost bases, making efficiency savings where possible (**Recommendation nine**).

Business needs to:

- Sponsor students studying those subjects it values most highly, particularly STEM (**Business commitment one**).

To improve graduate employability

Universities need to:

- Ensure that the employability skills of all students are developed and recognised while they are at university. These skills should be developed alongside their academic qualifications, and be seen as an integral part of higher education (**Recommendation 21**).

Business needs to:

- Provide work experience opportunities for students before and during university (**Business commitment four**)
- Offer more internship and placement opportunities (**Business commitment five**)
- Give students access to real-life projects or resources during their time in HE (**Business commitment six**)
- Consider offering students jobs at the end of the penultimate year of study, as well as during the final year or post-graduation (**Business commitment seven**).

Students need to:

- Take up opportunities to develop their employability skills from day one of their HE experience (**Recommendation 20**).

To raise the quality and quantity of STEM graduates

Government needs to:

- Ensure the level of resource provided for the teaching of STEM in HE is sufficient to enable the delivery of high-quality and relevant STEM education (**Recommendation 18**)
- Ensure that all young people continue in some form of maths or numeracy education after 16 (**Recommendation 22**)
- Encourage all students who have the capacity to take triple science at GCSE or Standard Grade to do so (**Recommendation 23**).

Business needs to:

- Provide financial support for new graduate recruits, for example, through sign-on bonuses (**Business commitment two**)
- Commit time and resources to participating in degree programme advisory boards (**Business commitment three**).

Government, universities and business need to:

- Work together to provide students, their advisers and their family with an effective website so that students can compare the outcomes of different choices, based on high-quality information about employment prospects, teaching quality and economic returns from different courses (**Recommendation 24**).

To improve the environment for university-business collaboration on research and innovation

Government needs to:

- Ensure that the new Research Excellence Framework gives proper recognition to excellent business-relevant research (**Recommendation 11**)
- Make it clear that government support for university-business interaction is to improve the knowledge base and increase economic impact (**Recommendation 12**)
- Ensure that the Higher Education Innovation Fund continues to help universities meet real business needs (**Recommendation 15**).

Universities need to:

- Ensure their negotiators have the knowledge, skills and authority to make the right decisions on how research should be priced (**Recommendation 13**).

Business needs to:

- View working with universities as a core part of innovation activity, and understand that university research must be paid for (**Business commitment nine**)
- Work with public research funders in planning research projects that meet business needs (**Business commitment 10**).

Government, universities and business need to:

- Develop models of good practice for the movement of staff between businesses and universities (**Recommendation 14**).

To encourage the development of workforce training at universities

Government needs to:

- Review the way teaching is funded to allow for a more flexible approach to university studies. There is a strong case for a move to a credit-based system if the red tape burden on universities can be minimised (**Recommendation 16**).

Universities need to:

- Follow the good practice identified in the CBI/UUK report, Stepping Higher, in order to capture a greater share of the employer-funded market for workforce development. In particular, they need to offer more flexible approaches to the delivery of workforce development programmes, exploring opportunities for modular courses which build up towards accredited programmes and making the accreditation process as simple as possible for employers and employees (**Recommendation 19**).

Business needs to:

- Develop relationships with universities and do a better job of explaining their future skills needs (**Business commitment eight**).



1

What business wants from higher education

Economic success for the UK will increasingly depend on the development of high value-added sectors, requiring individuals with graduate-level skills. From a business perspective, the UK's university sector has both considerable strengths and some weaknesses. The strengths must be celebrated and sustained, and the areas of weakness need to be addressed.

This chapter identifies the main challenges, and later sections identify what action is needed:

- UK universities delivering the high-quality teaching and research essential to the UK's success are threatened by government spending cuts
- The UK's best science, technical, engineering and maths graduates are world-class, but the overall number and quality of STEM graduates should be raised
- Graduates' employability skills need to be improved
- More needs to be done to encourage university-business collaboration on research and innovation
- Few businesses look to universities to help with general workforce training.

Ensure all graduates have good employability skills

Apart from STEM needs, many businesses are not concerned about the particular degree subject studied by graduate applicants for work. Two-thirds of the jobs that require graduate level skills are open to students of all disciplines. Both vocational and non-vocational degrees help to develop the skills business needs, and the intellectually curious graduates who want challenging and interesting work (**Exhibit 2**).

“I want students to leave higher education equipped with the employability skills they will need to cope with the challenges of the workplace. Having good business awareness or the ability to tackle day to day problems will greatly benefit a young person and is highly prized by employers.”

Ian Cheshire, Group chief executive, Kingfisher

Universities also have a role to play in nurturing an entrepreneurial spirit among graduates – an ability to demonstrate an innovative approach and show creativity, as well as to understand risk taking in a business context. An increasing number are offering students the chance to study commerce and management alongside their main degree courses, and this is welcomed by business.

Language skills and an ability to work in a multi-cultural environment are also valuable in an increasingly globalised workplace. Foreign language proficiency adds significantly to a candidate’s portfolio of skills, not just in terms of conversational ability, but also general cultural awareness and sensitivity.

“Entrepreneurship is not a character trait found in only a handful of people, it is a state of mind that anyone can develop. That mind-set is one of seeking business opportunities – to look at the market, find an unmet need, and then go out and gather the resources to make it happen. I applaud universities who are helping to inspire the entrepreneurs of tomorrow – whether it’s offering courses in entrepreneurship, support for entrepreneurship clubs or inviting entrepreneurs to speak to students about their businesses.”

Jamie Mitchell, entrepreneur and former Managing Director, innocent drinks

Exhibit 2: All graduates need good employability skills

Self-management – readiness to accept responsibility, flexibility, resilience, self-starting, appropriate assertiveness, time management, readiness to improve own performance based on feedback, reflective learning.

Teamworking – respecting others, co-operating, negotiating/persuading, contributing to discussions, awareness of interdependence with others.

Business and customer awareness – understanding the drivers for business success – including the importance of innovation, taking calculated risks, the need to provide customer satisfaction and to build customer loyalty.

Problem solving – analysing facts and situations, applying creative thinking to develop appropriate solutions.

Communication and literacy – ability to produce clear, structured written work, oral literacy, including listening and questioning.

Numeracy – general mathematical awareness and its application in practical contexts, confidence to tackle mathematical problems in the workplace.

Application of information technology – IT skills including word processing, spreadsheets, file management, and use of internet search engines.

Source: CBI/Universities UK (2009), Future Fit

The CBI's most recent education and skills survey⁷ shows that around a third of employers are very satisfied with the literacy and numeracy skills of their graduates – a further half are satisfied and only one in ten is dissatisfied (**Exhibit 3**). But a third are dissatisfied with the business and customer awareness demonstrated by graduate starters in their firms. Employer dissatisfaction with graduates' foreign language fluency is also high – two-fifths are not satisfied, according to CBI surveys.⁸

A lack of basic employability skills impacts on business performance and costs, as employers have to divert training investment away from developing specialist job-specific skills in order to offer remedial support for new recruits.

Comments from recent graduates suggest many feel their university could have done more to help them gain skills that would have prepared them better for employment.⁹ Current students feel they are missing out on opportunities to develop these skills, with the majority of their work focused on their degree subject (**Exhibit 4**).

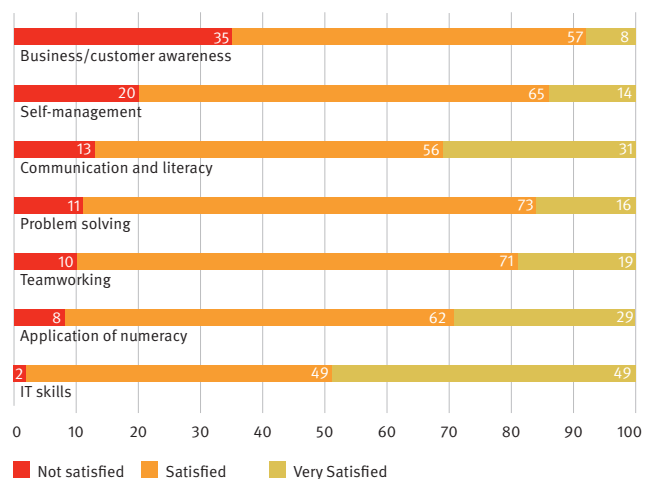
The recent CBI/UUK report, *Future fit*,¹⁰ shows that many universities are helping students to develop employability skills. But not every university has the same level of engagement with this agenda. A one-size-fits-all approach to addressing employability will not be effective, because different institutions and their students will have varying needs.

Employers report that those graduates who have had worthwhile experience of the world of work – through internships, work experience, sandwich years or part-time employment – have generally acquired a higher level of employability, and are able to apply themselves more quickly when they reach the workplace. Students themselves recognise the benefits – the majority of graduates who had completed work experience placements found them useful, especially those doing extended work placements.¹¹ At present, too few students can access high-quality workplace experience or are able to take advantage of sandwich courses and internship opportunities (**Exhibit 5** see page 14).

Increase the number and quality of STEM graduates

The UK has long-standing strengths in the business sectors which need scientific, technical, engineering and maths graduates. It has a greater proportion of value-added arising from knowledge intensive services than any other major OECD economy apart from the US, and it is among the best in the world in sectors as diverse as computer games development and low-carbon and environmental goods and services.¹² These sectors rely on graduate-level skills, particularly in STEM areas.

Exhibit 3 How employers rate the employability skills of graduate recruits (%)



Source: CBI/Nord Anglia education and skills survey 2009

Exhibit 4 Students and recent graduates have concerns about their employability skills

A new survey conducted by YouGov for the CBI found that recent graduates are not confident with their own employability skills. Nearly a third of graduates (31 per cent) are not confident that they have the numeracy skills needed in the workplace, and a quarter (25 per cent) believe their business and customer awareness could be improved.

Those currently in universities believe more needs to be done to help them acquire employability skills – over half (51 per cent) would like more opportunities to develop their business awareness and around a third (31 per cent) would like more opportunities to work on their numeracy.

Source: CBI/You Gov (2009)

“STEM skills are vital to our commercial success and are of great concern to us at QinetiQ because they underpin our ability to tackle some of the greatest global challenges we face. Both industry and government have key roles to play in inspiring our next generation of scientists and engineers.”

Graham Love, CEO, QinetiQ

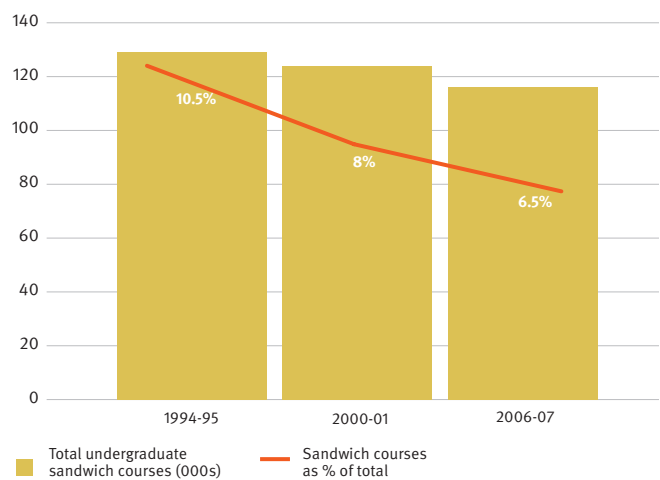
Business is looking for a range of STEM-qualified employees to fill a variety of roles. The most brilliant graduates will become future scientific leaders, driving cutting edge innovation, drawing on advanced academic knowledge and depth of experience. Graduates with good scientific or engineering literacy, developed at the best universities in the UK, are also needed; they will have had good workplace experience, along with excellent laboratory and technical skills developed as part of their degree. Trained and technically qualified people are the third key group – enthused about science and technology, with the techniques at their fingertips. Many of these people will have had a vocational route into STEM careers supported by their employers, and can undertake a range of highly skilled functions across their organisations.

Before the recession hit, a large proportion of firms reported severe STEM skills shortages. Two-thirds of businesses in science, hi-tech and IT sectors experienced difficulty recruiting graduates and postgraduates, and a large majority of jobs in these sectors require these specific skills (Exhibit 6). Around two-fifths of utilities firms reported difficulty recruiting technicians, and over a quarter of businesses in the manufacturing and energy and water sectors experienced difficulties in recruiting qualified apprentices. The recession may ease these difficulties in the short term. But the problem will return once recovery comes, unless greater efforts are made to increase the quality and quantity of employees with the skills required to build knowledge-intensive industries of the future.

Business is concerned that there has been a significant decline over the last decade in the proportion of young people studying these subjects (Exhibit 7). This is not just a UK problem, but the UK has suffered more than most, with OECD figures showing the UK fares worse than most competitor nations in the change in the percentage of first degree students in STEM subjects.¹³

The decline in the proportion of STEM graduates is not primarily the result of universities closing courses or of a lack of places.¹⁴ Instead the problem lies further down the education system. Too few school students are studying – or feel confident in studying – science and mathematics at A-level or Scottish Highers. And scientific potential at the age of 14 is not being fully realised. Just over 41 per cent of young people achieve at least a level six at Key Stage Three,

Exhibit 5 The proportion of students on sandwich courses has been in decline over recent years



Source: HESA

Exhibit 6 Employers expressing difficulty recruiting STEM-skilled employees (%)

	All respondents	Energy & water	Manufacturing	Science, hi-tech and IT
Difficulty recruiting at some level	66	92	80	77
Graduate & postgraduate	32	74	50	62
Experienced	21	42	32	21
Technician	16	47	32	17
Qualified apprentices	12	32	27	13

Source: CBI/Nord Anglia education and skills survey 2009 – percentage of employers in CBI annual survey reporting difficulty recruiting STEM skilled people

indicating they are capable of further study. But only a small minority go on to study GCSE triple science in England and Wales, which is the best preparation for A-level and further STEM study. Although all students study maths at GCSE level, maths at A-level accounts for just nine per cent of all entries in England and Wales.

While many businesses are worried about the quantity of STEM graduates, concerns about quality are also rising. In a recent CBI survey,¹⁵ around two-thirds of science, hi-tech and IT firms said that the content of STEM degrees was not relevant to their needs, with firms in construction, energy and water also reporting concern. Pharmaceutical firms report that some graduates lack basic mathematical capability, along with practical skills and the ability to apply scientific and mathematical knowledge.¹⁶

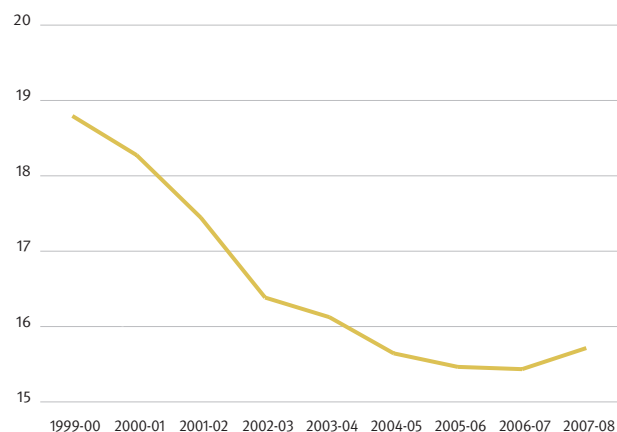
More business people are joining university governing boards,¹⁷ but there is a need for greater input from businesses into the content of degree courses to make sure they are relevant to employers' needs. Improved university-business interaction, at regional or sector level (eg through professional accreditation bodies), will be helpful.

Increase business-university collaboration on research and innovation

University-business partnerships are an important part of the innovation process. Engagement with academic partners can bring new perspectives to otherwise intractable problems and allow companies the space to explore options in a fresh way. Universities also benefit from research and innovation partnerships with business in more than just financial terms. Such links help to maintain research momentum and provide an opportunity to apply skills and knowledge to real world problems. They can also underpin and enrich teaching programmes, and bring access to the most modern equipment.

In addition to research – both curiosity-driven and user-focused – universities are a vital resource for a wide range of knowledge exchange activities with business, including consultancy, Knowledge Transfer Partnerships (KTPs), industrial doctorate programmes, and 'innovation voucher' schemes for small and medium-sized enterprises (SMEs).¹⁸ Many business-facing universities which conduct research of national as opposed to global importance are particularly active in developing knowledge exchange projects to support innovation by SMEs in the communities they serve.

Exhibit 7 STEM study in higher education has declined significantly over the past decade (%)



Source: HESA, provided by HEFCE – UK full time equivalent (FTE) students in STEM subjects as a proportion of all FTEs



Over the past decade, there has been great progress in business-university co-operation for research and knowledge exchange. But only 10 per cent of innovative enterprises in the UK cooperate with a university or another higher education institution – well below the figures for countries like Sweden, Finland or Denmark.

More should be done to break down remaining barriers. If innovative companies in the UK are driven to seek university partners abroad, other functions and well-paid jobs are liable to flow out of the country with them.

Universities provide high-quality training to business – this will grow in the future

Business invests £39bn a year¹⁹ on staff training in order to up-skill the current workforce but universities have only captured a small share of this market – just under £500m in 2006-07.²⁰

Universities can build on this activity and capture a greater share of the market for business training. New qualifications are helping – for example, there are now 87,000 students undertaking Foundation degrees developed and delivered in partnership with employers in England, Northern Ireland and Wales.²¹

In addition, universities are already market leaders in leadership and management training – two-thirds of the largest firms use universities to deliver at least some training at this level.²² Business schools have grown rapidly in the UK over the last 30 years and the sector has a strong reputation – 20 out of the top 50 ranked European business schools are based in this country.²³ The recent CBI/UUK report, *Stepping Higher*, highlights examples of successful partnerships in workforce training, and identifies what needs to be done to extend this good practice. Offering more flexible approaches to the delivery of workforce development programmes, exploring opportunities for modular courses which build up towards accredited programmes and making the accreditation process as simple as possible for employers and employees are important steps.



2

Now is a critical time to act

There are significant challenges ahead for universities, including:

- Pressure on public finances, which is likely to lead to funding cuts
- Increased competition for students, and for business investment in research
- Demographic change, which is having an impact on universities' traditional student base.

All threaten the UK's ability to meet the objectives set out by the Task Force. Lower public funding could undermine teaching and research quality, and the provision of expensive STEM courses. Increasing international competition could further weaken university finances, and encourage employers to seek graduate talent and research expertise overseas.

Business demands on universities are growing. But supply-side pressures may restrict universities' ability to meet these growing needs.

The poor state of public finances is certain to have an impact on HE funding. Universities are also facing growing competition from abroad for both research and students, as well as the need to adapt to changing demographics, with a smaller 18 to 20 year-old cohort expected over the next ten years.

Funding will come under increasing pressure

Universities are unlikely to escape from the significant cuts in government spending that seem inevitable given the size of the current fiscal deficit. This poses a real threat to the outcomes business needs from higher education.

“Now more than ever we need to take steps to ensure our university sector remains one of the best in the world. Businesses are operating in a highly competitive marketplace and need outstanding people if they are going to succeed. The world is not standing still, and we need to respond to a constantly changing environment.”

Paul Skinner, former Chairman, Rio Tinto

Although there is significant variation across institutions, UK universities as a whole are heavily reliant on public funding for both teaching and research activity, receiving around 60 per cent of their total income from the public purse. The majority of funds for teaching come from government via block grants with the remainder being funded by tuition fees paid by students. Government provides 68 per cent of funding for research with the balance coming from the private sector and other areas of the public sector (**Exhibit 8** see page 18).

Public funding for HE has grown in real terms by 24 per cent over the past decade, and university income from all sources has increased in real terms by 47 per cent. But rising costs of all kinds mean universities have very little financial headroom. A recent report from HEFCE's Financial Sustainability Strategy Group suggested that funding for teaching needed to increase between five to fifteen per cent to meet rising domestic and international expectations.²⁴ (**Exhibit 9** see page 19)

“Universities are aware that as a sector we are facing acute financial and demographic challenges, but also that with intense competition it is vital we maintain the quality of our student output. This cannot be achieved through the status quo – action is needed now.”

Glynis Breakwell, Vice-chancellor, University of Bath

Government is asking English universities to make efficiency savings of £180m in the period 2009 to 2011 – but these cuts may only be the start. The devolved administrations have yet to make similar requests, but there is likely to be further pressure on HE spending throughout the UK. Most universities have already begun budgeting for significant reductions in public funding.

International competition for students and contract research is intensifying

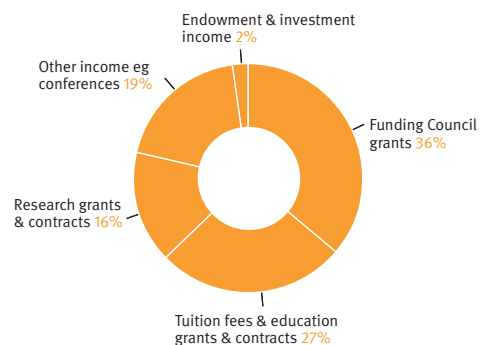
The UK has a strong record of attracting international (non-EU) students, and ranks second only to the US in its share of the international student market. The amount of income per student received is greater for international students compared to those from the UK and elsewhere in the EU because they pay full (uncapped) fees.

While the total number of international students continues to rise (contributing £1.7bn a year to university income), the UK’s share of the overall market is declining. Competition from countries with less mature HE sectors is increasing, and a growing number of European universities are teaching courses in English to compete with UK and US institutions (**Exhibit 11** see page 20).

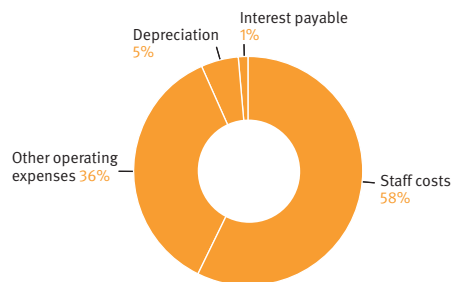
Competition is also increasing on the research side. There is anecdotal evidence that many companies see UK universities as offering less value for money than their international competitors. Some report that the level of their research-related involvement with UK universities has stagnated or declined in recent years, with costs as the prime reason. In part, this is because of increasing access to the research base in countries where costs are lower and quality is high and rising. But it is also the result of sharply increased costs at UK universities – for which the sometimes inflexible application of Full Economic Costing to pricing decisions may be partly to blame.²⁵ CBI members have been clear that they see the UK as the most expensive place in the world to fund a post-doctoral researcher.²⁶

Exhibit 8 Higher education income and expenditure

HE income (sources as % of total income)
Total income in 2007-08: £23,439,626



HE expenditure (uses as % of total expenditure)
Total expenditure in 2007-08: £22,884,979

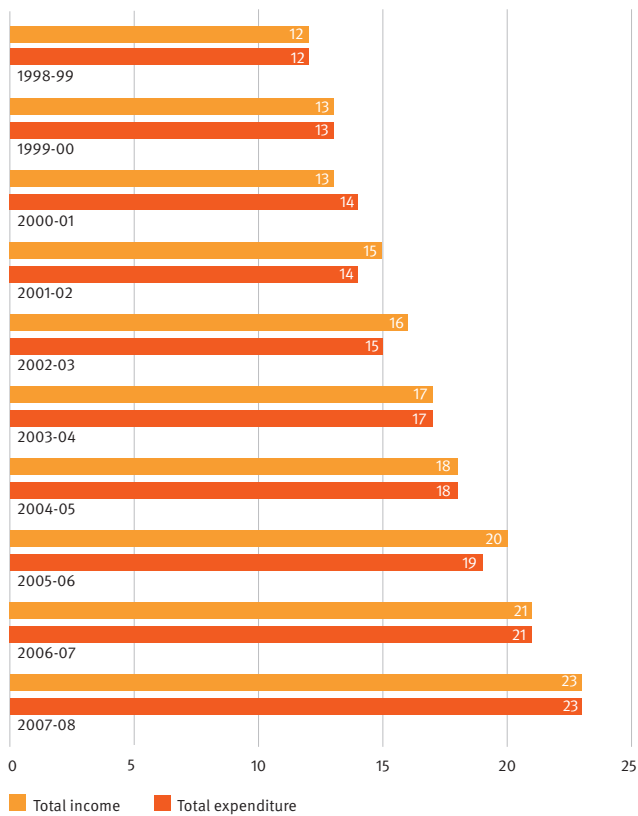


Source: HESA

“Thomson Reuters is a global business and it recruits the highest quality graduates from around the world, but we are seeing fewer suitable applicants from the UK. By developing language skills and awareness of cultural variations, UK graduates will be able to compete on an even playing field with those of Continental Europe and beyond, where this is increasingly the norm.”

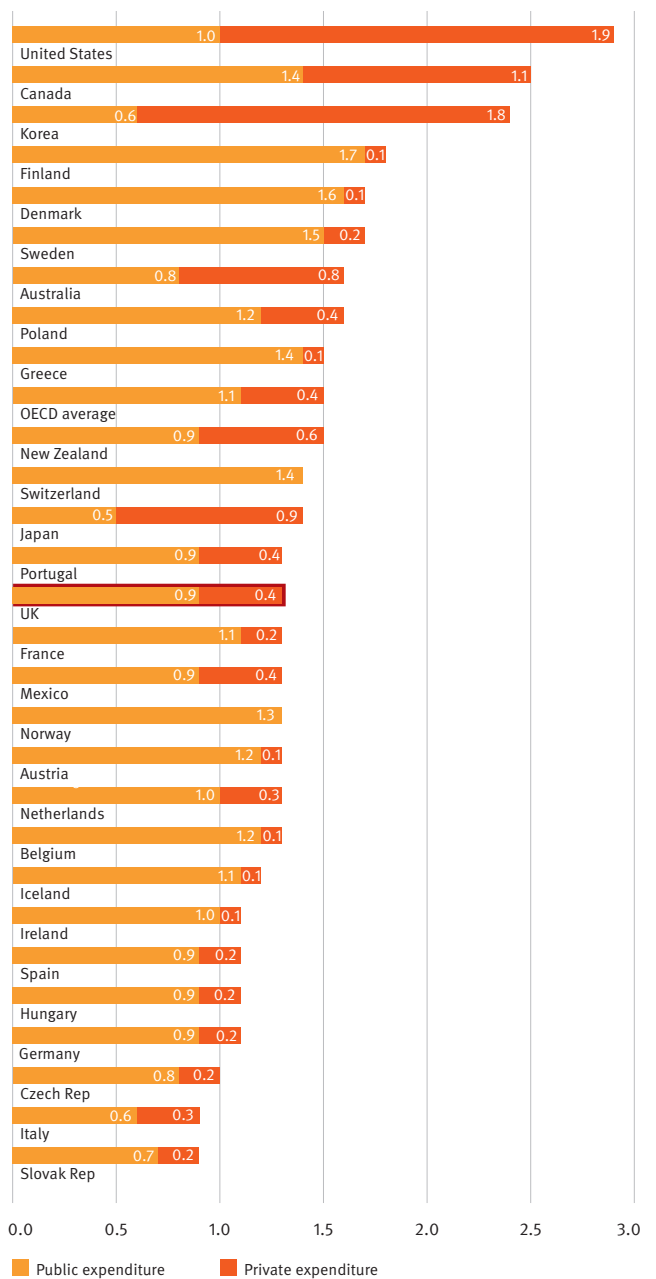
Susan Taylor Martin, MD UK and Ireland, Thomson Reuters

Exhibit 9 Higher education income has risen significantly over the last decade – but has been broadly matched by increasing costs (£bn)



Source: HESA

Exhibit 10 The UK is below the OECD average on higher education expenditure (% of GDP)



Source: OECD – spending on HE as a proportion of GDP, by source of funds

Demographic change and widening participation will require HE to change

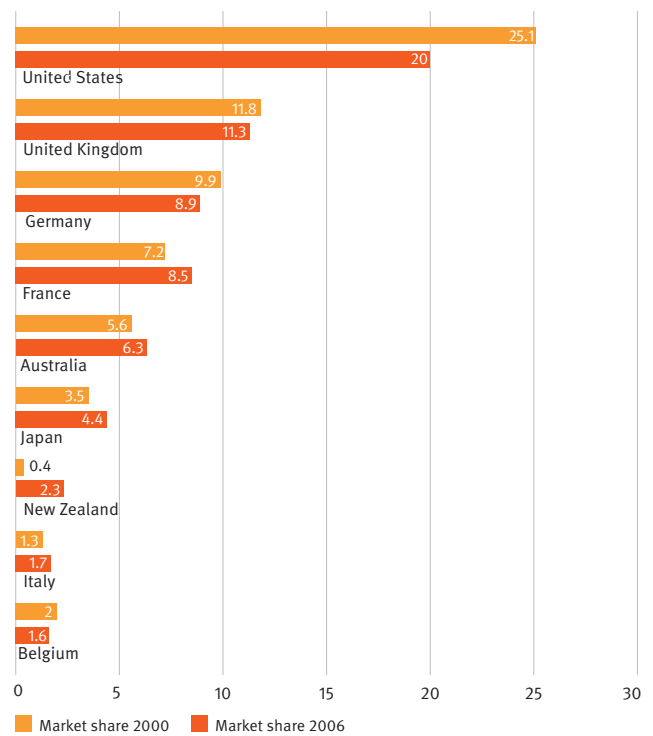
Young people (18-20 year olds) represent the majority (71 per cent) of entrants to full-time undergraduate programmes in HE, but demographic changes will influence the profile of university students in the future. Projections show a significant reduction in the 18-20 year old population in the UK between 2009 and 2020 followed by a recovery to 2006 levels by 2027.²⁷ The pattern is not consistent across the UK:

- In England, an expected 14 per cent decline in 18-20 year olds between 2009 and 2020 will be followed by recovery, leaving a modest increase for the period 2009-2020²⁷
- In Scotland the decline for the period 2009-2027 will be marked – 11 per cent
- Ireland will also see a significant decline in the 18-20 year old population of 11 per cent to 2027
- The decline in Wales will be slightly less, at nine per cent for the period 2009-2027.

Over the same period, the population of 18-20 year olds in the rest of the EU²⁸ is predicted to fall by 14 per cent. At present, home and EU students make up the majority of all enrolments, representing one of the most stable and reliable income streams for universities.

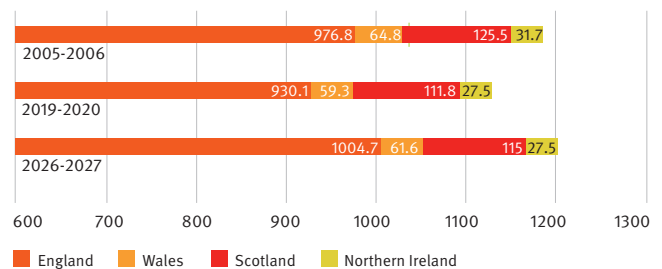
Declining student numbers will have a varied impact on universities. For example, for the small group of institutions which have less than 30 per cent full-time undergraduates in their student population, the impact is likely to be negligible. But for the majority, the demographic decline may have a more significant impact, perhaps requiring greater specialisation and collaboration. Demographic trends may also be offset by other developments. For example, increasing A-level attainment could have a positive impact on HE enrolments, as would improving participation from currently under-represented groups.

Exhibit 11 The UK has the second largest share of international students, but it is falling (%)



Source: OECD (2008) Education at a glance 2008

Exhibit 12 Universities will see a fall in the number of young students over the next ten years (000s)



Source: UUK – Student numbers (000s)

3

Why business must do more

Business will need to engage and invest more effectively with students and universities to achieve the objectives set out by the Task Force.

This report is a call to action.

Task Force members aim to be at the forefront, acting as champions in their own sector and the wider business community and also committing their own organisations to doing even more.

Stronger business engagement will be required to achieve the changes set out in this report. Task Force members are already working with universities as an important part of their business strategy. They recognise they can do even more, and have committed to a range of further, measurable activities.

In addition, the report sets out a range of commitments and best practice that all businesses should consider. The Task Force recognises the diversity of the business community, and that not all of these commitments will be appropriate for all firms. But together, they have the potential to transform the business relationship with higher education. In order to achieve these goals:

- The business case for taking action must be made clearer – the CBI and Task Force members will act as advocates for the advantages of working with universities and supporting students
- Effective brokerage services must be developed to improve links between businesses and universities, building on examples such as the Training Gateway and Interface in Scotland
- There must be greater co-ordination and potentially rationalisation of the large number of schemes to encourage business engagement with schools and universities in order that firms and students gain maximum value from their commitment.

Small and medium-sized enterprises will have less time and resources to dedicate to university engagement. But they could still realise benefits by focusing on a number of commitments. For example, they could:

- Offer more internship or placement opportunities, preferably for at least a six-month period to limit costs and maximise benefit to all parties
- Give students access to real-life projects or resources during their time in HE, perhaps as part of a dissertation or research project
- Provide opportunities for students to visit their organisation, and gain a better understanding of their business.

Some employers may not recruit many graduates and so may not have a commercial need to develop formal links with universities. But they could still benefit from offering internships, which will introduce young people to their business and could serve as a future recruitment tool.

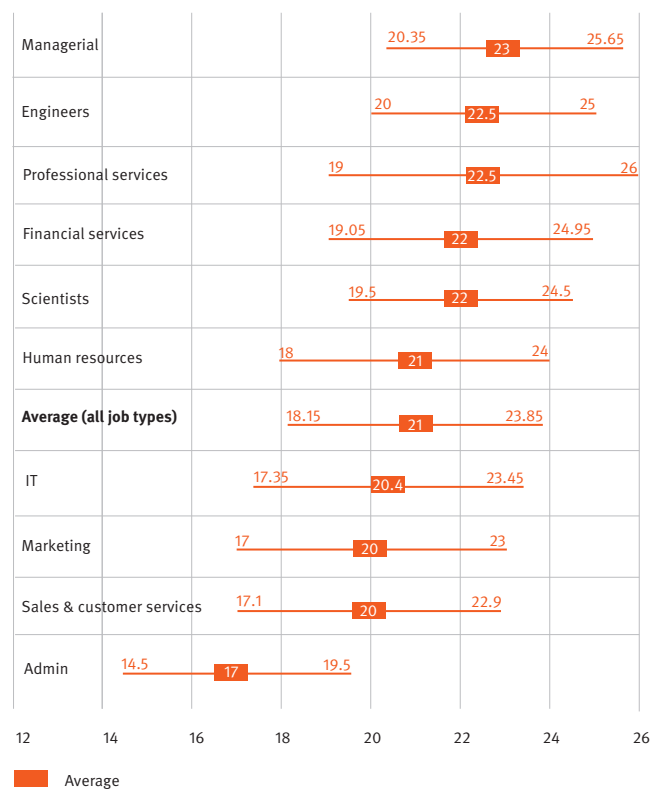
STEM – help raise the quality and quantity of graduates

Although the recession has undoubtedly had an impact, there is a strong demand from the business community for graduates and postgraduates with STEM skills, and this is expected to intensify in the future.

Business can make a difference by engaging with universities on curriculum content, helping inform students on their degree choices and providing greater financial support for students with STEM skills before and after graduation.

Employers are already active in promoting STEM skills, reflected in the salary premium offered to graduates in key groups (**Exhibit 13**).

Exhibit 13 Graduate jobs in STEM areas are among the highest paid



Source: CBI/Nord Anglia 2009 – Median starting salaries by job type (£000) with inter-quartile range

“A few years ago we saw a fall in the number of students reading science degrees – and as a company, AstraZeneca believed we had a responsibility to act. We introduced a bursary scheme for chemistry students which gave undergraduates a mixture of financial support and mentoring by AstraZeneca employees. The scheme has been a great success and is an example of what business and universities can do working together.”

Chris Brinsmead, Chairman, AstraZeneca Pharmaceuticals UK

For example, Nissan sponsors students studying STEM subjects and AstraZeneca provides bursaries for students studying chemistry. Centrica also supports its graduates by providing all of them with a sign-on bonus. Others are shaping course content – Microsoft works with universities to ensure that courses are based on up-to-date programmes and technologies (for instance, through the Microsoft IT Academy programme) and provides opportunities for students to take Microsoft professional qualifications at university.

In some sectors, specialist accredited degrees are an essential qualification for entry to a professional occupation. But it has been estimated that up to 40 per cent of all engineering degrees in the UK are not accredited by professional bodies in a way that would help ensure course content remains relevant to the needs of employers in particular industries.

Companies should work more closely with universities at a sector level. Sector Skills Councils could play a role here, with clusters of businesses and universities working together through the intermediary of an SSC where appropriate to support universities which provide graduates to those businesses. For example, Kingfisher works with its SSC (Skillsmart Retail) to help identify where its internal training needs can be met by programmes which lead to recognised qualifications, including degree level qualifications.

SSC engagement will help business influence course content, and increase provision of sandwich places and student sponsorship. e-skills UK (SSC for the IT and Telecoms industry) worked with a number of employers to develop the blueprint for a degree which met industry needs. In collaboration with 56 employers, thirteen universities are now offering the IT Management for Business degree. Over 580 students are on the programme with application rates growing significantly: 63 per cent of the first cohort of graduates achieved first class honours, and female participation is higher than average.

Commitments	Business rationale
Commitment one Sponsor students studying business relevant subjects (such as STEM)	To encourage young people to study the subjects that business values.
Commitment two Provide financial support to new graduate recruits (through sign-on bonuses to reduce student loans, for example)	Young people should not be deterred from acquiring a degree by the prospect of accumulating debt. Sign-on bonuses would help with finances and send a signal to graduates that business values their abilities.
Commitment three Commit time and resources to participating in degree programme advisory boards	Greater business involvement in programme advisory boards will help improve the business relevance of courses, and build on the successful example of Foundation degrees where businesses and universities have worked together to design degree courses.

Employability skills – providing work-based experience to improve the quality of graduates

Most jobs which require degree-level skills are open to students of all disciplines. For many employers, the prime focus when recruiting graduates is the quality of their employability skills. So it is not surprising that a large proportion of CBI members say that universities should focus, as a priority, on helping to develop these skills within the student population.²⁹

Business plays an important role in providing students with the opportunity to develop these skills. Over three-quarters of those companies which employ graduates offer some paid internships, and businesses provide 100,000 sandwich placements to undergraduates. Task Force members are active in this area: Centrica, AstraZeneca, Balfour Beatty and KPMG all offer internships and summer placement programmes; and IMES Group and McDonald’s provide paid sandwich placements each year.



“It’s vital that graduates can show potential employers that they have the skills which business looks for – by having worked in a team for a university project or giving presentations. Universities have got to give their students the best possible start by embedding these skills within their courses. And business cannot sit on its hands – we must do our bit by providing students with opportunities to experience the world of work.”

Steve Easterbrook, President and CEO, McDonald’s UK

But more can be done. Employers can provide more work experience opportunities to students before they make degree choices and start university. Undergraduates should be offered more internships and placements to accustom young people to the world of work.

The business community also needs to consider the case for special measures to support those students who will be graduating this year and next. They will have paid fees of £3,000 and more for each year of their higher education, and will leave university to face some of the toughest labour market conditions in a generation. Two-fifths of CBI members have frozen graduate recruitment completely, and a further tenth are recruiting fewer graduates than in 2008.³⁰

Commitments	Business rationale
<p>Commitment four Provide work experience opportunities for students at the pre-university stage, as well as during and after university.</p>	Offering placements through organisations such as The Year in Industry would develop young people’s employability skills at an early stage and give them a better understanding of the world of work.
<p>Commitment five Offer more internship or placement opportunities</p>	Short-term internships give young people opportunities to shadow staff and gain some knowledge of the workplace. Longer-term sandwich placements – of six months to a year – allow students to work on real projects and can be a useful recruitment tool.
<p>Commitment six Give students access to real-life projects or resources during their time in HE</p>	This will build the development of practical skills and is often a feature of MBA programmes and should be extended to more undergraduate degrees. Such partnerships will help students relate their knowledge to a work-based environment.
<p>Commitment seven Offer students jobs at the end of their penultimate year of study</p>	Graduates would enter employment more ‘job ready’ and could receive a partial salary in their final year of study to support their finances.

To support graduates in the short term and to help them be as best placed as possible for finding employment in the future, businesses should consider:

- Providing internship opportunities for students post-graduation, which would help young people gain work experience and allow employers to access talented people in the short term
- Offering students deferred jobs for 12 months’ time, if they are temporarily reducing graduate recruitment this year
- Providing some financial support to students to undertake postgraduate study, rather than to enter the labour market immediately.

Increase the market for university provided workforce training

Business has a growing demand for highly-skilled employees, and practical leadership and management skills need to be improved across the workforce. Universities can help meet these needs, but businesses need to do a better job of explaining their requirements and what they are willing to invest in. Companies must also recognise that such partnerships require a long-term commitment in terms of resources, if universities are to make significant investment in developing bespoke training courses.

As an example of what can be done, Network Rail is supporting employees to gain degree-level qualifications through a partnership with Sheffield Hallam University. Management started the programme by developing a Foundation degree to meet a widespread demand for a programme that would produce graduates with industry-relevant skills.

Commitments	Business rationale
<p>Commitment eight Business to develop relationships with universities and explain what type of skills they need to develop for their workforce</p>	<p>Universities can be important providers of workforce training. The CBI-UUK Stepping Higher report on developing workforce provision showed that while universities had to be more responsive to employers’ requirements, business also needed to take a lead in developing these relationships.</p>

“By working with universities businesses can develop staff with the applied skills that are immediately useful in the workplace. At Nissan, we are working with the University of Sunderland to support students taking a two-year Masters degree – 90% of which involves an on-the-job project. We firmly believe the programme will give students the ‘real life’ skills and experiences from which they will benefit and which we need as a company.”

Trevor Mann, Senior vice president, Nissan

To strengthen research and innovation

In recent years there has been significant progress in business-university co-operation on research and innovation, illustrated by the growth in the number of businesses now working with universities. The value of contract research with universities in 2007-08 was £368m – an increase of 12 per cent on the previous year. In addition, businesses engage in collaborative research programmes alongside a public funder, such as one of the seven Research Councils. In 2007-08, the overall value of collaborative research programmes was £697m.

QinetiQ, for example, has formal partnership programmes with 13 universities, and QinetiQ staff hold around 30 visiting professorships in 20 universities.

Business, government and the research councils can do more to break down the remaining barriers, and work with public research funders to shape projects which meet its needs.

“With climate change high on the public agenda, Shell has teamed up with researchers at Imperial College on the ‘Grand challenge’ project. This joint research is focused on the cleaner production of fossil fuels and utilises the science and engineering expertise at Imperial’s Energy Futures Lab. Research partnerships of this kind are crucial to developing innovative solutions to the challenges we face in the energy sector.”

James Smith, Chairman, Shell UK

An excellent example of partnership between business and universities in research and training is the Engineering Doctorate scheme, which provides a four-year postgraduate award for research engineers who want a combined technical and managerial career in industry. Postgraduates spend 75 per cent of their four-year course in a company working on a research project of direct relevance to the business, with guidance from an industrial supervisor. They also study a range of technical and management courses provided by their university. The scheme prepares research engineers for leadership roles in engineering, as well as making them competent doctorate-level researchers. It is also a very effective mechanism for enhancing collaboration more widely, enabling academic centres of excellence to relate directly to the products and markets that business must develop to stay competitive. The model has been taken one step further with the Engineering and Physical Sciences Research Council’s decision in 2008 to invest £250m in 44 centres for doctoral training across a wider range of academic disciplines and business sectors.

Companies should also work with universities to develop models of good practice in encouraging movement between the two sectors. Pensions, insurance and career progression are among the more obvious barriers to this kind of exchange. Businesses could also make much greater use of university equipment and facilities (and vice versa) and help universities to make these opportunities more widely known.

Better brokerage will facilitate more links and enable others to learn from successful collaborations. This could be achieved through an online portal, or through a scheme like Interface in Scotland.³¹ Many productive business-academic partnerships arise from – and so depend on – chance contacts. Both sides would benefit from improved access to information about sources of academic expertise, and of an institution’s ability to respond to business requirements, making use of good effective working examples where businesses have gained real benefits. This would be of particular value to SMEs with limited resources to connect with the right people in universities, and it could also help companies with quite good links to some universities, but limited knowledge of valuable expertise in others.

Commitments	Business rationale
Commitment nine Working with universities as a core part of their innovation activity	Evidence strongly suggests that the most innovative companies find their work with universities helps them to boost their competitive advantage, but the UK continues to lag behind some of its European neighbours in the overall proportion of businesses engaged in innovation-related links with universities.
Commitment 10 Working with public funders to plan research projects that meet business needs	Collaborating with research funders will help in planning projects which better meet business needs, and help equip young researchers with skills which business will value.

Collective action from the business community will make a difference

A number of successful schemes exist to help businesses engage with schools and universities. All those highlighted in the appendix can boast strong industry support, and the Task Force encourages other businesses to get involved where they can (**see appendix**).

To help sustain the momentum, the CBI will monitor the progress of the business community as a whole and Task Force member companies on the wider business commitments set out in this report.

Next year, the CBI will use its higher education website to report on the progress made, and it will also publicise effective schemes to facilitate business-education links.

In addition, the CBI will present the wider business commitments to its regional and national councils, and will seek to sign up more employers. It will also measure activity against each of the areas of engagement suggested in the business commitments through its annual education and skills survey.

Task Force commitments

AstraZeneca

Existing work with higher education

- Provides bursaries for students studying chemistry at some UK universities
- Offers sandwich placements for undergraduate students, providing access to real life projects
- Established extensive research collaborations with a range of UK universities
- Has links with universities to articulate business needs and input to curriculum, including advisory boards for degree programmes and staff acting as visiting professors
- Participates on a range of advisory boards to research funders
- Currently involved with Office of Life Sciences on work to support the development of UK biosciences
- Participates in Research Council Industrial CASE schemes and Knowledge Transfer activities
- In collaboration with the Association of the British Pharmaceutical Industry, published a report setting out the skills needs for the industry.

Future commitments

- **Ensure the current and future needs for their sector in the UK are articulated clearly and work with government and other stakeholders to ensure universities are aware of those needs and of any issues, enabling them to align courses with business needs**
- **Work with the ABPI and other bodies, to ensure students can easily access careers information and opportunities in their sector, as well as within AstraZeneca**
- **Continue to progress interchange programmes between industry and academia in order to foster a vibrant life science sector in the UK, such as science collaborations, student placements, dual appointments for staff and Knowledge Transfer Networks.**

Centrica

Existing work with higher education

- Provides all graduates with sign-on bonuses
- Offers placements each year through Year in Industry Scheme
- Runs award-winning summer placement programme offering internships to 55 undergraduates per year
- Key Centrica executives are aligned with target universities to improve engagement.

Future commitments

- **Increase sign-on bonuses in line with any rise in tuition fees**
- **Expand summer placement/internship programmes to over 70 places in 2010**
- **Offer sponsorship to 10 students – particularly in engineering disciplines**
- **Identify and partner with two universities to sponsor research projects, focusing on nuclear and the environment.**

Balfour Beatty

Existing work with higher education

- Provides bursaries to students on, principally, engineering and construction-related degree courses, including the Institution of Civil Engineers QUEST, the Construction Skills INSPIRE schemes and sponsor courses at Loughborough University
- Provides year out and six month placements to students on degree courses
- Provides summer vacation placements to students on degree courses
- Provides sign-on bonuses of £1,000-£1,500
- Developed a course for building services, engineering and commercial trainees with Liverpool College and Liverpool John Moores University
- Developed a new Postgraduate Diploma in Construction Management with Salford University which 10 staff started in 2008
- Sits on the Steering Group of the Foundation Degree in Railway Engineering at Sheffield Hallam University and support students on the course
- Uses postgraduate diplomas in commercial management/ quantity surveying to ‘convert’ non-cognate graduates to these disciplines
- Participates on a range of degree and faculty advisory boards, plus provide an industrial external examiner to civil engineering programmes at Portsmouth University
- Provides lectures and project support at a number of universities.

Future commitments

- **Offer over 100 internships/summer placements in 2010**
- **Extend collaboration with universities on workforce development (eg. part-time Building Services degree with Liverpool John Moores, PG Diploma in Construction Management with Salford, Northumbria’s input to and accreditation of in-house graduate programmes)**
- **Encourage and support more managers in establishing university links and participating in course advisory boards**
- **Allocate managers/recent graduates to maintain links with and support sponsored students (in addition to company financial support) during their academic years to better prepare them for working life.**
- **Become an active participant in the STEM Ambassadors scheme.**

Task Force commitments – continued

Imes Group

Existing work with higher education

- Offers paid sandwich placements to 2-3 MSc students per year
- Company CEO is Chair of the Board of Governors at Robert Gordon University
- Is engaged with universities on six successful KTPs.

Future commitments

- **Offer sign-on bonuses of a minimum value of £2,000 to graduate recruits with relevant STEM qualifications. This will be advertised through 2009 for recruitment in 2010**
- **Offer MSc placements and internships to undergraduates. The number offered will exceed the four offered in 2009**
- **Sponsor a project prize for the best engineering project at Robert Gordon University**
- **Have two fully funded research and development projects in partnership with universities in place by 2010.**

KPMG

Existing work with higher education

- Provides work experience opportunities for students at the pre university stage on a 6-month Gap Year Programme
- Offers one year business placement scheme, aimed at students on a four year sandwich course. This programme enables students to join the firm and start studying ACA modules, but they then return to university and rejoin KPMG at the end of their studies
- To support graduate recruits with their immediate costs and post-education debt, offers an interest-free loan of up to £7,000.

Future commitments

- **Set up a programme for first year students with the aim of providing them with business understanding and commercial experience. A pilot programme is targeted to run in 2010 for 20 students**
- **Run a Vacation Programme for second year students on a paid basis during summer vacation, providing opportunities for 100 students.**

Network Rail

Existing work with higher education

- Provides all graduates with a welcome bonus worth £3,000
- Offers a £1,000 premium for engineers who have an MSc
- Offers targeted placements through schemes including the Year in Industry initiative and the Institution of Civil Engineers QUEST scheme
- Provides a fully funded MSc in Project Management in partnership with University College London and the University of Warwick
- Partner with the University of Warwick to provide academic input and teaching on their accredited Business Leaders and Senior Leaders programmes
- Qualified to award its own qualifications, achieving awarding body status in 2008
- A partner with the Higher Education Policy Institute to have a voice in HE policy initiatives.

Future commitments

- **Double the total number of graduate vacancies in 2010 by aiming to recruit 150 graduates at bachelor degree level, up to 80 at Masters level and 25 at Foundation degree level**
- **Offer up to 40 graduate placements this autumn**
- **Award own qualifications in track engineering**
- **Look into developing an early engagement strategy to encourage young people to consider a career with Network Rail, with nationwide coverage targeting 14 – 18 year olds.**

Kingfisher

Existing work with higher education

- Works with SSC to map training needs to degree-level qualifications.

Future commitments

- **Develop current internship programme for undergraduates into a more formal recruitment programme for students upon graduation with a chance to join a new management training scheme, beginning in Autumn 2010**
- **Continue to strengthen links with local universities to build an understanding of business needs and how the curriculum can support them.**

Nissan

Existing work with higher education

- Sponsors students studying STEM subjects
- Gives students access to real life projects and resources
- Offers internship/placement opportunities, including for pre-university students
- Offers students jobs at the end of their penultimate year of study following placement
- Sits on board to support curriculum development for Foundation degrees/degrees; seconds staff to deliver relevant parts of Foundation degrees/degrees; and support staff on an 80:20 (company pays 80%) to take Foundation degrees through to MBAs
- Uses local universities for research work and supports doctoral research.

Future commitments

- **Increase the number of students on its Sunderland campus project to support graduates taking work-based Masters courses to take 15 graduates in 2009 and a further 15 in 2010**
- **Run an annual university engineering summit where 250 second year engineering students visit technical centre facilities in Cranfield**
- **Run an annual school engineering summit where 4,500 11-14 year olds visit NMUK facilities to encourage take up of STEM subjects.**

Microsoft

Existing work with higher education

- Works with universities to ensure that courses use up-to-date programmes and technologies, and provide opportunities for students to take Microsoft professional qualifications
- Offers 100 internships to sandwich course undergraduates and a similar number of postgraduate research internships
- Partnered with other employers in sector to design and develop Information Technology Management for Business (ITMB) degree through e-skills UK, and supports implementation of course
- Developed strong links with major research universities, and have own research centre based in Cambridge
- Is a corporate partner in the STEM University Enterprise Network.

Future commitments

- **Offer 100 graduate internships in 2009/10**
- **Introduce sign-on bonus style scheme to support graduate recruits to pay off tuition fees.**

McDonald's

Existing work with higher education

- Sponsors employees to take part-time university courses related to their current or prospective job role
- Provides work experience for pre-university students
- Offers 15-20 industrial placements every year
- CEO is a visiting Fellow at Oxford University, lecturing on Corporate Reputation. SVP, Chief People Officer is a visiting professor at MMU, lecturing in HR.

Future commitments

- **Offer 50 graduate positions on our management training programme in 2010**
- **Work with a leading university and the charity 'Higher Education at Work' to develop a Foundation degree programme in 2010 with an annual intake of 50 employees per year**
- **Give all students access to real life resources during their time in HE to support their dissertation/research through a dedicated section of mcdonalds.co.uk**
- **Offer 20 work experience placements in 2010 for pre-university students**
- **Offer 20 industrial placements (effectively one year internships) in 2010**
- **Increase support for HE through business related presentations and restaurant visits via the Brand Ambassador network.**

Task Force commitments – continued

QinetiQ

Existing work with higher education

- Involved in the Year in Industry scheme
- Provides bursaries to some of these students
- Participates in Research Council Industrial CASE awards at a number of universities
- Has formal partnerships with 12 universities for research collaboration
- Staff are visiting professors at several universities
- Henley Business School delivers their graduate development programme as well as other learning & development programmes across the company
- Sponsors employees on postgraduate courses
- Strong participant in the STEM Ambassadors Programme
- Company CEO on board of SEMTA and STEMNET.

Future commitments

- **Continue commitment to STEM outreach programme, to increase to 200 the cohort of active STEM ambassadors working with schools and national STEM educational projects**
- **Expand internship programme by 2010 to offer a minimum of 50 students each year work experience, Year in Industry or sponsorship opportunities**
- **Utilise recent graduate recruits to promote STEM careers at their former universities**
- **Maintain annual recruitment of engineering and science-based graduates at circa 100**
- **Support all graduate recruits in their professional development to achieve Chartered status.**

Shell UK

Existing work with higher education

- Has research links with a number of universities – Oxford and Cambridge (on bio-energy, sustainability and climate change), Aberdeen (on a variety of oil and gas technologies), Imperial College (on carbon dioxide mitigation), and Manchester & Exeter (on bio-energy)
- Runs ‘Campus Ambassador Schemes’ with key universities where a team of employees led by a senior executive maintain close contacts with students and academics
- Participates in the Year in Industry scheme
- Runs a summer internship programme for undergraduates
- Communicates its criteria for recruitment assessment to university staff and students – ‘CAR: Capacity, Achievement and Relationships’
- Is a member of the Council for Industry and HE
- Supports the Royal Academy of Engineering in work to increase the quality and quantity of STEM-skilled graduates.

Future commitments

- **Offer a programme of internships and similar work experience programmes for undergraduates to deliver 50+ placements in the UK (ongoing through 2009)**
- **Continue to enhance efforts to demonstrate to a diverse range of candidates that Shell offers great careers (ongoing through 2009)**
- **Maintain graduate recruitment activity through the downturn by hiring 120 graduates from UK universities by end 2009.**

Thomson Reuters

Existing work with higher education

- Operates a global graduate programme with journalism, technology and business streams
- Offers internships of between three months and a year
- Has a significant university engagement programme providing the use of Thomson Reuters products and serving across the research and teaching department in key institutions.

Future commitments

- **Sign up to the Graduate Talent Pool initiative and expand the number of internships offered to over 50 for 2009-10**
- **Extend collaboration with University College London on financial computing – senior managers will act as supervisors for PhD students working on real business projects; set-up of a broader PhD research centre**
- **As a Community of European Management Schools corporate partner, sponsor a project for students studying for a Masters in International Management**
- **Participate in degree programme advisory boards, particularly to partner with universities around preparing undergraduates for operating in a global marketplace.**

4

Delivering business outcomes in tough financial times

The Task Force recognises that achieving its desired outcomes will be expensive. The priority must be to maintain investment in high-quality teaching and research during a period of public spending cuts. To make this possible, the government should reconsider its current approach to financing student support. The Task Force believes that significant savings could be made by removing the full interest rate subsidy that graduates receive on their student loans and by targeting maintenance grants on those who need them most. Given the constraints on public funding, it is inevitable that the cap on tuition fees will rise. Universities, with the support where appropriate of business, should provide the extra bursaries that will be needed to ensure that higher education remains open to all.

The pressure on public finances means that universities face tough times ahead, and this will affect their ability to address the business challenges set out in this report. Difficult choices lie ahead.

Business as usual is not an option

The Task Force has considered and rejected three options:

- **Cut funding for research.** This would have a serious impact on the ability of the UK's leading research-intensive universities to maintain the quality and quantity of their world-renowned research. The impact on the less research-intensive universities would also be serious, since they tend to leverage their more modest resources to good effect with SMEs and local businesses.



- Reduce teaching funding per head.** UK universities have done well to deliver quality teaching with lower funding (as a proportion of GDP) than many other countries. Cuts in the funding for teaching would have an adverse impact on quality as staff-student ratios fell, and the higher education infrastructure would deteriorate. Provision of expensive STEM subjects could suffer and the employability agenda might weaken. The image of UK universities, which is very attractive to international students, would be damaged (**Exhibit 14**).
- Reduce student numbers.** Participation rates in the UK are lower than in other industrialised countries and most new jobs over the last decade have gone to those with graduate skills. The government's ambition is to be in the world's top eight for high-level skills 2020 – the UK currently stands 12th, and on current trends will be 10th by 2020. Many countries are improving at a faster rate (**Exhibit 15**).

The Task Force would oppose a move in any of these directions. Instead, it believes that savings could be made by reforms in the approach to student funding and the level of private contributions. The rationale would be to use any savings to support teaching and research in the face of public funding cuts.

Reform of the student support system will deliver significant savings without a severe impact on access to university

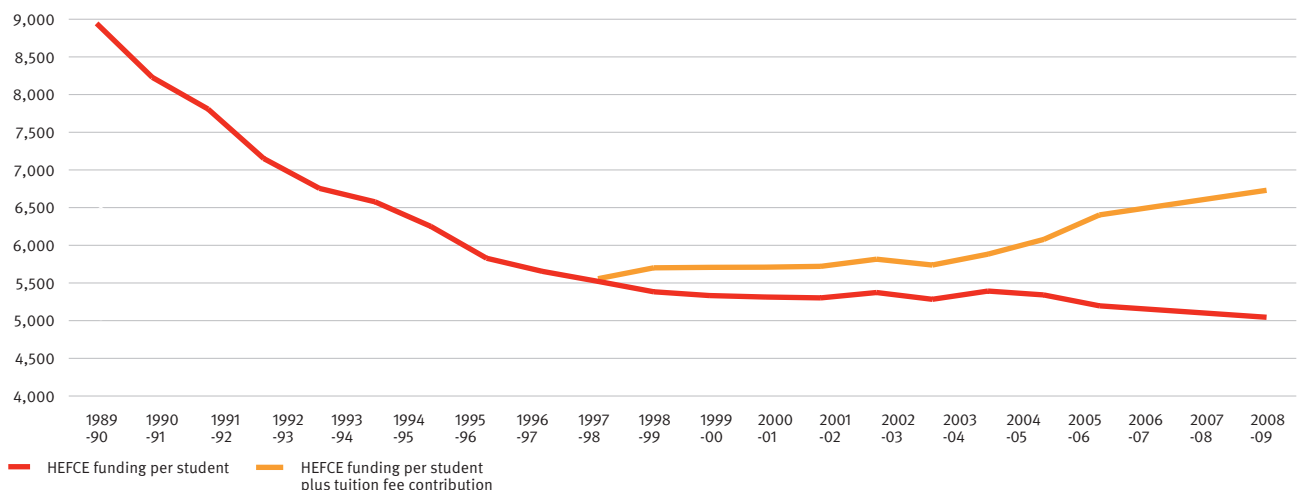
Students are eligible for subsidised loans and grants, dependent upon their income (**Exhibit 16**).

The total cost of student support to the government is substantial – estimated at around 25 per cent of all public funding flowing to HE. This level of expenditure puts the UK on a par with the most generous student support arrangements in the world.³³ Desirable though this may be, financial pressures mean that reforming the current support arrangements has become necessary. At a time when public resources are stretched, it would appear sensible to target support on those students that need it most.

Remove the interest rate subsidy – government to lend at its own cost of borrowing

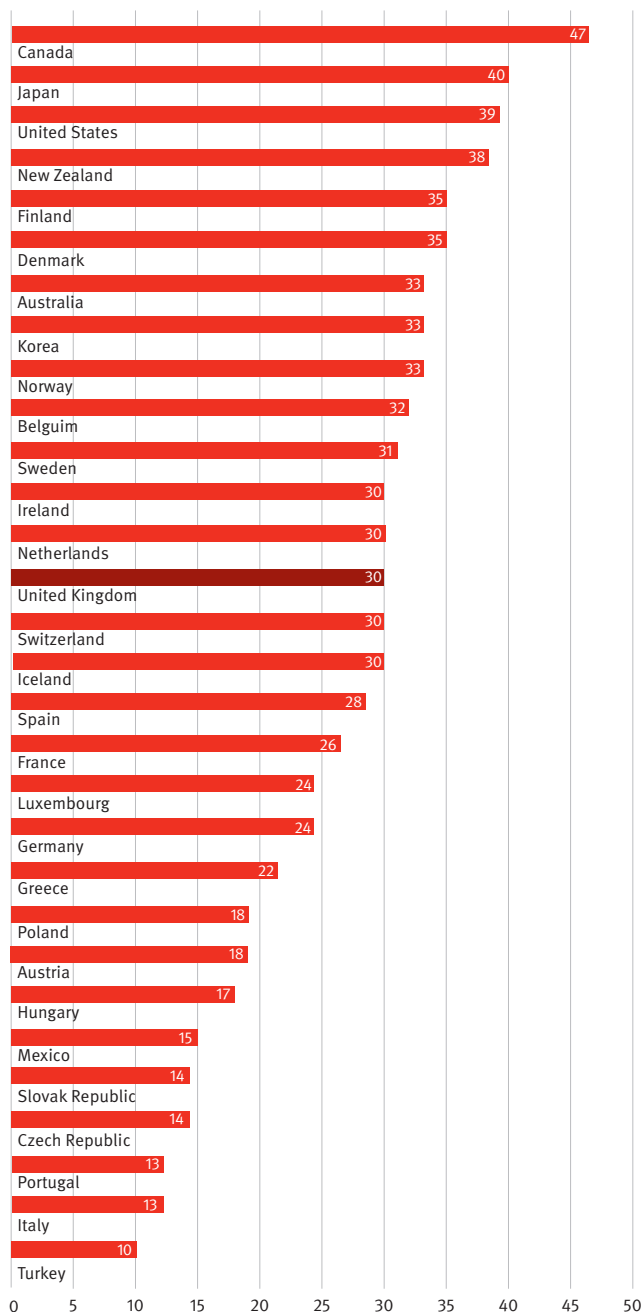
Offering tuition and maintenance fee loans at a zero real rate of interest is expensive – £1.4bn a year and is continuing to rise. Any increase in tuition fees – and therefore loans under current arrangements – would significantly increase the cost to the government. It is estimated that every pound loaned costs the Treasury around 33p, as a result of the interest rate subsidy and students defaulting on loans.³⁴ Simply raising tuition fees would benefit universities at the expense of the taxpayer and would not be feasible without reform.

Exhibit 14 Funding per student in England has stabilised since 1997 – tuition fees are now providing vital income (£s)



Source: HEFCE – real terms (2006-07 = 100)

Exhibit 15 The proportion of the total workforce with a graduate-level qualification (%)



Source: OECD Education at a Glance 2008 – percentage of population aged 25 – 64 that has attained tertiary education

Exhibit 16 Student support arrangements in England (2009)

Loans to cover tuition fees – all students, regardless of household income, are eligible.

Loans to cover maintenance costs – means-tested loans to cover living expenses up to a maximum of £4,625 a year (£6,475 in London). Around 75 per cent of the maximum maintenance loan is not means-tested and can be accessed by all students.

Repayments of loans begin when graduates earn over £15,000 a year, at a rate of nine per cent of earnings above this limit. Students are charged a zero real rate of interest on both types of loan and unpaid loans are written off after 25 years. According to government estimates, the average time to repay a student loan for a student currently in HE is 11 years for men, slightly longer for women.

The cost of providing tuition fee and maintenance loans on these terms is likely to exceed £1.4bn a year.

Means-tested maintenance grants – students with household income of less than £50,020 are eligible for at least a partial grant. Households with income of less than £25,000 receive the full grant of £2,835 a year (which will rise to £2,906 for 2009-10 entrants) – all grants are non-repayable at a current cost of £930m a year.

Bursaries – institutions are also required to provide minimum guaranteed bursaries to low-income students. It is estimated that a total of £100m was spent by universities in 2006-07, although the variation between institutions is significant.³²

Removing the interest rate subsidy post-graduation would be unlikely to affect the number of student enrolments.³⁵ But it would reduce costs to the taxpayer in the long term – saving the £1.4bn a year – and limit the extra burden that would otherwise result from an increase in tuition fees.

Recommendation one

Government needs to provide tuition fee loans at its own cost of borrowing and remove the interest rate subsidy on all loans. An interest rate which is efficient and equitable is broadly equal to government's cost of borrowing. This could deliver up to an estimated £1.4bn in savings but would be phased in after a three-year period to ensure that current students are unaffected and interest is not payable until after graduation.

Recommendation two

As a measure to encourage participation, government should consider targeting interest rate subsidies to those most in need.

Recommendation three

Government must ensure that savings achieved through reforming student support are recycled back into the HE sector to maintain teaching and research quality.

Focus maintenance grants on those who need it most

Means-tested maintenance grants – aimed at helping students with accommodation and other living costs – are available for full-time higher education students in the UK. These grants do not have to be repaid and are a direct cost to the government of approximately £930m.³⁶

The UK is more generous than most other OECD countries (**Exhibit 17**). And in recent years, the government has increased its means-tested support for students, driven by its ambition to widen participation and reach the target of 50 per cent of young people going to university.

The household income thresholds for grants to English students were increased in 2007-08. The upper limit of family income to receive a partial grant was increased from £38,000 to £60,000 a year and the threshold to receive a full grant was increased from £17,910 to £25,000. The cost to the government of these changes was higher than expected, leading to an overspend of £200m. The upper limit of family income was consequently revised to £50,020.

There is no strong evidence to suggest that a support system on this scale is necessary to promote wider participation. Research from the Institute of Fiscal Studies³⁷ suggests the main barrier to participation is attainment prior to university, and student applications did not increase as a result of the rise in income thresholds implemented in 2007-08. It is unlikely that revising the thresholds down would have an adverse impact on applications.

With median earnings now standing at £21,000³⁸ and at a time of financial stringency, it is appropriate for resource to be focused on those most in need. The government should reverse the measures taken in 2007-08 which were implemented during a very different economic climate, and return to the 2006-07 income thresholds.

Recommendation four

Government needs to refocus student support through maintenance grants to ensure that subsidies are concentrated on those most in need. The tapering of income thresholds should be sharpened, so that households with income above the median receive less support. The income thresholds should be revised downwards, reversing the significant increase implemented in 2007-08.

Given the constraints on public sector finances, a rise in the cap on tuition fees is inevitable

The introduction of variable fees has brought in significant and much-needed additional income to universities, halting the long-term decline in funding per head to the benefit of teaching and research quality. This has not, as was feared by some, reduced the participation of low-income groups, but has provided additional income of over £2.3bn for British universities, equivalent to more than 10 per cent of their total funding.

Students should make a contribution to the cost of their studies since they are the main beneficiaries. A graduate with a first degree will earn between 20 and 25 per cent more than someone with two or more A-levels.³⁹ While the return can vary significantly – depending on the subject studied and level of qualification attained – the average value of the graduate premium is approximately £160,000 over a lifetime. Full-time undergraduate students in England will pay £3,225 a year from 2009-10 for this premium and receive significant support from the state.

As identified by the Panel on Fair Access to the Professions, there remains an overwhelmingly strong financial case for people to enter higher education.⁴⁰ The Task Force supports the Panel's call for

better information and support to be provided to prospective students and their families to address fears about accumulating debt during HE study. The Panel also identified a range of other steps which must be supported to widen participation in higher education – partnerships between local universities, schools, colleges and businesses are an effective mechanism to raise aspiration and access.

The government is about to establish an independent review of tuition fees, to be completed later next year. The stark choice it will face lies between finding new money to put into the system, or seeing the number of students decline. At this stage, therefore, an increase in fees appears inevitable. It will be up to the universities, with the support where appropriate of business, to provide the extra bursaries that will be needed to ensure that higher education remains open to all. The next government needs to address this issue head-on in order to maintain the quality of the UK's HE sector.

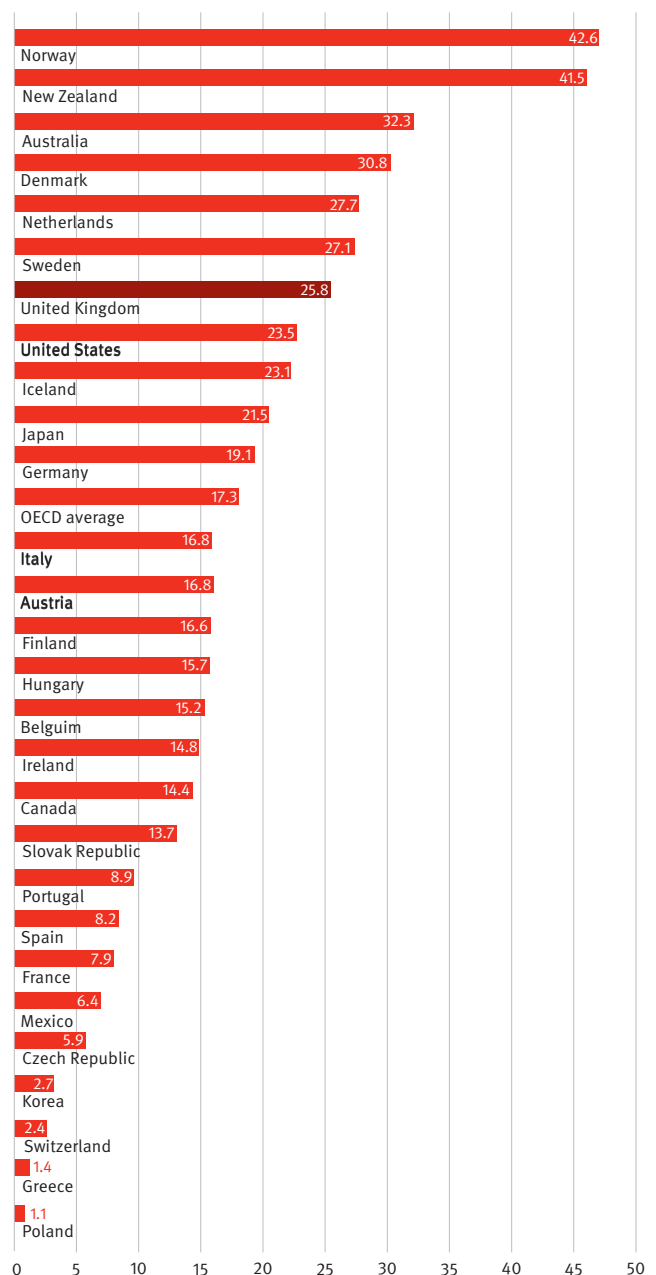
Universities UK has calculated that increasing the fee cap to £5,000 from 2012 in England would deliver an annual increase in income for universities of £1.25bn from 2014 without leading to a decline in student demand for HE.⁴¹

Recommendation five

To maintain standards of higher education, the government and the devolved administrations have little choice but to plan to raise the cap on tuition fees in England, Northern Ireland and Wales. If such fees remain politically unacceptable in Scotland, alternative public sector support for HE will be required.

If they are going to charge more, universities must be expected to deliver more. They should help students to make more informed decisions about their choice of degree course by providing them with much more detailed information about course quality and likely returns. There should be a more explicit focus on the development of employability skills in undergraduate courses. Teaching quality must be high, and business must provide more and better opportunities for students to experience the world of work.

Exhibit 17 Student support in the UK is generous by OECD standards (%)



Source: OECD – financial aid to students as a proportion of total expenditure on tertiary education

5

How universities can do more for business

Just as business must do more and students will have to contribute more, so universities must also adapt to meet the needs of business and the wider community in a harsh economic environment.

The UK's HE sector is diverse, catering for a wide range of needs, and this is a strength that should be built on. Encouraging greater competition, innovation and diversity in how and what universities provide will drive up quality and encourage a greater focus on meeting the needs of business and students.

The diversity of the UK's HE sector – with its world-class, research-led institutions alongside universities that are focused on particular areas of expertise or their local and regional communities – is a real strength, as is its relative autonomy. All this gives the sector much greater control over its own destiny than is the case in most other parts of Europe.

Just like businesses, universities must continue to innovate and develop new products and services to remain competitive in a global marketplace, and to meet the needs of students and their future employers. The funding system – for research and teaching – needs to adapt accordingly. This chapter outlines four issues for universities and government to consider:

- Reviewing the size and shape of the HE sector should be a priority if UK universities are to continue to sustain their high quality of provision, and better meet business needs
- Strengthening the environment for partnerships in collaborative research and innovation between universities and business. This requires the funding bodies to recognise excellent research that is business relevant, as well as a strategic approach to the pricing of research, taking account of the long-term benefits of the relationship to both sides
- The way teaching is funded should be reformed to allow greater innovation in the way courses are designed and delivered. This would encourage more competition for student numbers and ensure business-relevant subjects are adequately resourced
- Universities could increase their capacity to supply workforce training.

The case for structural change

Current funding pressures will provide a spur for universities to think more radically about how they can deliver the best possible intellectual and economic return. They should seek out cost savings wherever they are to be found, and look for ways of increasing revenues from other sources, including business.

Universities have been successfully experimenting with new delivery models which have anticipated changes in market demand. But greater innovation and change will be needed in future to cope with changes in student demand, and the likely pressures on the government should make it easier for universities to innovate and diversify. Experimentation, piloting new approaches to teaching, and finding better ways of institutions and other providers to work together will ensure the sector continues to thrive, despite the pressures it faces.

The Task Force does not believe that the push to increase participation in higher education to 50 per cent of 18-30 year olds in England and Wales should continue to be a target in the current economic environment. The priority should be to ensure that those who go to university continue to receive a quality education. This should go hand-in-hand with greater efforts to deal with educational disadvantage at the secondary school level, and to support young people through apprentice and other vocational training programmes.

The Task Force believes the sector should have greater freedom to decide on how best to respond to the challenges it faces. The diversity of institutions can be strengthened by allowing them the freedom to develop innovative teaching models in efforts to meet student and business demand, and to become more efficient. Greater competition for students between institutions should be encouraged to raise teaching quality, and greater specialisation should also be pursued, in teaching and research. This would help concentrate resources and protect excellence.

Universities should be encouraged to collaborate with each other, to undertake joint ventures and share services, and even to consolidate and merge where this makes sense. Greater involvement by for-profit providers of higher education should be welcomed, provided they meet the same demanding standards for quality and value for money. Government needs to enable universities to enter into shared services arrangements by applying a VAT opt-out.

Longer term, government could consider giving universities greater autonomy from central controls if they were willing to take less public funding for teaching. Universities which were not in receipt of government funding for teaching and which could offer substantial bursaries would not be restricted by the cap on tuition fees. This would give those institutions that have demonstrated their world-class status the ability to compete with the best in the world on more equal terms. Very few universities would be able to meet such stringent conditions.

Recommendation six

Government needs to postpone its 50 per cent participation target for HE, and concentrate on improving educational outcomes at the secondary school level.

Recommendation seven

Government and universities should consider the case for encouraging greater collaboration and consolidation between departments and institutions to help the sector address its funding challenges.

Recommendation eight

Government needs to welcome greater private sector involvement in the sector provided it delivers high-quality provision and value for money.

Recommendation nine

Universities must continue to address their cost bases, making efficiency savings where possible.

Recommendation 10

Government needs to apply a VAT opt-out for HE to encourage more shared services arrangements between universities.

Supporting research and innovation collaboration for mutual benefit

Funding must provide greater recognition to excellent research that has commercial as well as intellectual value. Public funding for academic research comes from two main sources: core funding of universities provided by the funding bodies, and grants for specific research activities which are awarded by the seven research councils.

Since 1981, funding council resources have been allocated on the basis of Research Assessment Exercises (RAEs), a system of rationing the limited research funds available to universities. Although there have been changes in many features of the exercise, the essential principle is one of assessing the quality of research in university departments, mainly on the basis of appraisal by panels of academic experts.

The new Research Excellence Framework (REF), which is about to replace the RAE, will continue to be a key driver of culture and priorities in the HE sector and will strongly affect senior management policy and academics' motivation. The REF will be a major reward and recognition instrument and it will also have an enormous influence on how academics and institutions engage with business and other users of research.

The quality of research includes not only its excellence in academic terms, but also its wider impact. This was not fully recognised in the RAEs, although it had increased emphasis in 2008.

“Strong research links with universities are pivotal to the success of the Microsoft business model. These business-university partnerships are vital to developing the new products on which our business thrives, but also to applying the knowledge of computer science to issues ranging from healthcare to climate change.”

Gordon Frazer, Managing director, UK, Microsoft

To achieve its objective, namely to ‘optimise the economic impact of research’, the REF must ensure that research which is of value to users is not treated as inferior to research which is exclusively curiosity-driven – and that suitable recognition is given to that value. Appropriate recognition must also be given to inter-disciplinary research and to research in newly emerging fields. Business has an important role to play in providing people and expertise to help the REF identify and appraise excellence in these areas.

Excellent curiosity-driven research that underpins the advancement of knowledge must continue to be recognised and strongly encouraged. But so too must research where there is a more evident economic or social impact. As promised in the 2006 Pre-Budget Report, the REF should bring ‘greater rewards for user-focused research’ in order to optimise its economic impact.

Recommendation 11

Through HEFCE and the other funding bodies, government must work with business to ensure that the new REF can succeed in its objective of providing greater recognition to research which business values, so academics who want to work with business are not dissuaded by fear that this may be at the expense of more highly valued activities.

Research activity must be priced strategically – or universities risk losing business investment

Business research has become much more global, and there are now many universities and research institutes around the world where good quality work costs less than in the UK. This is the result both of lower labour costs and of more generous systems for financing HE and public research institutions than are available in the UK.

The introduction of full economic costing and a requirement for universities to cover the full cost of their activities, taking one year with another, has had benefits. For example, universities now have a better understanding of their costs and of the need to ensure that they are sustainable in the long term. And businesses have a clearer idea that university research has to be paid for.

But anecdotal evidence suggests the move to full economic costing has had an adverse impact on the number of businesses seeking new research partnerships. Employers report that UK post-doctoral research associates (who typically work on university research projects with business) are among the most expensive in the world. This is proving a major deterrent to some firms in their research investment decisions. The impact of high costs on the behaviour of small and

growing technology companies may be particularly significant, as they are crucial to the development of a healthy innovation environment in emerging areas of technology.

High quality justifies high prices. But ‘quality’ for business includes reliability and timely response as well as academic performance. Universities must ensure their approach to pricing is fair and that they make the most effective use of their facilities, equipment, research and technical personnel to spread costs appropriately. Cost is not always the primary factor for universities when making pricing decisions, however, and many universities make informed judgements based on nonfinancial considerations – such as the strategic value of a long-term relationship with a company, and the non-pecuniary benefits of the partnership. It is crucial that this strategic approach is sustained.

Recommendation 12

Government needs to make a clear statement of policy, that the main objectives of its support for university-business interaction are improvement of the knowledge base and increased economic impact.

Recommendation 13

Universities need to develop a clear and explicit formulation of the factors to be taken into account when making decisions on the pricing of research which is funded by business or government. They should also implement an appropriate level of delegated authority for negotiators, so that the right decisions are made, at the right level, on how research should be priced.

“Our experiences at Imes Group show that smaller firms can particularly benefit from research links with universities. The knowledge transfer partnerships we have undertaken with Robert Gordon University have significantly increased our business revenue.”

Melfort Campbell, CEO, Imes Group

Funding to support knowledge exchange activities should be sustained – even in these difficult times

The Higher Education Innovation Fund (HEIF) was created in 1999 to help HE institutions work with businesses, and the public and third sectors. Funding available for 2008-09 is £117m, allocated across 129 institutions. The sum will rise to £134m in 2009-10 and £150m in 2010-11. HEIF has had an extremely positive impact, helping to drive a process of cultural change within universities, including in many cases the development of stronger links with SMEs. Many universities have used HEIF funding to develop strategies for securing support from other sources, such as the Regional Development Agencies and the European Union, to enhance their engagement with SMEs. It is important to ensure that this momentum is sustained, and that HEIF continues to help universities meet real business needs.

To improve the conditions which favour collaboration and investment, models and case studies of good practice should be developed for the movement of staff between firms and institutions.

Technology transfer, and knowledge exchange generally between businesses and universities, is most effectively conducted by personal interaction. This is also the best way to generate and develop links in other areas, including teaching, recruitment, and the promotion of transferable skills.

Placements and secondments in both directions are good ways to promote this kind of interaction, but there are obstacles – including location, pay, pensions and difficulties over legal liability and obligations. Some of these obstacles are hard to remove, others may be more easily resolved. The more difficult issues might be addressed by a group of stakeholders working together to develop a clearer picture of how problems should be recognised and solved.



Recommendation 14

Government, universities and business need to work together to develop models and case studies of good practice for the movement of staff between businesses and universities in order to develop more effective partnership working and also identify and remove the obstacles to such movement.

Recommendation 15

Government needs to ensure that the Higher Education Innovation Fund continues to help universities meet real business needs.

There is real scope to reform teaching funding

The majority of undergraduates are still residential students, studying away from home for three or four years. This model remains in strong demand from many students, who value the opportunity to move out of home and develop life skills. But encouraging institutions to develop more innovative teaching models could help address business concerns regarding the extent of student interaction with the world of work. While there has been very strong growth in the number of part-time and mature students, the current system remains biased towards traditional teaching models and moves to create new courses to meet demand from the business community or elsewhere can be hampered by the risk of

losing out on public funding. A much greater diversity in the composition of the student body – now over a quarter are studying part-time – requires a review of whether current funding structures remain appropriate (**Exhibit 18**).

The Task Force is interested in teaching models that would allow students to have more experience of the world of work throughout their studies. Some businesses would see real value in recruiting undergraduates during their penultimate year, so that their final year was a mix between academic studies and business practice relevant to their future employer, with potential recognition and accreditation of the work undertaken with the employer while studying.

And with a growing demand from business to develop the skills of their existing workforce, consideration must be given to greater flexibility in the way teaching funding is allocated. The current system is based on traditional notions of study and completion of full academic years that may not be attractive to students who want to be able to fit their studies around work and family commitments. With increasing business demand for graduates with more experience of the world of work, and student demands on how and where they want to study changing, it is right to review whether the current approach to teaching funding remains the most effective, as well as the case for funding by credits.

Exhibit 18 Part-time study is an important part of the market

	Full-time		Part-time ⁴²		Total	
	Number	%	Number	%	Number	%
First degrees	281,995	88%	37,265	12%	319,260	100%
Other undergraduate qualifications	43,290	37%	74,655	63%	117,945	100%
Foundation degrees	7,990	69%	3,640	31%	11,630	100%
Doctorates	13,665	78%	3,880	22%	17,545	100%
Other higher degrees	79,465	72%	31,385	28%	110,850	100%
Postgraduate Certificate of Education (PGCE)	25,005	88%	3,370	12%	28,375	100%
Other postgraduate qualifications	14,785	33%	30,675	67%	5,460	100%
Total	466,195	72%	184,870	28%	651,065	100%

The Task Force is aware of the arguments against a move in this direction for the whole of the HE sector – particularly the administrative burden this could place on the large number of institutions where traditional study patterns would continue to dominate. HEFCE is moving in the right direction with the recent changes to funding to support flexible study patterns.⁴³ The funding system needs to support universities, students and employers who want to move to more innovative models of teaching.

Recommendation 16

The government should continue to review teaching funding rules to allow for a more flexible approach to university studies. There is a strong case for a move to credit-based funding if the red tape burden on universities can be minimised.

Greater competition between universities for students should be encouraged

Universities are currently restricted both on the price they charge (through a cap on, or in Scotland an absence of, tuition fees) and on the volume of publicly-funded students they can teach. There is a case for maintaining a cap on fees – albeit at a higher level – and for setting a limit on the number of funded places that the government can support. But within these parameters, more could be done to introduce greater competition between institutions, with the aim of improving efficiency, raising teaching quality and allowing the most successful institutions to attract more students.

In England, each university receives a block grant based on the number of students at the institution in the previous year, provided student numbers do not exceed a tolerance band of plus or minus five per cent. The main benefit of the current system is that universities have a degree of certainty over the funding they will receive and can therefore plan in advance.

Universities do not receive extra funding for any additional student numbers they recruit unless they make successful bids to funding councils.⁴⁴ If universities recruit more than five per cent above the number of students they are allowed, they lose out on public funding and the unit of funding per student is reduced. Universities in the devolved administrations face similar restrictions on the volume of students they can accept, although the detailed mechanics of how funding is distributed varies between each administration.

The current system for allocating teaching funding offers little incentive to drive up teaching quality and reward excellence. The restrictions on volumes and reliance on past recruitment to allocate

future funding means that the stronger, more popular, university courses are oversubscribed and talented students have to be turned away from the best performing institutions. Funding councils should introduce more flexible incentives, so that institutions are encouraged to pursue teaching excellence and capture a greater share of the market of funded places.

Each university could receive a minimum block grant for teaching of, say, 95 per cent of the amount received in the previous year. The final five per cent plus could be allocated on the basis of bids for additional places outside the current system. Bids could be assessed against a number of pre-determined measures, such as the provision of STEM subjects, the level of unmet student demand, the proportion of places filled through clearing, and graduate employment rates and subsequent earnings. Other controls might be required, such as limiting the total funding to, say, 110 per cent of the grant received in the previous year.

Within the overall funding limits, institutions that had excess student demand for places could be allowed to increase the total intake and funding from year to year, provided they had the desire and capacity to grow without undermining the quality of the student experience at these institutions. The more popular universities would flourish at the expense of the less successful. Universities which failed to attract students might lose out on funding and be forced into closer co-operation or collaboration with other institutions, which could strengthen their capability and capacity.

Recommendation 17

Within the overall limit on publicly-funded student numbers, the government should consider reforming the current funding rules to allow universities to meet the demand for increased student numbers in particular disciplines if they wish to do so.

Universities should be properly resourced to provide high-quality STEM courses

The most effective means to drive up the number of young people studying vital STEM subjects is to raise student demand. This report sets out recommendations to encourage this. But the Task Force also believes there is a need to review the extent to which universities receive adequate funding for these relatively expensive courses.

In England, most STEM subjects receive 1.7 times the basic unit of funding for teaching. This is based on historic cost data which institutions provide to the funding councils. But many universities



report that the current level of weighting does not reflect the true cost. And for others, the challenge of delivering good engagement with industry, the use of live projects, practical experience, and hands-on testing will also call for some additional resources.

“Engineering is a core skill for the Balfour Beatty Group, and as we continue to grow and develop our business we are seeking to recruit more high calibre graduates. But if we do not take steps to increase the number of young people studying vital science, engineering, and maths subjects at university, it will become increasingly harder to find the engineers we need.”

Ian Tyler, Chief executive, Balfour Beatty

Universities frequently cross-subsidise particular disciplines with money from courses that are more popular and generate more income. This makes high-cost STEM subjects vulnerable: if a university changes its priorities, then this cross-subsidy may no longer be tolerated. In England, additional resources have been allocated by the government to secure the provision of high-cost laboratory-based subjects while demand for them improves. The additional funding was provided in recognition that these subjects are particularly expensive to deliver, strategically important to the economy and society but vulnerable as a result of low student demand.

It is imperative that teaching funding gives universities the ability to teach STEM subjects in the resource-intensive way that develops the high-quality graduates which business values.

Recommendation 18

Government and universities need to review the level of resources provided for the teaching of STEM to ensure that universities can deliver high-quality and relevant STEM education.

How universities could deliver more workforce training

Companies provide most of their training in-house, although many also use private providers, colleges and, to a lesser extent, universities. Businesses need training that is tailored to their skills needs, delivered at a time and place that suits the organisation. The full-time nature, fixed terms and set courses of HE is a major barrier for universities that wish to capture a greater market share, although some have made good progress.⁴⁵ The work done under HEFCE’s co-funding initiative⁴⁶ and the increase in Foundation degrees⁴⁷ suggests there is potential for further growth, although the Task Force is not convinced that the market for university-delivered workforce training will increase significantly in the short term. Research for the CBI/UUK report, *Stepping Higher*, indicates that good work is being done, but considerable internal changes within universities will be required if they are to capture a greater share of the market.

“We have worked with our university partners to create bespoke training solutions to address the skills needs of our business. Project management skills will be a vital part of our future operations, and we have recently developed a full time MSc programme with the University of Warwick and University College London to develop these essential skills. It is a win-win situation, as we will gain new recruits with the specific skills set we need, while the students receive financial support and mentoring from Network Rail employees and the guarantee of a job with us on graduation.”

Iain Coucher, Chief executive, Network Rail

The CBI/UUK report set out a number of issues for universities to consider if they want to increase this area of activity. They should:

- Offer more flexible approaches to the delivery of workforce development programmes – running them on employer premises, outside term time, at unsocial hours, or using distance learning for part of the course
- Help employers identify their future skills needs and show how they can be turned into training programmes. Learners on these courses may need a different teaching approach from traditional university students
- Market their services better, making it easy for employers to know who to contact, and ensuring enquiries are followed through effectively
- Make qualification accreditation as simple as possible
- Build support across all relevant staff and support academic staff engaged in delivery, and allow teaching staff enough time to develop a good understanding of the jobs of those they are training and the operation of their organisations.

Strong leadership and management skills are central to driving business competitiveness and managing social and technological change. Practical leadership skills – the ability to influence people and effect change – are now as important at all levels within a firm as the traditional management skills of organisation and implementation. And the demand for leadership and management skills among employers is set to increase – with the number of jobs for ‘managers and senior officials’ in the UK set to rise from 4.8m (15 per cent of the total workforce) in 2007 to 5.7m (17 per cent) by 2017.⁴⁸

University business schools are important providers of leadership and management training, and the top UK schools feature prominently on the international league tables.⁴⁹

UK business schools have to work flexibly with employers on the design and delivery of accredited and unaccredited programmes. Employers are increasingly demanding customised executive education programmes tailored to their specific needs. And there is a need for undergraduate and postgraduate programmes to incorporate the management and entrepreneurial skills required for the workplace.

Recommendation 19

Universities must follow the good practice identified in the CBI/UUK report, *Stepping Higher*, to capture a greater share of the employer-funded, workforce development market. In particular, they need to offer more flexible approaches to the delivery of workforce development programmes, exploring opportunities for modular courses which build up towards accredited programmes and making the accreditation process as simple as possible for employers and employees.



Ensuring students have the skills to succeed

The Task Force believes students should have a major voice in the debate about the future of HE.

They have a right to expect a high-quality education and they want a worthwhile job when they leave. But students have to help fund the education that gives them these long-term benefits.

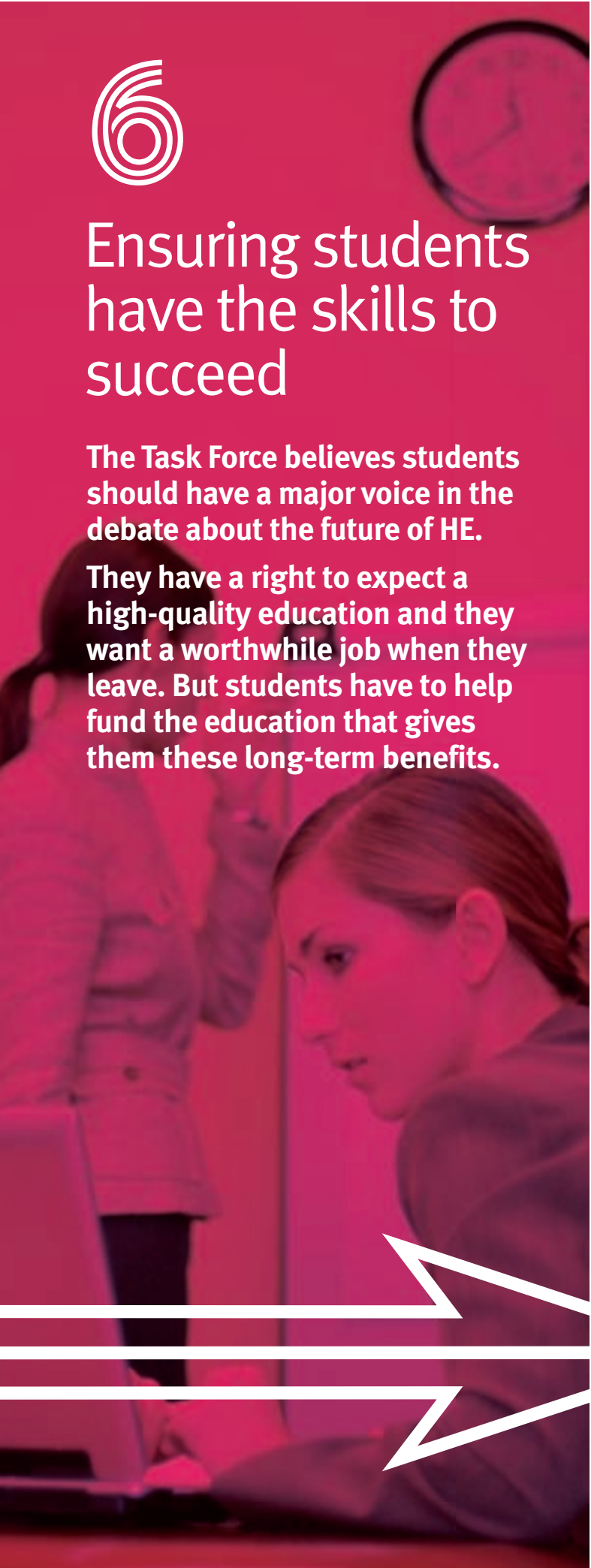
All students need to develop employability skills while they are at university.

Students need to be clear about the benefits in employment terms of studying certain disciplines, such as STEM or certain skills such as language proficiency.

All students should leave university with the employability skills they need for work

There must be a greater focus on students in all disciplines developing employability skills and getting experience of the world of work while at university. The broad university experience and the process of learning provides students with the opportunity to develop the skills and attributes which employers value, such as research skills, managing information and critical thinking.

The acquisition of employability skills – through additional course components offered to students, for example, or embedded within academic degrees – needs to be given a high and formally-credited profile within both undergraduate and postgraduate degree courses. As part of the Task Force’s work, the CBI has conducted extensive research with Universities UK and DIUS (as was) into current approaches to the teaching of employability skills in UK universities. The subsequent report, *Future Fit*, explains that where universities set aside specific resources to engage with employers and ensure their students have the opportunity to develop employability skills, real benefits are forthcoming in terms of preparing students for the world of work.



“I know first-hand that British graduates are themselves competing in a global market for the best jobs. In the UK we need to ensure that our graduates continue to be amongst the best in the world, developing the business awareness, personal skills and technical knowledge they will need to be successful in today’s world.”

Johnny Cameron, former Chairman of global markets, Royal Bank of Scotland

“University opens doors so you’ll be considered for a job. Now so many go to university you have to differentiate yourself. What do you demonstrate to employers? It’s down to the individual. Everyone’s got to develop key competencies.”

Graduate focus group respondent

Much more needs to be done. Half of all recent graduates would like to have done more work experience alongside their studies, and three-quarters recognise work experience as a crucial consideration for employers when taking on graduates.⁵⁰

Work experience, whether in the form of short-term work placements, extended summer internships or ‘sandwich’ years in industry, can be hugely beneficial in developing the skills that employers value. Most CBI members believe universities should help arrange work experience placements for their students as a priority. The mechanisms for achieving this – dedicated employer brokerage in university careers advice centres, for example – are not cost-intensive, and bring enormous benefits to students, universities and businesses. But for this to be effective, employers must also become more engaged.

Students themselves have a big part to play in achieving these employability outcomes. Task Force members have already committed to offering more placement opportunities and work experience, as well as to working with universities to give students access to live projects to enrich the HE experience. Students need to understand that employability is an important goal for their time at university. Those not already doing so should take up the opportunities on offer and look for work-related learning – for example through their regional Shell Step agent or the National Council for Work Experience.

Universities and business must work to revitalise sandwich courses – businesses need to offer more places and students should be exempt from tuition fees during their placement year.

Recommendation 20

Students need to take up opportunities to develop employability skills from day one of their university experience, being more demanding of academic institutions to ensure this is delivered.

Recommendation 21

Universities need to ensure that the employability skills of all students are explicitly developed and recognised while they are at university. These skills should be developed alongside their academic qualifications and achievements – they are an integral part of HE.

Raising the number of students with STEM degrees

In recent years a number of initiatives have been taken to raise young people’s interest and participation in science and maths at school. It is important to focus on proven schemes that address the main barriers to increasing participation, such as the STEM Ambassadors programme. But raising STEM attainment and participation also requires changes in the approach to mathematics and science at school level.

“STEM skills are now vital for a new generation of industries which will help the UK economy grow and prosper in the future. In addition to more traditional sectors, we must develop the ‘new STEM’ agendas in non traditional parts of the economy such as entertainment technologies and digital communications.”

Madeleine Atkins, Vice-chancellor, Coventry University

All students should be expected to study some form of maths post-16

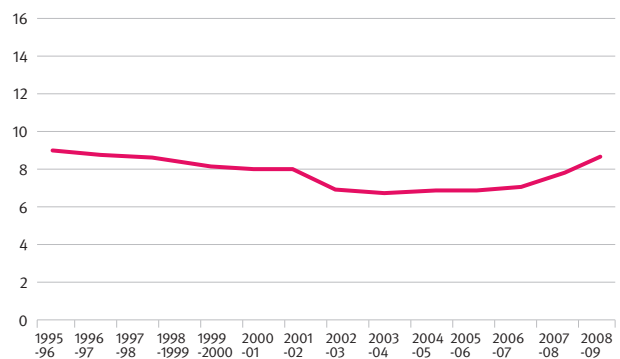
The Task Force thinks more young people should study maths or continue to develop their numeracy skills after the age of 16. A solid understanding of maths is an essential requirement for success in other science subjects and develops valuable numeracy, analytical and problem-solving skills. Maths is the only A-level subject that adds to earnings – up to 10 per cent – even when the employer is unaware of the person’s qualifications.⁵¹

Among the UK’s leading competitors, an opt-in culture for maths leads to much higher participation rates among 16-18 year-olds. In France, where a form of maths is compulsory for all students pursuing the baccalauréat qualification, around two-thirds of the cohort take maths after the age of 16. In all streams of the German education system, a form of maths is obligatory until the completion of secondary education. In Singapore – where secondary school students are consistently among the top performers in the quadrennial Trends in International Mathematics and Science Study – even students who specialise in humanities and arts at A-level have to take at least one maths or science subject.

As a nation, the UK is failing to capitalise on the maths potential of its young people – only around 15 per cent of young people continue to study maths at any level post-16.

Since 2003, there has been an average five per cent annual growth in the number of students taking maths A-level, but take-up has only recently returned to pre-2000 levels. Maths A-level made up just nine per cent of total entries in 2009, and even if the number of maths entries hits the government’s proposed new target of 80,000 by 2014, this would still only represent around 13 per cent of total entries.

Exhibit 19 Only a small minority of young people study A-level maths (%)



Source: DCSF and projections for 08-09 using JQC data – A-level maths entries as a proportion of total entries

Recommendation 22

Government needs to ensure that all young people, regardless of what route they choose, study some form of maths or numeracy education after 16.

In England and Wales, the current ‘single lane’ system of maths after 16 needs to be widened – students that are not able or do not wish to do maths A-level should be able to study for an applied maths AS/A-level, a maths AS-level spread over two years, or a higher-level functional numeracy qualification.

Students who fail to achieve an A*-C at GCSE, or Scottish equivalent at 16 should be opted-in to courses to help them to do so, or to achieve a level two functional numeracy qualification.

Studying all three sciences up to 16 should be the expectation for high achievers

Helping young people to develop a firm knowledge foundation and an enthusiasm for science before and during Key Stage Four is crucial in maintaining the pipeline into A-levels, or their Scottish equivalents, and beyond. Studying all three sciences as separate GCSEs (“triple science”) or Scottish Standard Grade is the best preparation for A-level or equivalent.⁵² But only a small minority of pupils in England currently study triple science, with two-thirds taking the equivalent of double science. According to government figures, less than half (46 per cent) of maintained schools entered candidates for three separate sciences in 2008.

In England and Wales, the government has recently introduced an ‘entitlement’ to study triple science for those pupils achieving at least a level six at age 14. But the Task Force urges the government to go further, with a call for an automatic opt-in to triple science for those 40 per cent of pupils achieving a level six or above at age 14 – who could opt-out if they so desired.

Recommendation 23

Government should ensure all students capable are opted-in to triple science at GCSE or their Scottish equivalents.

This will not be enough by itself. The main barrier to triple science provision from the perspective of schools is ‘a lack of curriculum time’, as cited by almost half of schools.⁵³ This could be overcome if schools were directed to give triple science priority. Effective and inspiring provision of triple science also requires specialist teaching and modern labs and equipment; investment in schools must reflect this priority. But a shortage of specialist teachers remains a concern, with one in five saying this is a problem, and lack of resources, such as laboratories or equipment, is also a major barrier.⁵⁴

Students must be given the information they need to make informed choices

Students are expected to invest large amounts of their time and money in their higher education. They have a right to expect a good return on this investment. Student demand should remain the main driver for universities but too often these ‘high-stakes’ career decisions are based on little more than media stereotypes, parental influence or friends’ advice.⁵⁵ (Exhibit 20)

“At KPMG we seek to recruit the best graduate talent out there – regardless of which university they attended. We will give our staff the specific training they need, but it is very helpful to their careers that they come to us with the right foundation of employability skills. Businesses and universities should work together to provide young people with a proper preparation for the workplace and clear information on career choices.”

John Griffith-Jones, Joint chairman, KPMG Europe

Exhibit 20 Young people feel unsupported by the careers advice they receive

- Two fifths (43 per cent) of 16-18 year olds either received poor advice or did not receive any advice at all from a careers service.
- 44 per cent of undergraduates think there is insufficient information to help school and college students choose between universities and courses.
- Over half (55 per cent) of graduates felt that if they had received more or better careers advice they would have definitely or potentially changed their course.

Source: CBI/ YouGov (2009)

Better information, advice and guidance to students will improve the take-up of the subjects that business values, and that lead to better employment outcomes for students.

Lack of information and effective guidance can lead to young people making the wrong decisions at 14, 16 and 18, and to disappointment at a later stage. More than a fifth of students who enrol on HE courses subsequently drop out⁵⁶ – a low proportion by the standards of other developed countries, but still a bad experience for those involved.

Current websites do not go far enough to encourage good decision making. The UCAS website provides useful basic information about entry requirements and the institutions. Unistats⁵⁷ is intended to enable students to compare universities on teaching quality, job prospects and student satisfaction, but offers only a very limited snapshot of graduates' career destinations and employment rates.

In the US, the Occupational Outlook Handbook, produced annually by the Department of Labor⁵⁸ provides an accessible online resource for prospective university applicants to find out which courses provide access to particular career routes, and what prospects different types of job have to offer.

Action is needed to provide good quality data to inform choices. This should include:

- **Information on teaching quality:** universities should publish data on teaching quality to inform student decisions on institutions and individual courses. Objective scorecards for universities and courses are needed as well as more detailed student satisfaction scores
- **Tracking employment outcomes:** more information on employment outcomes from students on particular courses and institutions should be available; information on the skills acquired from different degrees (building on CIHE work⁵⁹) is also needed
- **Economic returns from different degree subjects:** information about the salaries that students on particular degrees can expect to earn needs to be collected regularly and would provide a useful resource for careers advisers and university applicants. Students pursue courses for many reasons apart from maximising their future income, but they still need to understand what they can reasonably expect in return for their investment in higher education

Exhibit 21 A view from the students

As they prepare to enter the toughest labour market in a generation, young people are aware of the impact that the recession will have on their search for jobs. A new survey conducted by YouGov for the CBI⁶¹ showed that two thirds (69 per cent) of current undergraduates expect economic conditions to affect their plans after graduation. In these tough times, students are clear about the importance of developing employability skills, and the value of work experience. The survey found:

- A third of undergraduates (34 per cent) are learning employability skills as part of their degree
- Two thirds of undergraduates (62 per cent) and graduates (66 per cent) recognise the value employers place on employability skills when recruiting
- Four out of five undergraduates are either undertaking, or intending to pursue, work experience
- 91 per cent of students applying to university have some idea of the career they wish to pursue.

- **Clear guidance on the routes into, and returns from, different types of job,** following the model of the Occupational Outlook Handbook.⁶⁰

Recommendation 24

Government, universities and business must work together to provide students, their advisers and their family with an effective website so that students can compare the outcomes of different choices, based on high-quality information about employment prospects, teaching quality and economic returns from different courses.

HE Task Force members

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Ian Tyler

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Appendix

– existing schemes for businesses

The Year in Industry

www.yini.org.uk

Purpose: Provides high-quality paid placements for gap year or sandwich degree students – over 300 major employers are already involved in the scheme.

Shell Step

www.shellstep.org.uk

Purpose: Matching service bringing together employers and undergraduates for short-term, project-based, internship opportunities.

Enternships

www.enternships.com

Purpose: Enternships is a niche recruitment firm which connects motivated and ambitious students and graduates with start-ups, small companies and larger organisations that can provide entrepreneurial internships and full-time placements worldwide.

Training Gateway

www.thetraininggateway.com

Purpose: Funded by HEFCE, the Training Gateway is a one-stop shop from which to source corporate, vocational and executive training from UK universities. It provides easy and direct access to named coordinators in every UK university, who offer a wide range of high-quality training and development services. It provides access to over 100,000 courses.

STEM Ambassadors

www.stemnet.org.uk/ambassadors.cfm

Purpose: Run by STEMNET, employees work as ambassadors with schools to promote STEM skills to young learners, actively encourage them to enjoy STEM subjects, and inform them about the career opportunities that are available to them. There are currently 1,500 employers involved with the scheme, which aims to provide over 27,000 STEM ambassadors nationwide by 2011.

Knowledge Transfer Partnerships

www.ktponline.org.uk

Purpose: Knowledge Transfer Partnerships involve the forming of a partnership between a business and academic institutions, enabling the business to access relevant skills and expertise. The business works with a KTP adviser from the academic body on a specific project, such as product development or implementing a new strategy. KTPs are funded by the Technology Strategy Board, although business has to make a financial contribution to the work.

INDEX: Innovation Delivers Expansion

www.indexvouchers.org

Purpose: The Innovation Voucher Scheme formally known as INDEX (Innovation Delivers Expansion) Scheme awards West Midland SMEs a £3,000 voucher to purchase academic support for an innovation at any of the region's 13 universities, and help for business and management skills at the university business schools. The Innovation Voucher scheme is funded by the Regional Development Agency, Advantage West Midlands.

Interface

www.interface-online.org.uk

Purpose: Backed by the Scottish Funding Council, the Interface web portal aims to match industry and university research partners. The project has facilitated KTPs, research projects, and industrial placements.

Foundation degree forward

www.fdf.ac.uk

Purpose: *fdf* is a national body that supports the development and validation of high quality Foundation degrees, by supporting employer engagement across work-based HE programmes. *fdf* works in partnership to ensure that the development of work-based higher level skills training is driven by the needs of employers and students. *fdf* has successfully worked with a large number of providers and employers in engaging with Foundation degrees and supporting their key business objectives.

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CBI

The CBI helps create and sustain the conditions in which businesses in the United Kingdom can compete and prosper for the benefit of all.

We are the premier lobbying organisation for UK business on national and international issues. We work with the UK government, international legislators and policymakers to help UK businesses compete effectively.

Our members benefit from our influence, a wealth of expertise, business services and events.

CBI higher education task force

The CBI higher education task force explored what business wants from higher education, how business and universities can best work together and how the sector should be funded.

www.cbi.org.uk/highereducation

