



There are many  
paths to success

# Wolf Review of 14-19 Vocational Education

*Submission by the Edge  
Foundation, October 2010*



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## Wolf Review of 14-19 Vocational Education: Edge Submission

### About this submission

The Secretary of State for Education, Michael Gove, has asked Professor Alison Wolf to consider how we can improve vocational education for 14-19 year olds to support participation and progression, specifically:

- how vocational education for 14-19 year olds can be improved;
- what the appropriate target audience for vocational education is;
- what principles should underpin the content, structure and teaching methods of the vocational education offer; and
- how progression from vocational education to positive destinations can be improved.

This is the Edge Foundation's submission to Professor Wolf.

Edge is an independent education foundation, dedicated to raising the stature of practical and vocational learning.

We think vocational and practical education should be valued just as highly as academic choices.

We believe that practical learning should be part of every young person's education. We want improved educational facilities, better careers guidance for young people, increased employer engagement at all levels, and an overhaul of teacher training, particularly in practical and vocational subjects.

### The most important problems with current institutional, funding and accountability arrangements

#### *The biggest problem of all is the academic-vocational divide*

The most fundamental problem facing 14-19 vocational education in England is the historic and cultural divide between the "academic" and "vocational" curricula. It is widely assumed that young people who are capable of doing well in GCSEs and A levels should concentrate on traditional subjects. With rare exceptions, only young people expected to do less well in GCSEs and A levels are guided towards vocational education and training.

The academic/vocational divide needs to be challenged for two reasons in particular.

First, it reinforces the idea that academic learning invariably provides a better path to success. This is open to challenge. Some degree programmes no longer lead to the earnings premium enjoyed by graduates in the past. Conversely, there is a shortage of people with science, technology, engineering and other vocational skills at level 3 and 4.

The consequence of the academic-vocational divide is that academically-able young people are steered away from taking vocational courses as part of a broad curriculum at 14, and again at 16. They are, in effect, denied a choice. This point was made by Ofsted in a 2007 report on increased flexibility pilots and work-related learning<sup>1</sup>:

Providing distinct curriculum pathways in Key Stage 4 limited the opportunities for able students to undertake courses leading to vocational qualifications, and for those following vocational courses often ruled out options open to other students.

This is inherently unfair, and in a rapidly changing economic climate, it is not sensible either. Young people need to be able to take academic and vocational courses in varying combinations linked to their aims and interests.

Second, the academic/vocational divide is based on an assumption that academic learning requires more "brain power" than vocational learning. In practice, both forms of learning rely on the same habits of mind. In a report for Edge, "Bodies of Knowledge", Guy Claxton, Bill Lucas and Rob Webster draw on recent research in neuroscience to show that learning – of any kind – involves investigating, experimenting, reasoning and

<sup>1</sup> Links to sources quoted in this submission are at annex 2.

imagining, as well as curiosity, determination, resourcefulness, sociability and reflection.

The same point is made by Matthew Crawford in his book, "The case for working with your Hands". Based on his experience as an electrician and mechanic, Crawford explains that manual work involves concentration, careful thinking and determination. It also brings many moments of genuine pleasure – the kind of pleasure that comes from solving a problem, or from a job well done.

This is a direct challenge to the notion that learning divides neatly into separate spheres labelled "academic" and "vocational". It also challenges the notion that one type of learning is intrinsically superior to another: they are just different facets of the same thing – intelligence.

In a 14-19 context, academic and vocational learning should be given equal status (and as we argue later, taught with equal rigour). At 14, young people should be able to choose a blend of courses from across the academic/vocational spectrum, rather than being steered in one direction or the other. In Edge's vision, students would choose from a variety of pathways each of which would have a different balance between theoretical and practical learning. They would be supported in doing this through discussions between themselves, their parents and teacher.

In this vision, students who include vocational learning in their choices at 14 will gain knowledge and skills which prepare them to specialise further at 16. They will also develop skills and aptitudes which help them prepare for employment and further learning. (We return to this point later). However, studying a balance of academic and vocational subjects at 14 will also enable them to continue along a broad path at 16, or indeed to change pathways completely, if they so choose.

### *The notion of "equivalence" gets in the way of a proper debate*

The number of vocationally-related qualifications (VRQs) awarded has risen rapidly in recent years, from 1.4 m to 2.6 m. This category includes many qualifications taken by 14-19 year olds following full-time courses in schools and colleges. Four awarding bodies – Edexcel, OCR, Sports Leaders UK and NCFE – have experienced particularly rapid growth in this area.

Edge is entirely in favour of encouraging more young people to take vocational qualifications at school or college, provided they choose them for the right reasons, and gain significant benefits from them.

However, there is prima facie evidence that some young people are being steered towards vocational qualifications for the wrong reasons. The think tank, Civitas, claims that VQs are taught in schools because they are easier to pass; and because they are deemed to be equivalent to anything up to four GCSE passes at grades A\* to C, they boost a school's position in the league tables.

There are two issues here. First, is it true that vocational qualifications are too easy? And second, is there evidence that schools are encouraging young people to take VQs for the wrong reason?

Taking these questions in turn, there has been criticism of two vocational IT qualifications in particular. Ofsted described them as of "doubtful value", and according to the TES, National Strategies consultants found that "the standards required for a pass in [one] qualification were generally equivalent to those expected of an average 11-year-old"<sup>1</sup>.

These reports are at the root of repeated claims by Civitas and others that all vocational qualifications are of "extremely questionable value".

In reality, there is no robust evidence that VQs are generally "easier" or "harder" than GCSEs. The issue has not been tackled head-on either by the Department for Education or by its regulator, Ofqual. Nor is it within the remit of the current review: announcing the review in the House of Commons, the Secretary of State said "[Prof Wolf's] review will not be considering the detailed content of specific qualifications".

Secondly, Civitas has used very limited evidence to suggest that the only reason schools offer VQs is to boost their position in the league tables. This is unfair and untrue.

Many students respond well to VQs. They enjoy the subjects; they feel motivated by them; and they get good grades. In many cases, enjoyment of a vocational qualification rubs off in other areas,

<sup>1</sup> Whitehall ping-pong over 'dodgy' ICT exams, TES, 27 March 2009. The article says "The qualifications in question are not named in Ofsted's report, but are understood to be Edexcel's diploma in digital applications and the OCR national level 2 in ICT."

leading to improved performance in other subjects as well.

In addition, many students see vocational qualifications as relevant to what they want to do as adults. If they can start down their chosen track at 14, they are more likely to stay in education or training after 16, and are better placed to take informed decisions about future learning and careers.

Nor should we forget that employers value vocational qualifications. They believe VQs are better than academic qualifications at developing some of the broader skills needed in the workplace, such as teamwork and problem solving. These are all valid reasons for offering vocational qualifications to young people. However, anecdotal evidence suggests that some schools have steered young people towards vocational qualifications because rules of “equivalence” mean they are a way of boosting a school’s position in the league tables. The ensuing debate has harmed the reputation of all VQs.

As noted already, the present review will not look at the detailed content of individual qualifications. However, the Secretary of State has asked “whether there is a need for an official quality benchmark for vocational education and awards”. The answer to this question must be yes. As part of establishing a benchmark, we must re-visit the vexed question of “equivalence”.

### *Too much vocational education is provided by people with little vocational experience*

In order to teach a vocational course in England teachers in secondary schools are required to have a degree, but they are not required to have any experience of the vocational area they are teaching. Meanwhile, people with extensive vocational experience can teach in further education by achieving Qualified Teacher Learning and Skills accreditation – but they may only work in schools as “instructors”, not as teachers. Instructors have a lower professional status – and generally a lower salary – than school teachers, even though they perform essentially the same functions. This is indefensible.

The House of Commons Children, Schools and Families Committee highlighted these issues in a recent report, as did the Skills Commission report,

“Teacher training in vocational education”. The Skills Commission<sup>1</sup> said –

“If we are successfully to establish and maintain a vocational pathway through 14-19 education and on to higher education, we need professionals with recent and relevant vocational knowledge and skills, and the capability to pass these on to learners ... [and] we cannot continue to label teachers of vocational education as a 'semi-profession'.”

The report concluded that (a) teachers of vocational subjects in schools should be required to have experience of, or expertise in, the relevant vocational areas and (b) teachers of vocational subjects in FE colleges should be able to teach those subjects in secondary schools.

The Commission also recommended a “Teach Too” programme, to enable vocational experts to work part-time as teachers. Finally, the Commission recommended that teachers of vocational subjects should have access to employer placements as part of their commitment to CPD, so they can keep their subject-specific knowledge up to date. Edge fully supports these recommendations.

### *Facilities for vocational education are often poor*

In Holland students aged 14 are taught vocational courses in specialist schools. They are of a very high standard and include, for example, modern car maintenance facilities, equipped hospital wards and professional catering facilities. It is easy to see in these schools that students have high self-esteem and are motivated by the work they are doing.

Some schools in England also have specialist facilities for vocational programmes. Examples include engineering workshops, catering kitchens, hair and beauty salons, recording studios and construction facilities.

However, this is the exception, not the rule. Most schools continue to deliver vocational (and

<sup>1</sup> The Skills Commission meets every month in Parliament to discuss the leading issues in skills, training and further education policy. The Commission is co-chaired by Barry Sheerman MP and Dame Ruth Silver. Commission members include parliamentarians from all the main parties, and experienced practitioners from across the skills sector.

vocationally-related) courses in facilities designed for general teaching.

Students on vocational courses should have access to specialist facilities and equipment. Specialist facilities could be in a stand-alone University Technical College, as proposed by the Baker Dearing Educational Trust. Indeed, this is in many ways the ideal solution, as UTCs will blend dedicated, high-quality technical and vocational learning with core national curriculum subjects including English, maths and science – similar in many ways to the Dutch model quoted above. That said, specialist facilities can also be provided in other types of school (either as a permanent facility, or as mobile vocational workshops shared by several schools), or by FE colleges. The most cost-effective way of achieving these aims would have to be based on the particular needs of a community, such as geographical location.

It is disappointing that the Building Schools for the Future programme concentrated on replacing out-dated and run-down school buildings with schools which, whilst they are structurally sound and more attractive, are basically the same as ever. The chance to restructure the system of education and provide specialist facilities was not taken. Future investment in school buildings and facilities should focus on securing specialist facilities rather than building new schools which only serve to reinforce the current system.

### *Young people can't make fully-informed choices*

The Skills Commission report, "Inspiration and Aspiration", reported that the national budget for impartial careers advice for young people went down from £233 million in 2000-01 to £196 million in 2007-08. This is a reduction of 16% in cash terms and about 27% in real terms (after allowing for inflation). At the same time, the Government required Connexions services to focus attention on those young people most at risk of joining the NEET group – not in education, employment or training.

In 2008, the Children's Workforce Development Council estimated that there were around 7,500 Connexions Personal Advisers working in England, though not all were trained Careers Advisers. The number has almost certainly fallen since then and looks to fall even further soon, because many local

authorities are currently cutting funding for careers services.

Careers Advisers work alongside school-based careers educators. As the Careers Profession Task Force noted in its recent report, "Towards a strong careers profession", "There is no single organisational model for Careers Educators: titles and responsibilities vary from one school and college to the next". The report goes on to say that –

The best schools and colleges have a Careers Coordinator in post, with a clearly defined role that is recognised in the Teaching and Learning Responsibility structure ... [However] a growing number of schools have recruited Careers Coordinators from non-teaching backgrounds [and] A recent survey of Careers Coordinators by NICEC/NFER revealed that less than a third held a qualification relating to Careers Education, Information, Advice and Guidance.<sup>1</sup>

At the same time, teachers are ill-equipped to provide full and impartial advice. They are familiar with GCSEs, A levels and degree courses, but according to YouGov research for Edge, only 24% of secondary school teachers say they have a good understanding of apprenticeships. Other research suggests that in schools with sixth forms, teachers tend to steer students towards the courses available at that school. It seems highly likely that teachers' views of academic and vocational qualifications also affects the way they guide young people's choices at 14.

Putting these factors together, it is clear that the majority of young people have very little access to impartial advice when making decisions at 14, 16 or 18.

Specifically, it is by no means obvious that young people fully understand the choices available to them when (at the age of 13-14) they choose their Key Stage 4 options. There has been surprisingly little research into the way young people make these choices. A 2006 report by NFER for DfES, "Pupil Choices at Key Stage 3: A Literature Review", stated that –

According to current quantitative research being conducted by the NFER on behalf of

<sup>1</sup> Against this background, the Task Force supports plans to develop a new qualification for Careers Coordinators. We do, too.

the Engineering Technology Board (ETB), 91 per cent of Year 9 pupils ... chose a subject because they liked it or found it enjoyable.<sup>1</sup>

However, pupils only study certain subjects during Key Stage 3. If enjoyment of subjects studied during KS3 guides decisions about options for KS4, young people risk ruling out subjects which they have not yet experienced. We therefore believe that students should be exposed to possible future options and careers throughout their time at school, and not just as they prepare to leave. This should include short taster courses during KS3, visits to colleges, training providers and universities, and opportunities to meet people aged 16-24 to find out what they are doing, why, and what they think of their learning.

It is also important to involve employers in this. It is not unusual for the police and fire service to visit infant and primary schools; there may also be visits by (or to) theatre companies and other artists. However, younger children are not introduced to many occupations at primary school, and visits dry up almost completely in Key Stage 3. There should be a new emphasis on providing opportunities for this to happen through visits, guests in school or business engagement in the curriculum.

<sup>1</sup> By the same token, many young people drop subjects they did not enjoy (and found difficult) at KS3, such as modern foreign languages.

## What is the appropriate target audience for a vocational education offer, and in particular from what age is it appropriate for young people to be engaging in vocational education?

We believe all young people should be able to experience vocational education even before the age of 14. This is not because we believe they should be made to choose career pathways at such an early age (though in fact, some already do). Rather, we believe taster courses, visits and opportunities to meet people from many walks of life will help young people make informed choices at 14. In our "Six Steps to Change Manifesto", Step 1 calls for:

A broad curriculum up to age 14 with opportunities to develop life skills and experience a range of future options.

Step 2 recommends that all young people should have an individual profile of attainment, skills and aptitudes, which would be used by young people, parents and teachers to guide choices at 14 and beyond. This leads to Step 3:

At 14 all students, in addition to continuing a broad curriculum, including English, maths and science, would be supported in choosing a pathway matched to their interests and abilities, each with a different balance of theoretical and practical learning.

This is not about dividing young people into academic sheep and vocational goats. There is ample evidence that practical and vocational education re-engages the interest of many young people who see the traditional, "academic" curriculum as boring and irrelevant<sup>2</sup>. However, we are convinced that very many young people capable of good GCSE results also enjoy and could benefit from practical and vocational learning as part of a broad curriculum offer<sup>3</sup>, just as young

<sup>2</sup> See, for example, "90% Participation Project: Desk Research", Edcoms for DfES, 2007

people who have already set their sights on a vocational route benefit from continuing to study maths, English, science and so on.

Step 4 concerns teaching of vocational courses in specialist facilities or institutions, and by appropriately experienced staff – points we have covered already. Step 5 recommends that

At 16 students would choose to specialise within their pathway, change to another pathway or enter employment with training.

Students who take (quality assured) vocational courses at 14 will gain knowledge and skills in their chosen sector which would allow them to choose a more specialist route, such as an Apprenticeship. Others will move on to general qualifications, including A levels, or a further blend of academic and vocational options. In either case, skills and knowledge gained by taking vocational options during Key Stage 4 will be of lasting value, not least in relation to what the CBI and UKCES call employability skills including (for example) self-management, solving problems and working with others in a team and communicating well in the team.

Vocational options also help develop Personal Learning and Thinking Skills, which overlap with employability skills.

<sup>3</sup> Edge has commissioned the University of Exeter to find out whether practical and vocational learning at school has any positive or negative effect on students'

- motivation;
- levels of achievement;
- choice of post-16 learning routes;
- awareness of (and attitudes towards) a variety of career options

We specifically asked the research team (Professor William Richardson and Dr Sue Sing) to examine the impact of practical and vocational learning on young people aged 11-16 deemed to be "academically able", because – as far as we are aware – this has not been explored before. The full report is due to be published in December, but early analysis of the research supports the following, very clear conclusions:

- High ability pupils of all kinds valued strongly physical, expressive and experiment-based learning and placed these well above more analytical forms of learning.
- A very large majority considered that learning with practical elements was more, or just as important as mandatory subjects such as English and maths.

## How can we improve progression from vocational education to positive destinations (work, Apprenticeships, FE, HE)?

If vocational and academic options are blended together in the way we advocate here, young people will be better prepared for progression to work, Apprenticeships, FE and HE. This applies to all young people, whether their aims at 16 and 18 are essentially academic or essentially vocational. However, we would make three additional points.

First, there are clear lessons to be learned from elsewhere – not least, the United States of America. For example, Career Academies have a proven track record of success. They are a type of school within a school, set up to prepare high school students for college via career-related learning through "Programs of Study". Like Diplomas in England, these are linked to sectors of the economy such as health care, business and finance, communications media, and transportation technology. Career Academies have been shown to be effective in improving students' performance. Furthermore, higher grades have translated into improved rates of progression to college and, ultimately, university. We recommend learning from this experience and applying lessons learned to the reform of 14-19 vocational education in England.

Further examples of practice around the world are explored in research for the Edge Foundation – "Mind the Gap" – and the Baker Dearing Educational Foundation.

Second, the last of our Six Steps to Change says that –

Beyond 18, students should have the opportunity to study at degree level in a centre of vocational excellence endorsed by employers.

We have chosen these words with care: "study at degree level" includes, but is not restricted to studying for a degree. There must be clear pathways that encourage young people to pursue high-level vocational pathways at 18 and beyond. Higher Apprenticeships have been piloted with great success in aeronautical engineering, for example. The key is a commitment to excellence.

In this context, therefore, we warmly welcome the Coalition Government's proposals for new centres of higher education dedicated to meeting the need for higher-level skills and knowledge in areas such as science, engineering and technology.

Thirdly – and linked with this – we commend the Skills Commission report, "Progression through Apprenticeships", which includes a number of recommendations for improving progression into, through and beyond apprenticeships. Some concern issues already mentioned here, such as impartial information, advice and guidance and improving teachers' understanding of apprenticeships. The report also stresses the importance of employer involvement in education, as a way of helping young people appreciate how skills and knowledge are used in the workplace, and to develop employability skills such as teamwork.

The Skills Commission further recommended a "right to resume":

If an apprentice is unable to progress directly onto an advanced apprenticeship because the required supervisory role is not available to them, the apprentice should be granted a 'right to resume' training as an advanced apprentice when such a role does become available.

This is an important principle which could be extended to other forms of vocational progression.

As recommended by the Skills Commission, Apprentices (and other people who have taken vocational qualifications) should have access to bridging courses which develop additional skills, such as essay writing, enabling them to progress to higher education. Progression will also be made easier by improving access to part-time programmes of study in further and higher education. This was recommended by the Skills Commission, and we welcome the government's proposal to move in this direction following publication of Lord Browne's Independent Review of Higher Education Funding and Student Finance.

## Annex 1: What is "vocational education"?

The term "14-19 vocational education" means different things to different people. According to Ofqual,

A qualification is vocational if its primary purpose is to provide learners with knowledge, skills and/or competence directly relevant to work or employment within one or more sectors or for specific occupations and/or provide enhanced labour market opportunities for those currently in work or employment.

However, this covers a wide spectrum of education and qualifications. At one end is vocational training and education which equips people with the skills and knowledge needed to do a particular job. Examples include work-based training such as apprenticeships and job-specific further education courses. In order to achieve vocational qualifications (eg NVQs), candidates have to demonstrate that they have mastered skills: on its own, knowledge is not enough.

In the context of 14-19 reforms, however, the word "vocational" has taken on a second, looser meaning. Young people studying for Diplomas, OCR Nationals and Edexcel BTEC Firsts learn about the world of work, but do not develop the full range of skills needed to do a particular job. Their curriculum is essentially *work-related* rather than *work-based*, though it might include work experience placements. They may also carry out some projects which involve making and doing, or which develop their problem-solving skills and ability to work as part of a team. Young people typically study for a Diploma (or BTEC, or OCR National) as well as – not instead of – "academic" qualifications such as GCSEs and A levels.

In the United States, this type of provision is described as Career and Technical Education (sometimes shortened to Career-Technical Education, or CTE). Links to further information about CTE and US "Programmes of Study" can be found at Annex 2.

Thirdly, the development of generic employability skills might be described as vocational. The UKCES suggests that individuals with employability skills should be able to:

- demonstrate self-management

- solve problems
- work with others in a team and communicate well in the team
- understand the business environment
- use numbers effectively
- use language effectively
- use IT effectively
- have a positive approach to work.

Of course, these skills and attributes are useful in many contexts, not just the world of work. Indeed, there are some important similarities with Personal Learning and Thinking Skills (PLTS), which help young people become –

- independent enquirers
- creative thinkers
- reflective learners
- team workers
- self-managers
- effective participants.

Enterprise education fits into the same broad category. According to the QCDA,

Enterprise education encourages young people to be innovative, to take and manage risks, and to develop determination and drive. Enterprise education is not about a body of knowledge - it is about developing young people's ability to embrace change positively, show initiative, take responsibility and manage themselves. Developing enterprising and entrepreneurial qualities will benefit young people in their personal and working lives, and the communities in which they live.

All young people are entitled to work-related learning during Key Stage 4. This typically includes a work experience placement. Beyond that, practice varies widely between schools and may include enterprise competitions, mock interviews, workplace visits and business/employer mentoring.

For young people following Foundation Learning programmes, the development of personal attributes forms a central part of the curriculum. As the QCDA puts it, "Foundation Learning programmes combine subject or vocational learning with functional skills and personal and social development".

ASDAN's Achievement Awards and AQA's Certificates in Enterprise and Employability are examples of qualifications which recognise preparation for work. Although they could be taken by any student, these qualifications are typically taken by young people who are at risk of becoming disengaged, or who are not ready for full GCSE/level 2 programmes.

We believe the review of 14-19 vocational education should cover all these broad categories. We also believe we need a new, clear lexicon to describe different types of provision. In our view, Apprenticeships and other programmes which develop skills and knowledge for a specific job are *vocational*. Work-related learning is *practical* and/or *technical*. Employability, enterprise and personal learning and thinking skills are *life skills*.

## The blurred line between academic and vocational

Again, the word "academic" means different things to different people, and varies according to the context in which it is used. The Secretary of State is keen to promote a subject-based curriculum through which young people acquire knowledge about English literature, maths, history, foreign languages and so on. On the face of it, this is a purely academic curriculum. However, some knowledge becomes meaningful only when applied to a context, problem or situation. The plays of Shakespeare come to life when performed. Chemical reactions can be described, but are more likely to be understood and remembered when observed. French and German need to be spoken. None of these examples is necessarily "vocational", but the boundaries become blurred when learning is related to the world of work – to the way a play is produced in the commercial theatre, the way a manufacturer exploits a chemical reaction, or the use of languages in international trade, for example.

In short, just as the word "vocational" can be used in a range of contexts, the dividing line between "academic" and "vocational" education is blurred, to say the least. Attempts to impose a rigid dividing line ignore the reality that all young people need both to acquire knowledge, and to learn how it can be used.

## Annex 2: further reading

### Edge-funded research

"Mind the Gap – Research and Reality in Practical and Vocational Education", Bill Lucas, Guy Claxton and Rob Webster, Centre for Real World Learning, University of Winchester, January 2010 - <http://www.edge.co.uk/research/mind-the-gap>

*This report assesses the current state of practical and vocational education in the UK based on international comparisons, and considers the potential for measuring the impact of practical learning. The findings form the basis for suggestions on how to further increase the status and esteem of practical education.*

"Bodies of Knowledge", Guy Claxton, Bill Lucas and Rob Webster, Centre for Real World Learning, University of Winchester, January 2010 -

<http://www.edge.co.uk/research/bodies-of-knowledge>

*This report explores new evidence from neuroscience and cognitive science to suggest that all forms of learning require a single set of habits and frames of mind, and to challenge old concepts of the separation of "mind" and "body".*

"VQ Day 2010 Research Report", City & Guilds Centre for Skills Development, June 2010 - <http://www.edge.co.uk/research/vq-day-2010-research-report>

"Six steps to change", Edge 2000 - <http://www.edge.co.uk/media/uploads/Downloadable/22d18516-01c9-4a2b-aa2a-3fc10846dcc0.pdf>

### Skills Commission

"Teacher training in vocational education", <http://www.publications.parliament.uk/pa/cm200910/cmselect/cmchilsch/275/275i.pdf>

*This Inquiry set out to examine whether teachers are being trained with the skills to deliver 14-19 vocational education.*

"Progression through apprenticeships", March 2009 - [http://www.policyconnect.org.uk/fckimages/Skills%20Commission%20-%20Progression%20through%20apprenticeships\(1\).pdf](http://www.policyconnect.org.uk/fckimages/Skills%20Commission%20-%20Progression%20through%20apprenticeships(1).pdf)

*This Inquiry investigated progression into, through and beyond apprenticeships, including progression to higher level skills and higher education.*

"Inspiration and aspiration" - <http://www.policyconnect.org.uk/fckimages/Inspiration%20and%20Aspiration.pdf>

*This Inquiry looked into the changes needed to ensure that Information, Advice & Guidance (IAG) services are relevant and useful to people in the future.*

### Career-Technical Education and Programmes of Study in the USA

"From Vocational Education to Career-Technical Education: A Capsule History and Summary of Research", David Stern - <http://www.edutopia.org/stw-career-technical-education-research-roundup#stern>

*This note summarises the transition from vocational education to career-technical education in US high schools.*

"Career Academies: A proven strategy to prepare high school students for college and careers", University of California at Berkeley, February 2010 -

[http://casn.berkeley.edu/resource\\_files/Proven\\_Strategy\\_2-25-1010-03-12-04-27-01.pdf](http://casn.berkeley.edu/resource_files/Proven_Strategy_2-25-1010-03-12-04-27-01.pdf)

*This report concludes that career academies, after more than four decades of development and three decades of evaluation, have been found by a conclusive random assignment study to be effective in improving outcomes for students during and after high school.*

"Programs of Study: Year 2 Joint Technical Report", National Research Centre for Career and Technical Education, February 2010 - [http://136.165.122.102/UserFiles/File/Tech\\_Reports/POS\\_Joint\\_Technical\\_Report\\_Jan\\_2010.pdf](http://136.165.122.102/UserFiles/File/Tech_Reports/POS_Joint_Technical_Report_Jan_2010.pdf)

*This is a progress report on three studies being conducted by the National Research Center for Career and Technical Education (NRCCTE), following the implementation of Programs of Study, introduced following the 2006 reauthorisation of federal legislation for career and technical education.*

### Others

"English technical and vocational education in historical and comparative perspective: Considerations for University Technical Colleges", William Richardson (University of Exeter) and Susanne Wiborg (Institute of Education) for the Baker Dearing Educational Trust, October 2010 - <http://www.edge.co.uk/research/considerations-for-university-technical-colleges>

*This is a review of the history of technical education in Britain since the 19<sup>th</sup> century, drawing comparisons with Germany, the USA, Japan and Sweden.*

Annual Qualifications Market Report, Ofqual, March 2010 - <http://www.ofqual.gov.uk/files/2010-03-19-Annual-Market-Report.pdf>

"The Key Stage 4 curriculum: increased flexibility and work-related learning", Ofsted, 2007 - <http://www.ofsted.gov.uk/Ofsted-home/Publications-and-research/Browse-all-by/Documents-by-type/Thematic-reports/The-Key-Stage-4-curriculum-increased-flexibility-and-work-related-learning>

"The case for working with your hands", Matthew Crawford, Viking, April 2010

"Training of Teachers", House of Commons Children, Schools and Families Committee, Fourth Report of Session 2009-10, January 2010 - <http://www.publications.parliament.uk/pa/cm200910/cmselect/cmchilsch/275/275i.pdf>

"Towards a strong careers profession", Department for Education, October 2010 - <http://publications.education.gov.uk/eOrderingDownload/CPTF%20-%20External%20Report.pdf>

"90% Participation Project: Desk Research", Edcoms for DfES, 2007 - <http://www.dcsf.gov.uk/rsgateway/DB/RRP/u015176/index.shtml>

*This literature review was commissioned to inform the Department's aspiration to raise the participation of 17 year olds in education and training to 90% by 2015. It examines the attitudes and motivations of young people.*

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