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# Vocationalism - friend or foe to design & technology education

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## Introduction

The question mooted in the title of this chapter is not an easy one to answer. Trying to define what we mean by vocational education in the form of design & technology education is, as we shall see later, highly complex. However, we can define what it is not. It is not specific job training in the traditional apprenticeship sense. Thus, we might conclude that it exists primarily for the student rather than for the world of work. So design & technology occupies a unique position in schooling as it is about a different way of learning than is offered by either an academic curriculum or as training for a specific occupation. Whether this is a good thing or bad is open to debate, but in my view, design & technology education is often perceived to be a curriculum for those who are less intellectually capable of following an academic curriculum. These judgements are difficult to change in well-established cultural systems which have long valued academic qualifications as being, in some way, superior to vocational ones.

Before we take this debate any further however, it might be worth considering what your own views are on this right now, and, importantly, why you think that you hold those views. It is certainly the will of the Government that you should support the notion of vocationally based education. They are promoting the establishment of National Skills Academies which are, in their own words, to be:

*'Focused on vocational education and skills training, delivering to young people (16-19 years old)...[and] located in geographical areas of real disadvantage, and challenge the culture of educational under-attainment'*  
Read at: <http://www.dfes.gov.uk/publications/nsapropectus/>

Moreover, the current emphasis is on construction, financial services, food and drink and manufacturing, four areas considered by the Government to be major sectors of the economy. Do you support the Government on this? Do you think that children who are perceived to under-attain should follow a vocational curriculum which is guided by the needs of the economy? What might be the cause of under-attainment?

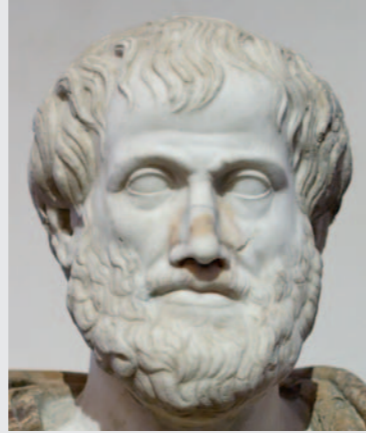
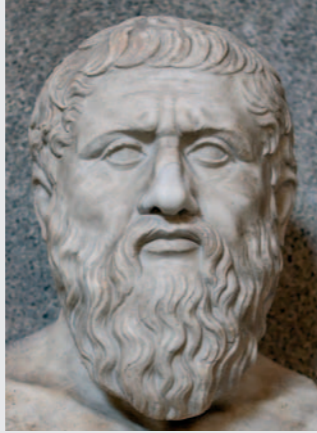
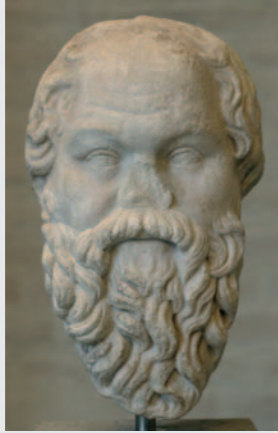


Given that the Government considers the sectors of construction, financial services, food and drink and manufacturing, to be important in terms of economic development, should the school curriculum be changed in line with this thinking?

01 02 03

Ancient philosophers who considered knowledgeable activity.

- 01 Socrates.
- 02 Plato.
- 03 Aristotle.



Suppose, for example, that a mother of two teenage brothers tells you that John is good with his hands but does not like reading, whereas Jack is clumsy, but has always got his head in a book. Does this suggest that John would be better to follow a vocationally orientated curriculum and Jack an academic one? Is John more academic than Jack? What indeed do we mean when we talk about vocational education and academic education? What is the purpose of such a distinction and should such distinctions even be made? These are the kinds of questions that I hope we can explore in this chapter.

I will start by considering what the perceived differences between academic and vocational education actually are. I will then look to history for some answers to the same set of questions. Finally, I will ask you, the reader, to consider what your own perceptions are in relation to design & technology education as a vocational subject, and whether they have changed in any way after having read this chapter.

### The brains or brawn argument

If you look it up in a dictionary you will find that 'vocational education' has a quite different meaning from the term 'vocation'. Vocation is usually defined as a sort of calling, usually in the religious, teaching or healing domains, whereas vocational education is usually defined as training for some practical

activity, usually related to industry, and having a stronger emphasis on the use of the body and hands than the use of the mind. This, I will argue, is especially the case when we consider design & technology education as taught in schools. Virtually everyone that I have ever spoken to about this contends that design & technology education is 'vocational', whereas the subject of English for example, is 'academic'. Interestingly, I always get lots of variation about what they mean by 'vocational education' when I ask! Moreover, I would also suggest that perceptions about the vocational education domain at school are more often associated with 'less able' children than with 'more able'. What do you think? And why do you think this should be the case? These perceptions have great potency.

What are the differences, if any, between vocational education and occupational education?

If you look at the personal qualities and skills required for various occupations in job advertisements, the language used tends to situate brains with one type of occupation and brawn with the other. For trades such as carpentry, plumbing or bricklaying, for example, we see the requirements for qualities and skills as:

- being physically fit;
- able to work with your hands;

- having a head for heights;
- having a good eye.

Whereas for what we might refer to as the professions, the qualities and skills are seen as:

- having an ability to solve (design) problems;
- having a logical mind;
- creative and artistic abilities;
- having a lively and enquiring mind.

It is clear that the former relate to the body and the latter to the mind. Moreover, the former are also associated with the vocational curriculum and the latter with the academic curriculum. Ironically, when vocational education is seen to take place within an academic base such as architecture, engineering or medicine, it is held in much higher esteem.

This is by no means a new debate. Socrates (470-399 BCE), his student Plato (428-347 BCE), and his student, in turn, Aristotle (384-322 BCE) all held the notion that there were two types of knowledgeable activity: *'Techné'*, which related more to the skills associated with the mechanical arts and fabrication, and *'Phronesis'* which characterises a person who knows how to live a virtuous life. It is acquired and deployed not in the making of any product separate from oneself, but rather in one's actions with one's fellow human beings. In Aristotle's own words: *'whilst making has an end other than itself, action cannot, for good action itself is its end'*.

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John Dewey, drawing from Aristotle, wrote: *'While training for the profession of learning is regarded as a type of culture, as a liberal education, that of a mechanic, a musician, a lawyer, a doctor, a farmer, a merchant, or railroad manager is regarded as purely technical and professional. The result is that which we see about us everywhere - the division into "cultured" people and "workers", the separation of theory and practice'*. Can design & technology education engage in issues relating to culture?

Is it these guys therefore who started this debate? Are they responsible for the academic versus vocational divide? Plato certainly advocated a tripartite form of society which comprised first, those who were workers like labourers, carpenters and plumbers etc. Second came the warriors. They were adventurous, strong and brave and would protect society by belonging to what we now refer to as the armed forces. Finally, there were those who governed or ruled. These were much fewer in number and had to be intelligent, rational and self-controlled.



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04 René Descartes.  
05 The brains in a vat problem.  
(Illustration © Simon Minter.)



06 07 08 09 10

06 Are you able to distinguish by looking alone if they are 'vocationally' or 'academically' orientated?  
(Image 08 © Jimena Allasia.)



They mostly came from the aristocracy or wealthy families. Already we can begin to see a distinction emerging between Plato's first two classes whose members followed more practical activities with an emphasis on using the body and an elite ruling class whose members used their minds in order to cultivate society.

Whilst this distinction between the mind and body has been a subject of debate ever since Plato, it is the French philosopher René Descartes who, in the seventeenth century, gave us the famous '*cogito ergo sum*' - '*I think therefore I am*'. Essentially, Descartes made the claim that the mind was actually separate from the body. They were, for him, two distinct entities. Whilst a great number of modern philosophers now dispute this claim, the jury is still out for a significant number of others. One modern American philosopher called Hilary Putnam has offered an interesting scenario to explore this notion which I have adapted for this chapter. It is called the brains in a vat problem. It assumes that the mind resides in the brain.

Let us suppose that technology has advanced to the stage where we have discovered a completely safe way to remove a human brain from its skull, and, by using the latest micro technology, we can use the equivalent of 'blue tooth' technology to allow the brain to communicate with the body, and in turn, the body to communicate with the brain whilst both are actually separated.

This enables the body to move around as it did before the separation, whilst the brain is stored in a vat containing nutrients which are able to keep it alive and functioning. Essentially, nothing has changed except that the brain is now connected to the central nervous system and vice versa, remotely, by radio waves. This is literally separating the mind, or at least the brain, which might be considered to be the operating system for the mind, from the body, as Descartes argued. This techno-fantasy allows us to consider the duality argument in interesting ways. For example, if we are also able to communicate with the brain in the vat through the use of a computer system, without the body being present in the same place, could we teach the brain alone? Could we teach it 'academic' subjects like English or mathematics without the involvement of the body? Could we teach it the practical skills required for the fabrication of an artefact without the body being present? Conversely could we teach the body practical skills or activities without the involvement of the brain? If not, what are the implications for the vocational versus academic education debate?

The answer to this argument is that one cannot function without the other. The mind cannot actually operate without the body and vice versa. The mind needs the body's sense receptors to engage with the world and the body needs the mind to interpret those senses. This is the way that our perception of the

world works. We sense the world through our bodies (seeing, hearing, touching etc.) and then we interpret what we sense. Interestingly the personal qualities and skills required by employers as mentioned before, like being good with your hands, or physically fit (body emphasis), as distinct from having a logical mind or being creative (brain emphasis), are beginning to be combined to some extent, with more emphasis being given, by organisations such as the CITB (Construction Industry Training Board) and CBI (Confederation of British Industry), for a combination of mind and body requirements such as:

- interpersonal skills;
- communication skills;
- entrepreneurial skills;
- flexibility of learning;
- problem-solving skills;
- critical abilities.

These qualities and skills are more generic and can be developed equally across the academic/vocational, mind/body divide.

Another reason that I have discussed this mind/body argument is that whilst I believe there to be a widely held perception that 'bright' children will predominantly follow academic subjects where the emphasis is on the development of the mind, and less able children will orientate towards 'vocational education' where the emphasis is on practical activity, I also contend that there may be a correlation between those children perceived

to be academic and their social status. In your experience, how many children from privileged middle-class backgrounds aspire to become carpenters or plumbers or sheet metal workers? How many from less privileged backgrounds aspire to become lawyers or doctors or architects? Why do you think this is? Let's see if looking again at history can shed any more light on this.

**G** Look at the photographs of children. Are you able to distinguish by looking alone if they are 'vocationally' or 'academically' orientated? What other information would you need to make this kind of judgement?

### Some histories of education

**In the time of the hunter gatherers**  
It was about 2.6 million years ago that hunter gatherers roamed the world in search of food and shelter. Our technological heritage starts around this time. There were no distinct vocations or occupations at that time. Boys tended to follow their fathers and girls their mothers, in terms of work. The economy was based upon small communities working together. Interestingly the Sami people in northern Scandinavia, also known as the Lapps, had, until fairly recently, a similar nomadic existence where they carved out

10 Medieval tradesfolk, David Gentle's Charing Cross underground station mural.

(Photograph by Michael Greifeneder, <http://creativecommons.org/licenses/by-sa/2.0/>)



11 Children at work. & 12



a living from fishing, hunting and reindeer herding. They lived and existed in a natural economy which changed very little over the years. Survival in these types of communities was based upon skills being handed down from father to son, mother to daughter. This type of existence had no formal education, academic or vocational. There was thus no academic/vocational divide.

### In medieval times

The long transition from hunter gatherers to city states and modernism, however, sees the emergence, in England, of formal schooling occurring in the medieval period. The medieval period covers a very long time which may be seen as starting at the end of the Roman occupation, and finishing around the beginning of the Renaissance. It was the influence of the Romans that shaped the curriculum which had essentially three components: elementary learning (reading, writing and arithmetic), grammar (correct composition of literary texts), and rhetoric (the theory and practice of oratory). Most, if not all of the texts during the first half of the medieval period were in Latin. Schools were mostly fee-paying and so elitist. The lower classes, peasants and the like, were not encouraged to go to school. Records indicate that in 1391, a petition was put forward to the House of Commons, by an assembly of the gentry and prosperous burgesses, asking the King to forbid serfs from putting their children in school. They felt that it would breach the traditional social order.

They did not want the lower orders to rise to wealth by means of education.

Attendance at school was based upon the available resources (schools, teachers, texts etc.) and personal ambition. If you wanted to follow a certain trade or business that required literacy and numeracy (vocational education), elementary education followed by a couple of years of grammar would be sufficient. However, if you wanted to take holy orders, or attend university or undertake a legal education in London (academic education), a much longer period studying grammar and rhetoric was required.

Given that education was elitist, poverty had an impact on progression. Schooling was not always a continuous process and was often interrupted by poverty. Records indicate, for example, one William Green who was the son of a 'husbandman', or peasant, in Lincolnshire who, during the 1510s, spent two years at the free grammar school at Wainfleet, before leaving to work with his father for five or six years as a farmer and sawyer (someone who saws wood for a living). Later he managed to attend Boston school for two more years by living with his aunt and doing part-time work. However, when he finally got to Cambridge University he found it almost impossible to survive on a combination of study, work, and poor relief. School education in this period then was clearly academic in delivery and formed the basis of our grammar schools today.

Education for trades-based occupations was not the remit of schools but tended to be in the form of apprenticeships and it is during the later medieval period that we see the formation of trades Guilds.

The medieval grammar school curriculum did have a practical or vocational element, but this was restricted to the crafts or trades that involved writing, reading and record-keeping such as required for example by clerks. Skills for trades involving bodily effort, such as for masons, wheelwrights or blacksmiths were not taught at school. In 1402 for example, Sir John Depeden left twenty pounds for the education of a boy with the proviso that when he could read or write, he should be sent to London to train as a fishmonger, grocer or mercer. The academic bit was done at school whilst the vocational bit was carried out on the job.



In medieval times, education for the trades was not taught at school. Trades were learned on the job, so to speak. This follows the rationale for modern apprenticeships. Should vocational education be learned on the job, or can it be taught in subjects like design & technology?

### In response to the industrial revolution

Following on from the medieval period we enter the period most associated with the beginnings of mass production: the industrial revolution. This heralded the beginning of a state-funded educational system for the working classes. In order to operate the new factory machinery, it was deemed necessary to educate workers in the basics of reading, writing and arithmetic to enable them to understand the instructions for operating the new and emerging machinery. Private schools continued to teach an academically orientated curriculum while the new state funded schools continued to have a curriculum more geared to serving the needs of industry.



The Industrial Revolution saw a clear and distinct division of labour where children from poor families were used as cheap labour for the factories. Do you agree that in today's society, schools should accommodate a similar division, based upon a young person's ability to pass examinations?

### In the first half of the 20th century

A great number of changes in UK systems of education took place between the period





(Image from Special  
Collections Research  
Center, Morris Library,  
Southern Illinois  
University Carbondale.)

(Image from Paulo  
Freire Cooperation  
in Europe.)



of the Industrial Revolution and the second world war. Compulsory education took hold, segregated schools were introduced, and, in 1944, the Butler Education Act made secondary education free for all pupils. However, it also introduced the '11 plus' examination. This determined what schools in the new 'tripartite' system pupils would attend. Depending upon their performance in the '11 plus' examination, taken in the last year of primary school, pupils would either attend a Grammar school, a Technical school or a Secondary Modern school. I failed the Scottish equivalent to the '11 plus' and attended a Secondary Modern school where the emphasis was on practical subjects. I distinctly remember having to stand on the opposite side of the road from my long time primary school friend each morning. He had passed his '11 plus' and had to get a bus to the equivalent of a Grammar school in Hamilton. I had to get the bus to Uddingston where the secondary modern was, literally and symbolically, in the opposite direction.

However, in the post war period, state-funded school education, which was now the right of all children, began to follow a more prescriptive and standardised curriculum which did not, as it was later discovered, meet all children's needs.

**In the second half of the 20th century**  
A major change in thinking came about in 1963 when a chap called Newsom was

commissioned to prepare a report entitled "Half our Future". The report recommended that the school curriculum should be made more relevant to the needs of pupils of differing abilities. Newsom argued that: *'...all schools should provide a choice of programmes, including a range of courses broadly related to occupational interests, for pupils in the fourth and fifth years of a five year course'*. In particular, students in the lower streams (again in the main from the working classes) were seen to require 'non-academic' courses to help prepare them for their life outside school - this 'need' being seen by Newsom as reflecting the 'reality' of working-class adult life. Does this constitute 'vocational' education, and, is [was] design & technology the perfect subject domain for its delivery? Indeed, what, if anything, has changed since 1963 (or 300 BCE for that matter)?

The link between the 'less able' or 'lower order' students and the needs of industry was further reinforced in 1976 when the 'Great Debate' took place at Ruskin College. The then Prime Minister, James Callaghan argued: *'It is vital to Britain's economic recovery and standard of living that the performance of the manufacturing industry is improved and that the whole range of government policies, including education, contribute as much as possible to improving industrial performance and thereby increasing national wealth'*.



Join in the Great Debate.  
Do you agree with Callaghan?  
How can school education  
contribute to national  
wealth today?

The Great Debate followed on from a period which saw the introduction, and in 1965, the beginning of a Government dictate, that Local Authorities should be compelled to start the conversion towards a universal comprehensive education system. This was due, in the main, to dissatisfaction with the tripartite system based upon academic ability, which was clearly not working in a lot of areas around England, particularly less affluent areas. Significantly, it was when Margaret Thatcher became Secretary of State for Education in 1970, that she ended the compulsion for Local Authorities to convert to Comprehensive systems although a great many schools were comprehensive by that time. However, it was the introduction of the comprehensive system that influenced Callaghan in his 'Great Debate' to argue for, amongst other things, a core curriculum and the use of more informal teaching methods (a lot of teachers for example, in all sectors, were still wearing gowns, the practice of which was more associated with Grammar schools).

This thinking tended to coincide with, or possibly initiate, the new liberal principles of progressive child-centred education which

concentrated upon education for citizenship rather than for the needs of industry which had dominated since the post war period (and before). These principles were commonly held to be the root cause of the breakdown in discipline in schools which resulted in, amongst other things, a lack of basic skill procurement. This period therefore helped pave the way for what was to become known as 'new vocationalism', which was developed in the 1980s and which can partly be seen as a reaction against liberal and progressive education.

Modern critics of technology education as skill production in the interests of industry, such as Antonio Gramsci, Paulo Freire and John Dewey, also opposed the separation of 'academic' and 'vocational' education, based upon differentiation on the basis of 'merit'. These arguments, which continue to the present day, are made on the grounds that the whole process is, in effect, still one of selection based upon class. This model, it is argued, jeopardises a child's future as a result of early and narrow professional or trades specialisation which instructs for a specific occupation, and which is lacking in 'general ideas', a 'general culture' and a 'soul', while being in possession only of an 'infallible eye' and a 'firm hand' (the emphasis on body over mind). These concerns, about narrow vocational specialisation at an early age in fact anticipate much of the contemporary criticism of the 'new vocationalism'.

Notwithstanding, however, the general trend appears to have been economically driven. Since Callaghan's 'Great Debate' in the 70s, the trend towards vocationalism, particularly in the area of design & technology education, appears to have gained momentum.

### The introduction of the National Curriculum

The 1988 Education Reform Act legislated for the following:

*'For the first time the Government laid down a National Curriculum which required pupils to study mathematics, English, science, history, geography, technology, music, art and physical education, plus a foreign language for 11-16 year old pupils. This was intended to ensure that pupils concentrated on what the Government saw as key subject areas'.*



Why do you think the government decided on subjects as the organising principle for the National Curriculum?

What other organising principle might be used?

This act encouraged the establishment of what were to become 'City Technology Colleges', inner city institutions which would have a specialisation in technology education for the 11-18 age range. Significantly, they were to be sponsored by private industry and not

by state funding. Moreover, they would be independent of local Education Authorities and would compete with existing state schools for pupils.



To what extent would an industry-dictated curriculum be in the best interests of pupils?

A number of other initiatives occurred around the same time. The Technical and Vocational Education Initiative (TVEI) for example started as a pilot scheme in 1983. This was designed to run alongside the conventional curriculum for 14-18 year olds and had to include work experience. It was rolled out to all schools in 1986 and later extended to include sixth form and tertiary education. The rationale behind this initiative was to give a more formal and direct understanding of the workplace and the economy in order to produce pupils who would be more likely to get jobs.

In 1985 a similar initiative to TVEI was instituted for those over 16 who were uncertain about what they wanted to do after school. The Certificate for Pre-Vocational Education (CPVE) taught practical skills and, whilst open to all, tended to be taken by those who were considered to be less 'academically' able. Whilst it was not considered to be a great success it was the precursor to other vocationally orientated qualifications such as GNVQs and NVOs.

It was in 1986 that the National Council for Vocational Qualifications was set up to introduce standardised vocational qualifications which were specifically orientated to particular occupations. About 170 National Vocational Qualifications (NVOs) were in place by 1990 and more were being added every year. These NVOs were designed to reward particular achievement through the demonstration of 'competencies'. They had four levels ranging from level 1, roughly equivalent to GCSEs, to level 4, roughly equivalent to postgraduate level of study. In 1994 the NVOs were replaced by General National Vocational Qualifications (GNVQs) which were intended to offer alternative routes from the 'academic' routes associated with 'A' levels.

The academic versus vocational divide saw another significant change which was introduced into the school curriculum in 1988. It combined the 'O' levels, which were considered to be more orientated towards the academically gifted, and the Certificate of Secondary Education which was for students judged to be less academically able. These merged to become a single General Certificate of Secondary Education (GCSEs).

### And the situation today

Former Prime Minister Tony Blair has been consistent in his support for vocational education. He believed that school education should be divided into vocational and academic. In his last Labour Party Conference

(2006) he stated his desire for: *'A society where we put the same commitment to quality vocational skills as we do academic education, with new vocational courses at school'.* Taken from his speech at the conference and read at: [http://news.bbc.co.uk/1/hi/uk\\_politics/3697434.stm](http://news.bbc.co.uk/1/hi/uk_politics/3697434.stm)

This clearly indicates an education model orientated towards the economic needs of the State and industry.

The most recent innovations include the introduction of specialised diploma development partnerships (DDPs) which consist of representatives from employer groups, further and higher education institutions, awarding bodies and schools. These diplomas have a very clear link with industry as described by the Sector Skills Development Agency who describe the four key goals of this initiative are:

- to reduce skills gaps and shortages;
- to improve productivity, business and public service performance;
- to increase opportunities to boost the skills and productivity of everyone in the sector's workforce;
- to improve learning supply including apprenticeships, higher education and National Occupational Standards (NOS).

You can find more details of the specialised diplomas at [http://www.qca.org.uk/qca\\_10325.aspx](http://www.qca.org.uk/qca_10325.aspx)

Once again it becomes apparent that the Government is making a clear link between school-based vocational education and industry. Moreover, the emphasis is on the needs of industry at the time. These diplomas form the bulwark of the new Skills Academies mentioned earlier in this chapter.

Under this model, design & technology education is seen to be largely concerned with promoting economic growth through concentrating on improving skills and the workforce rather than being about the promotion of equality and opportunity.

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Aldous Huxley, just over 75 years ago, painted a rather dystopian view of a 'brave new world' in his seminal work of the same title. He suggested then, that Big Government was able to genetically standardise large sectors of the population into workers, soldiers etc. To what extent do you think that the vocationalisation of the curriculum as described above is a psychological, as distinct from a genetically-modified version of the same thing?

In other words, to what extent is Government obliged to continually supply industry with a standardised workforce in the interests of the economy?

### Implications for design & technology education

If schools are able to provide diplomas which have a clear and distinct relationship with the needs of industry, in other words dedicated vocational, or more correctly stated, occupational qualifications, what then are the implications for design & technology education? If you believe that design & technology education is vocational, then to what specific vocations or occupations is it allied? What subjects will pupils who are not considered 'academic' choose given these new options and why might they be motivated to do so?

Their choices include:

- taking a specialised diploma leading to a specific career which has been identified as belonging to a skills gap shortage, so a good chance of employment;
- attending a skills academy which gives the same, or possibly more benefits as described above;
- choosing to study design & technology.

If we continue to argue that design & technology is vocational, and cannot demonstrate a clear and obvious link with specific industries, pupils will be more inclined, I would argue, to choose the new occupational skills routes. They clearly offer pupils a more obvious pathway to a job at the end of the day. We need then, to follow one of two routes. If we believe that design & technology education is vocational, we need to establish clear and obvious links with specific industries, and these links should be more appealing than the ones offered by the skills academies if design & technology is making a claim on their ground.

The former view situates education, and particularly vocational education, as serving the interests of the economy and so not about Aristotle's notion of education as 'Phronesis', the development of the virtuous citizen, which would constitute the second view. John Dewey, almost one hundred years ago, argued against the former view on the grounds that school education should not, under any circumstances, be vocational. I reproduce a quote in this respect. It is a long quote but a most significant one which is worthy of reproduction.

*'Its (technology education) right development will do more to make public education truly democratic than any other agency now under consideration. Its wrong treatment will as surely accentuate all undemocratic tendencies in our present situation, by fostering and strengthening class divisions*

*in school and out... Those who believe the continued existence of what they are pleased to call the "lower classes" or the "laboring classes" would naturally rejoice to have schools in which these "classes" would be segregated. And some employers of labor would doubtless rejoice to have schools, supported by public taxation, supply them with additional food for their mills... (Everyone else) should be united against every proposition, in whatever form advanced, to separate training of employees from training for citizenship, training of intelligence and character from training for narrow, industry efficiency'.*

G

The recent revision of the secondary curriculum is interesting as it has more than a hint of Phronesis. The aims of the curriculum are for all young people to become:

- Successful learners who enjoy learning, make progress and achieve;
- Confident individuals who are able to live safe, healthy and fulfilling lives;
- Responsible citizens who make a positive contribution to society.



To what extent do you think design & technology can contribute to these broad aims?  
You can visit this url to find out more:  
<http://curriculum.qca.org.uk/subjects> (accessed on 17.10.07)

### Reflecting upon your own views

Cast your mind back to when you were at school. I accept that this may be an easier exercise for some than for others. Nevertheless, try to transport yourself back to when you started secondary school. Did you have aspirations about what you wanted to do when you left school? If so, did you fulfil them? If not, why not? Who influenced your decision either way? My point is this: Did you favour some school subjects more than others? I suspect you did - why?

Let us now try this thought experiment in reverse. You are now a beginning teacher of design & technology education - why? Have you come into this straight from school and university? Have you come into this as a mature student? What influenced you to do this? Was it taking design & technology at school?

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When you were at school and you reached the stage when you were asked to choose the subjects you wanted to study, list the subjects that you actually did choose, and of those, highlight which ones you consider(ed) to be vocational. Now create another list indicating the various (or only) occupation(s) you have held. (Becoming a design & technology teacher might be your first occupation). Consider the two lists and try to remember whether you chose the 'vocational' subjects on your list because these subjects reflected most closely the occupation that you wanted to pursue. This is difficult because there will have been a multitude of other factors involved. Try to filter these out, however, and concentrate only on the correlation between the 'vocational'

school subject(s) chosen and your occupational aspirations at the time. Remember, this is not necessarily what you ended up actually doing, it is what you wanted to end up doing (a train driver, admiral or astronaut springs to mind for me).

I think that, for most of us, the task above will prove to be difficult, if not impossible. If I am honest in my own reflections, I cannot remember, at that time, having the slightest clue as to what occupation I wanted to pursue, but you may have different more specific recollections regarding your occupational aspirations.

This now opens up a number of pathways to consider in this reflection. If like me, you did not have much of a clue about what you wanted to 'be' when you left school, why did you choose the 'vocational' subjects that you did? Conversely, if you were clear about what you wanted to 'be', what were the defining aspects about the 'vocational' subject(s) that correlated with your chosen career path? Or, and for this reflection we need to slide down the snake all the way back to the beginning of our reasoning, it may be that you did not choose a 'vocational' subject at all!

### Conclusion

As a beginning design & technology teacher you should consider the reasons that you want your students to choose the subject. You should also think about the kind of student you might expect to choose your subject. This will affect the way that you perceive the subject and, in turn, the way you teach it.

For me, design & technology education is not vocational. To label it so only serves to confuse the participants who, for the most part, perceive vocational education as the passing on of manual skills from one generation to the next, where most people are educated 'on the job' in particular by experiencing some sort of formal or informal apprenticeship. Moreover, they are traditionally viewed in class terms. Design & technology is a school subject like any other school subject. It has academic components, it has practical components, experiential components and, one other particular, and in some senses ironic (considering the arguments presented in this paper) advantage over most other subjects in the curriculum: it actually has a relationship with the 'real' world outside school, a relationship which serves to *introduce* young people to the world of commerce and industry, but it must do this from a critical perspective, not a subservient one. This resonates with Dewey's notion of *'Democracy in Education'* where



he distinguishes between education *through* the various industries as against education *for* the various industries. This is crucially important. Students cannot be critical when they are completely immersed in it under the guise of vocationalism. I believe that design & technology education should be perceived in terms of a paradigm shift. That is, it is not some poor cousin to academic education which seeks to offer an alternative, less rich learning experience designed for the less able. It is rather, a rich and experiential way to learn which does not separate or categorise different forms of learning with different ability groups. It combines, cerebral *with* practical, mind *with* body, design *with* technology.

## Further reading

Huxley, A. (1932). "Brave New World". New York: Harper Collins.

Dewey, J. (1961). "Democracy and Education". Full text available at: <http://www.ilt.columbia.edu/Publications/dewey.html>

Carr, D. (1995). "The Dichotomy of Liberal Versus Vocational Education: Some Basic Conceptual Geography". Available at: [http://www.ed.uiuc.edu/EPS/PES-Yearbook/95\\_docs/carr.html](http://www.ed.uiuc.edu/EPS/PES-Yearbook/95_docs/carr.html)

Pitt, J. & Pavlova, M. (2001). 'Pedagogy in Transition: from Labour Training to Humanistic Technology Education in Russia'. In S. Webber & I. Liikanen, (Eds.). "Education and civic culture in post-communist countries". (pp. 231-247). Hampshire, UK: Palgrave.

Dakers, J. R. (2006). 'Towards a Philosophy for Technology Education' in J. R. Dakers, (Ed.), "Defining Technological Literacy: Towards an Epistemological Framework". (pp. 145-158). New York: Palgrave Macmillan.

## Related articles

"Journal of Career and Technical Education" (Formerly the "Journal of Vocational and Technical Education"). Available at <http://scholar.lib.vt.edu/ejournals/JCTE/>

"Journal of Industrial Teacher Education". Available at <http://scholar.lib.vt.edu/ejournals/JITE/>

"Career and Technical Education Research" (Formerly the "Journal of Vocational Educational Research"). Available at <http://scholar.lib.vt.edu/ejournals/CTER/>

## References

### BOOKS

References to medieval schools are taken from: Orme, N. (2006). "Medieval Schools: From Roman Britain to Renaissance England". USA, CT: Yale University Press.

References to several issues relating to post war vocational education are taken from: Haralambos, M. & Holborn, M. (1995). "Sociology: Themes and Perspectives". (Fourth Edition), London: Collins Educational.

### WEBSITES

Education and skills: <http://www.dfes.gov.uk/publications/nsapropectus/>

Tony Blair's speech: [http://news.bbc.co.uk/1/hi/uk\\_politics/3697434.stm](http://news.bbc.co.uk/1/hi/uk_politics/3697434.stm)

Sector Skills Development Agency: <http://www.ssda.org.uk/ssda/Default.aspx?page=2861>