



**University
Technical
Colleges**

An initiative of and promoted by the Baker Dearing Educational Trust

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Lord Dearing



“ Responses suggest that this is an idea whose time has come. It takes as a datum government policies since Leitch and its structural proposals for their delivery but offers the option of a form of response that is distinctively local and locally decided. ”

Lord Dearing CB, 1930-2009

Founder with Lord Baker of the Baker Dearing Educational Trust.

Letter from **Lord Baker**

In 2007 I rang up Ron Dearing whom I had first met when he was Chairman of the Post Office and I was the responsible Minister. Ron was the best Chairman the Post Office ever had and when he left I was only too glad that he accepted my offer to chair the body responsible for the qualifications of polytechnics. This started what was to be a 20 year involvement with Education working with both Governments. He came to have a profound influence on policy. We both agreed that what was missing from the English school system were good technical schools. We had them in the 1950s but they were closed – a huge mistake.

Our University Technical Colleges are different in three crucially important ways:

- They are 14-19 not 11-18 schools
- Each must be sponsored by a university or an FE college
- Employers will be involved from the start in shaping the curriculum.

We want to forge a partnership between practical and technical education and universities, FE Colleges and employers. We won the support of the then Education Minister, Lord Adonis and so Ron and I set about visiting universities and local authorities to sell the UTC idea. We were a great partnership and I wanted to ensure that our work would continue after Ron sadly passed away in 2009.

Kenneth A Baker





University Technical Colleges

The work of technicians and other highly skilled vocationally qualified people is vital to our economy. The education and training of these people, however, is often undervalued and under-resourced. In the 21st century we will need to train more right up to degree standard. This will start with the high level practical and academic education of the type which University Technical Colleges provide.

University Technical Colleges are a new concept in education. They offer 14-19 year olds the opportunity to take a highly regarded, technically-oriented course of study at a specialist college equipped to the highest standards. The Colleges are sponsored by a university often in partnership with a college of further education, offering clear progression routes into higher education or further learning in work.

Students start at the age of 14, combining hand and mind to learn in a very practical way, integrating academic requirements with the technical and practical elements. Under the same roof they study technical subjects alongside the basic GCSE subjects of English, mathematics, science and IT. They also take part in sport and are trained in financial practices and learn how to set up a business.

University Technical Colleges specialise in subjects which require specialised and modern equipment, for example: engineering; product design; health sciences; construction and building support services; land and environmental services; and food technology.

The sponsoring university and FE college work with the local authority and local employers. Together they decide the specialism of the University Technical College which reflects the university's areas of excellence and local employment priorities.

University Technical Colleges typically have between 500 and 800 students, a deliberately small size to foster loyalty and so that each student is known individually. The size also ensures that numbers in nearby schools are not unduly disturbed.

Involvement of universities

The Colleges are developed under the Academies programme which means that the sponsor, as a university and/or FE college, does not have to provide any of the funds required to build a new college or to refurbish an existing school nor does it have to contribute towards the running cost. The sponsor's commitment is to use its knowledge and expertise to support the University Technical College and engage in the College's activities through:

- curriculum development;
- helping in teaching;
- guiding suitably qualified students to foundation and full degrees.

The sponsor appoints the majority of the College's governors and key members of staff.

In addition, universities can contribute by:

- developing the curriculum to ensure that it reflects the most up to date methods and prepares students for higher education;
- encouraging university staff to assist in the teaching of areas in which they have particular expertise e.g. teaching mathematics for engineers;

- supporting and mentoring students particularly those who might be considering or have the ability to consider entry to higher education;
- allowing the College to use university specialist facilities to inform and inspire the students.

The active involvement of universities clearly demonstrates that the University Technical Colleges are prestigious institutions providing opportunities for progress in a variety of careers at all four levels of attainment.

University Technical Colleges are supported by the Department for Education. This provides consultancy assistance to the sponsor in preparing the documentation to secure the necessary financial approval for the building under the Academies Programme. Both the Coalition Government and Labour want to see the number of University Technical Colleges expand.

Each College establishes a close relationship with local businesses and also seeks the support of the local Chamber of Commerce, the branches of the relevant trades and professional associations, the local branches of the CBI, IoD and the trades unions.



Involvement of employers

Employers are encouraged to become formal co-sponsors or informal partners for the University Technical College. They are central to the development of the College.

There are opportunities for employers to:

- ensure that the choice of specialisms for the University Technical College matches the needs of the local economy;
- help the College to produce a cost effective and innovative experience for students, questioning normal education structures and practices if necessary;
- work with the other sponsors to determine the ethos of the College;
- help to construct the curriculum so that it reflects the future needs of the particular sector in which they work;
- assist in the appointment of staff with the required specialist knowledge and experience;
- support and mentor students throughout their time in the College;
- allow the College to use the employer's specialist facilities to inform and inspire the students to pursue a career or further study in their industry;
- provide high quality work placements.

Large, medium and small private sector employers as well as large public sector organisations such as hospitals all have a valuable part to play.

The Colleges fit in to the local pattern of education for secondary students and seek the cooperation and support of the local authority from the start. This ensures that existing nearby secondary schools do not feel unduly threatened by this new type of college. The local authority provides the site or a building.

Students and parents are informed by the local University Technical College about the opportunities they offer. Interested students apply straight to the College which takes in students of all abilities. Naturally it is important that the students are motivated by the particular specialisms offered by the College.

Why we need University Technical Colleges

The UK is about to embark on the building of new power stations, waste disposal plants, wind farms and more carbon-efficient houses, as well as developing a fast rail link. It is vital that there is the right degree of skills at all levels, from the mechanic and the plumber to the graduate engineer and the post-graduate nuclear researcher, to master all these opportunities.

International and historical evidence shows the necessity for good technical education for England to compete and lead the world.

Half of our young people do not obtain five good GCSEs including English and mathematics. The reasons are various but one is disengagement and lack of motivation. There are many young people who could achieve more but whose technical talents and predisposition are being neither utilised nor brought to fruition.



A Wednesday Morning in **University Technical Colleges**



Mark

“It’s very early days but my ambition is to work as a mechanic with a Formula One racing team”

Mark is 14 and moved four weeks ago from his previous comprehensive school to the College which specialises in engineering. He had been obtaining average grades at school but the only subject he really enjoyed was design and technology. His Connexions advisor suggested the University Technical College.

Since starting he has been learning some basic engineering skills which are now going to be put to the test. He is wearing the protective clothing he has been taught about and is ready to start today’s task. Using a manual as a guide he has to remove various parts of a car engine and decide which part needs to be replaced.



Louise

Louise, who is 15, joined the University Technical College a year ago. She had never done very well at school and was looking for a fresh start. She joined the College because she had always enjoyed working with her father on DIY jobs around the house. After her first term Louise found that she really enjoyed the practical work and was actually very good at it. She is now on a Young Apprenticeship and Wednesday is one of the two days she spends in work. Her current employer has just won a contract to refurbish some social housing. Today she is working with a qualified carpenter who is installing a kitchen. This is the type of job she thinks she might want to do when she leaves the College.

“I’m looking forward to being back in College tomorrow to practise making the joints I saw the carpenter use today”



Grace

Grace's University Technical College is attached to a university department of agriculture. Grace chose to go to the College when she was 14 because she had an interest in horses and liked animals. She took the Higher Diploma in Environmental and Land-based Industries. She really liked the practical work which motivated her to gain very good grades. She is now nearing the end of her Advanced Diploma.

Much to her surprise she developed a keen interest in plants and is doing her final extended project on different forms of organic pest control. Today she is working in the greenhouse to see how well her control plants are doing. Next year she is going to stay on at the University to do a degree in horticulture.

“ Four years ago I never dreamed this would have been possible ”



Iqbal

“ My tutor is helping me with the first draft of a business plan - real life business and it counts towards my qualification too ”

Iqbal joined the University Technical College three years ago when he was 14. He has obtained a Higher Diploma in Information Technology and is half-way through the Advanced Diploma. He spends a day a week working in a small local IT company which specialises in developing tailor-made software for small and medium-sized companies. Iqbal is also studying for a business qualification.

He is keen to set up his own company to construct and maintain websites for local businesses. Last week the College had arranged for him to meet the business advisor from a local bank to discuss how he should set about achieving his ambition.



Jason

Jason joined the College four months ago when he was 16. He had done well in his GCSEs but did not want to go down the traditional A-level route. He chose to come to the University Technical College because it had specialised facilities and he wanted to do an electrical apprenticeship.

He has really enjoyed his first few months. Today he is based with a large electrical contractor, helping an experienced electrician to fit trunking for computer cabling in the new media centre at the London Olympic site.

“ I’ll discuss today’s onsite work with my tutor back at College and I realise I’ll have to do more maths practice to get my qualification ”



Andrew

“ I have a passion for engineering and I knew this College has excellent facilities ”

Andrew always enjoyed school and gained very good grades. He was one of the cleverest students in his year. It surprised his school when he said that he was going to leave at 14 and go to a University Technical College which specialised in engineering. He was a little bit surprised at first that he had to learn craft skills as well as the work for his Diploma. Nevertheless he enjoyed it and now understands why that knowledge will make him a better engineer. Today he is preparing his personal statement for his university application. He has chosen universities that have a particularly practical and problem-solving approach.

He has lots that he can put into his statement: he is taking an additional mathematics qualification alongside his Diploma to make sure he can keep up at university; he led a winning team in the Young Entrepreneur competition; his team produced a range of tools which could be used by people with arthritis; he was also invited to local schools to talk about the College and had been mentoring younger students who were finding the College work difficult.





The Rt Hon Michael Gove MP

**Secretary of State for Education
Edge Lecture, 9 September 2010**

I'm absolutely clear that every child should have the option of beginning study for a craft or trade from the age of 14 but that this should be complemented by a base of core academic knowledge. And the new generation of University Technical Colleges will help secure this route. UTCs are a fantastic innovation.

Dame Ruth Silver

**Trustee, Baker Dearing Educational Trust
and former Principal of Lewisham College**

Tomorrow's challenges need tomorrow's solutions and University Technical Colleges have all the promise and every prospect of doing that. They offer young people the experience of a specialised vocational focus, amplified with a broad-based curriculum, connected with universities and to the real world of work. This is the opportunity they deserve and we need.

Amarjit Basi

Principal, Walsall FE College

As a college that is 'uniquely and proudly vocational' we are fully committed to the principle that young people of all abilities can realise their full potential from high quality work-related learning. The Black Country represents the birthplace of engineering. The emerging University Technical College in Walsall, whilst acknowledging the past, will most certainly focus on the skills of tomorrow.

The Rt Hon Lord Adonis

**Trustee of the Baker Dearing Educational Trust
and Director of the Institute for Government**

University Technical Colleges have the potential to transform the status and quality of technical education, offering brilliant opportunities to young people and meeting the future needs of employers for educated and technically competent staff. This is a win-win for all concerned.

Professor Alison Halstead

Pro Vice Chancellor, Aston University

The Aston University Engineering Academy (the first University Technical College) will play a key role in addressing the region's skills gap and ensuring that together we can foster a passion and enthusiasm for engineering that will enable us to produce a new generation of innovative and talented engineers.

Lord Puttnam

Trustee, Baker Dearing Educational Trust

University Technical Colleges should be very popular, as students will know that what they're learning will make a significant contribution to helping them secure employment. For those studying creative arts or the media, for instance, the Colleges provide a clear vocational pathway to jobs in areas increasingly central to the prosperity of UK plc.



Learning in a **University Technical College**

Each University Technical College has its own curriculum which meets the needs of its students, the requirements of local and national employers and higher education. In 2010 Sir Mike Tomlinson worked with a group of University Technical College sponsors to produce the framework for a University Technical College curriculum. It is expected that University Technical Colleges will work within this framework, the detailed content being defined locally, informed by employers' needs.

The Structure of the Day

As academies, UTCs can exercise the flexibilities allowed under current legislation. They adopt the following structures:

- A school day from 8.30am to 5.30pm except for Mondays and Fridays when the finish is 4.30pm
- A school year of 40 weeks with either four or five terms
- All teaching staff employed on the same terms and conditions with a single salary scale
- A comprehensive continuing professional development policy which requires staff to remain up-to-date including experience of the employment sector
- A mentor for every student is provided by local employers and/or the science and engineering ambassadors programme.

Benefits of the longer day and year are:

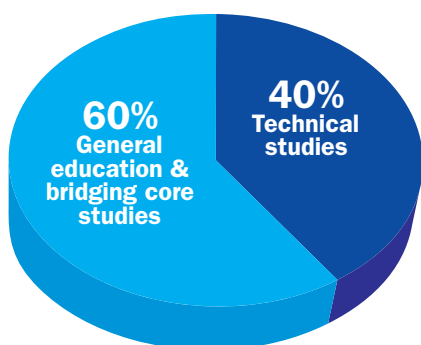
- students complete any “homework” (under supervision) by the end of the school day and do not have work at home;
- students are able to engage in activities often defined in most schools as extra-curricular and available only after school. This model means no student is excluded from this provision;
- the length of the day and year has similarities with employment;
- private study time can be provided for all students, thus developing their capacity to manage time and their own learning.

The Curriculum Model

The University Technical College curriculum is divided into two components: general education/bridging core studies and technical studies. These are not taught separately, however, but are integrated into each other.

14 to 16 Year Olds

The core national curriculum requirements are provided with the split of time between general education/bridging core studies and technical studies being 60:40 respectively.



The modern language study is such that will enable students to be competent in the technical and general language associated with the technical study. For some students a GCSE course may also be followed.

The humanities cover the history and geography of the development of the technical study, including major developments and the people responsible.

The mathematics and English studies, whilst aimed at GCSE, are supplemented by material that ensures basic numeracy and literacy are secure to the standard expected by employers. Much of this material will be taught as part of the technical studies, not separately.

The enrichment activities include a range of experiences from further sport to community service to drama and art.

TECHNICAL STUDIES

This includes broad technical studies, for example engineering, experience of work (10% of total time for this component), projects (proposed by employers as far as possible); and mentoring. The content of the technical studies is determined by employers and higher education and also includes any content needed to enable students to achieve the technician qualification.

GENERAL EDUCATION

English, mathematics, science, a modern language, humanities, sport/PE and PSHE (including personal and employability skills), RE, enrichment activities.

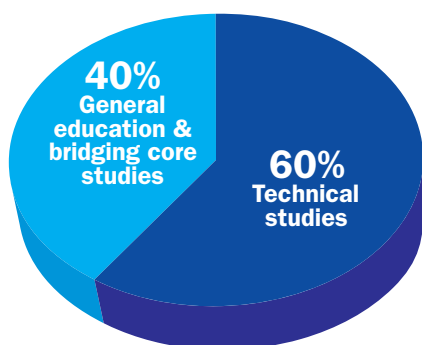
BRIDGING SUBJECTS

Financial literacy, understanding and setting up a business, IT, careers education and guidance.

16 to 19 Year Olds

Post-16, students are able to continue with their studies or they may choose to do an apprenticeship, which might include part-time study at the UTC.

If students choose to continue full-time study at the UTC the split of time between general education/bridging core studies and technical studies is 40:60 respectively.



The technical study is more specialised and job-related and the content should not only lead to a technical qualification but also to a professional qualification such as “Tech Eng” or “Tech Sc”, both of which are being developed and recognised by the professional bodies. These will enhance employability and provide much needed skilled technicians.

General Education / Bridging Core Studies Post-16

This includes English, mathematics, science, sport/ PE, business understanding, IT, careers education and guidance, modern language, employability skills. Short courses are also included.

The English work centres on report writing and presentation skills, both oral and written. The mathematics supports the requirements of the technical study as does the science. For many students, subjects may well be studied to A-level or its equivalent, thus ensuring students have as many pathways open as possible. Short courses could include Level 4 units of study drawn from the sponsoring university or from the Open University.

Technical Studies Post-16

This includes job specific content and professional qualification content and experience of work (equivalent of one day per week), projects (provided by employers), and mentoring and may lead to A-levels or other Level 3 qualifications.





The Experience of Work

The experience of work, both pre- and post-16, is substantial and has to be planned with the full support of employers. Between 14 and 16 all students have at least 40 days' experience of work increasing to 80 days between 16 and 19. The experience may be in blocks or shorter periods, in term time or in the holidays. It is all related to the curriculum and assessed. It is recommended that all work place mentors are trained in order that the student receives a very high quality experience.

The curriculum, whether at 14 to 16 or 16 to 19 provides qualifications at Levels 1, 2 (GCSE) and 3 (A-level or equivalent), thus providing real progression and no dead ends. It is essential that employers are consulted to ensure that they recognise and value the qualifications the students are studying for. Post-16, the apprenticeship option is also offered.

Employability skills should be explicit but integrated into the mainstream studies as appropriate. These include team work, problem-solving, customer service, oral presentation, influencing (peers and seniors), self-management/time management, self-awareness/self-reflection, global and cultural understanding, self motivation, and the importance of values.

Careers advice and guidance is explicit but integrated into the normal curriculum. Experience of work can make an important contribution to this.

Qualifications

Courses are available to GCSE, A-level or their equivalents, as well as some at Level 1. There are also professional qualifications available related to technician level.

It is possible that new courses and qualifications may need to be developed, particularly around the modern language and humanities studies. One possibility is the development of a new "English Tech Bac" in which would sit existing separately qualified subjects as well as other studies which could be assessed less formally. The Baker Dearing Educational Trust is investigating this and any new qualifications and courses needed over the coming period.

Teachers

This is an innovative curriculum which requires up-to-date teachers from a variety of backgrounds. University Technical Colleges value this variation and therefore:

- all teaching staff are employed on the same terms and conditions with a single salary scale;
- there is a comprehensive continuing professional development policy which requires staff to remain up-to-date including experience of the employment sector.

“ The JCB Academy is the first of a brand new kind of school in the United Kingdom, a University Technical College focused on delivering high-quality engineering and business education. Our motto at the JCB Academy is 'Developing engineers and business leaders for the future'. ”

Jim Wade, Principal, JCB Academy





WARCO

SPEEDS ARE APPROXIMATE

LOW

60-500

CAUTION

DO NOT CHANGE RPM
WITHOUT NOTICE PLANNING

JCB AC/EMY

EMY



The Next Step

University Technical Colleges are set up as academies. Before starting this process it is important to contact the Baker Dearing Educational Trust which will offer advice.

The Baker Dearing Educational Trust was founded by Lord Baker and Lord Dearing to promote the concept of University Technical Colleges. The organisation acts as a central body to provide advice and guidance and will help to form a network made up of University Technical Colleges.

The Baker Dearing Educational Trust

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Day to day activities of University Technical Colleges are carried out by the Baker Dearing Educational Trust:

The Rt Hon Lord Baker of Dorking CH, Chairman

Peter Mitchell, Chief Executive

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Contact us at: director@utcolleges.org

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University
Technical
Colleges



There are many
paths to success





**University
Technical
Colleges**

Sir Mike Tomlinson
Trustee, Baker Dearing Educational Trust

I believe that practical, vocational education is vital for our future prosperity and much greater value should be placed on this educational pathway and those young people who pursue this form of education. University Technical Colleges will provide high quality vocational education and training and will meet the aspirations of many of our young people.