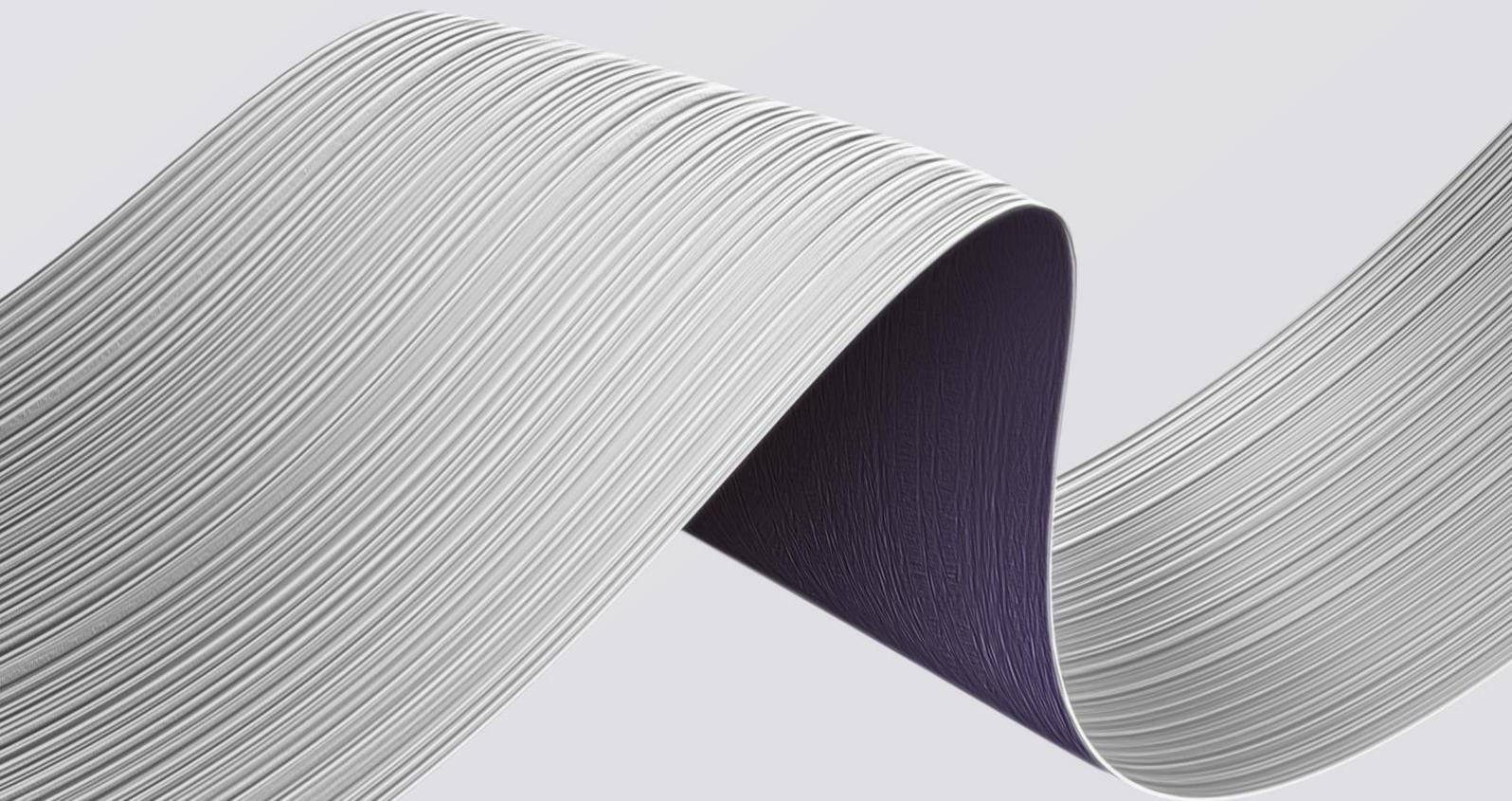


Insight

Comments on current education topics from leaders across the Dukes colleges and wider family.

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Mathematics, Further Mathematics and Even Further Mathematics

Gareth Collier, Principal of Cardiff Sixth Form College, reflects upon the value of mathematics to us all.

For those that know me well, the irony of me writing about mathematics will not be lost on them. As someone, who, at the age of 15 was written off by the mathematics teachers in my school, and told not to bother with taking an 'O-level' but to enter for a 'CSE' instead (more of that later), I understand the challenges faced by so-called 'non-mathematicians' to the study of this seemingly complex and unfathomable subject. However, I have come to learn that it is an essential part of everybody's education and is often most needed by those that least enjoy it.

Whether you subscribe to the ideas of Richard Courant (German/American mathematician) or not, when he says, "Mathematics as an expression of the human mind reflects the active will, the contemplative reason, and the desire for aesthetic perfection. Its basic elements are logic and intuition, analysis and construction, generality and individuality", it is clear that it is more than just numbers and calculation to many.

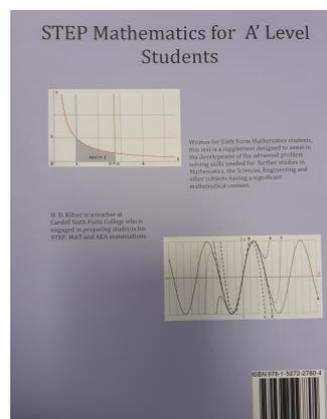
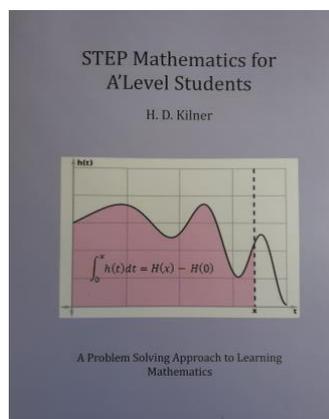
Its relevance to university applications for students interested in science, technology, engineering and mathematics (STEM) is cemented in the entry requirements set down by these very institutions. Becoming an engineer without an A-level in Mathematics is almost impossible and without Further Mathematics, far less likely than with it. One of the three most commonly studied subjects for all healthcare courses including medicine is Mathematics and in the now unpopular list of nine 'facilitating subjects', Mathematics and Further Mathematics are listed separately, giving even greater importance to the subject. Katherine Johnson (African-American mathematician) says, "We will always have STEM with us. Some things will drop out of the public eye and go away, but there will always be science, engineering, and technology. And there will always, always be mathematics."

However, what about the study of subjects like law and humanities? How is mathematics relevant to the study of these? According to 'Super-prof' "Mathematics is an application of matter and contributes to all of our methodical and systematic behaviours. It is mathematics, for instance, that has brought order to the communities across this planet and prevented chaos and catastrophes. Many of our inherited human qualities are nurtured and developed by mathematic theories, like our spatial awareness, our problem-solving skills, our power to reason (which involves calculated thinking) and even our creativity and communication." So, mathematics helps us think analytically and have better reasoning abilities. Reasoning is our ability to think logically about a situation. Analytical and reasoning skills are essential because they help us solve problems and look for solutions. All vital skills for anyone wishing to construct or rebuff an argument, or someone wishing to understand logical connections between societies and

issues. And a reason perhaps, why university admissions departments value so highly, Mathematics as an A-level for all undergraduate admissions.

The Dukes Education Colleges all invest heavily in the delivery of excellent mathematical education. Earlscliffe is justifiably proud of its historic performance with many students progressing to top universities on the back of impressive A-level achievement in Mathematics and Further Mathematics; Rochester Independent College can number amongst its graduating students scholars at Imperial College London and Cambridge University, studying engineering and mathematics due to the excellent tuition provided by highly qualified and expert practitioners; Fine Arts College, renowned for excellence in the fields of creative and performing arts notes and fosters the elusive but common link between mathematical achievement and artistic creativity; and Cardiff Sixth Form College, founded on a successful basis of STEM education where Mathematics, Further Mathematics, MAT and STEP tuition is included as a core part of the curriculum.

Cardiff Sixth Form College has a total of twelve highly experienced and accomplished teachers of mathematics, with specialisms across the range of mathematical topics required for A level study. However, in the area of STEP and MAT tuition, the presence of possibly the 'world leading academic' in this field for the delivery of teaching and learning to pre-university level is Mr Huw Kilner. His book on STEP Mathematics is widely regarded as the most up to date and comprehensive tome on the subject currently available.



STEP Mathematics is a well-established mathematics examination designed to test candidates on questions that are similar in style to undergraduate mathematics and is administered by the Cambridge University Assessment team.

Huw sees mathematics as essentially a tool for problem solving and reflective learning. His approach leans heavily on the work of John Dewey, American philosopher, psychologist, and educational reformer and the later refinements by Donald Schön, a philosopher, lecturer and business consultant who became the Ford Professor of Urban Studies and Education at Massachusetts Institute of Technology.

He uses Dewey's words in analysing Reflective Learning in Mathematics as an "active, persistent and careful consideration of"

1. how we solved a problem,
2. why we did what we did,
3. how we might do it differently or do it better,
4. what other parts of our learning it connects with,
5. and what other parts of Mathematics it leads to.

He then goes on to say, "I believe that reflection in Mathematics is invaluable for consolidating learning as you go along and that it leads to greater depth of learning and an acceleration in learning when practised over an extended period of time. My belief is based on actual evidence of how students in my classes at Cardiff Sixth Form College have benefitted from this practice."

This then applies to and benefits not only the mathematics studied but also a student's approach to their studies in other subjects which is an essential value of mathematics teaching beyond the confines of the mathematics syllabus. A case perhaps for the development of another A level subject of 'Even Further Mathematics'!

And so back to the beginning. For those old enough to remember CSE's and O-levels, I can confirm that I refused to accept the damning indictment of my teachers and entered for the O-level, got an A grade and resolved never to allow my performance to lead to the possibility of a similar statement or judgement in the future. I also resolved to champion excellent teaching wherever I could find it and in Huw Kilner and the rest of the mathematics teachers across Cardiff Sixth Form College and the wider group of Dukes Colleges, I am comfortable in singing their praises.

So you want to be a doctor?

Rochester Independent College specialises in helping aspiring doctors realise their aspirations. This year we have a record nine students, including some retaking A-levels, holding conditional offers from UK medical schools such as UCL, Nottingham, KCL, Sheffield and Exeter. In this article Georgina Winney, a former RIC student who now works in our admissions team, discusses the attraction of medicine as a career option and explores some of the related alternatives.

Often during the summer recruitment period we hear the same line from parents calling in regards to prospective A-level retake students, or those looking to transfer directly into our Year 13; 'Well they were aiming to study Medicine.' It is gut wrenching to hear stories of students who were not offered interviews, or have just missed the grades required to secure their place. In those days following results the emotions of students and parents are often extremely raw and for a student it can feel crushing to have lost out on something you may have been dreaming of since you first grasped the concept of what having a career meant. However, quite often students who wish to apply for Medicine are at a loss when it comes to explaining what drives them to pursue this option as a degree course. There seems to be a universal draw to Medicine as something that suggests the ultimate success. Perhaps we as educators should consider whether these students have been given the best advice on how to pursue a degree that is right for them. Have they had conversations about the fascinating breadth of degrees available to students that wish to study a medically related degree? Stopping to consider their options may open up a world of new possibilities that the drive to achieve a place at medical school may have never allowed them to consider.

Many a UCAS Personal Statement for those applying for Medicine will probably include some form of the statement 'I realised that I wanted to help people.' This statement does not just apply to Medicine and is relevant to many related degrees. Take for example Midwifery or Nursing, both include aspects of helping people within a medical setting but do not require Medicine as the base degree. For students who have a drive to assist people then Nursing may be the way forward for them as nurses are often at the front line of healthcare and are some of the first people you see when attending a healthcare facility. If a student wants to help people but feels drawn toward children then maybe Midwifery or pursuing a specialisation in paediatric nursing would be correct for them. Nursing itself has so many options to specialise that students would find that they could pursue an area that is a particular passion to them, whether it be diabetes or perhaps mental health.

Maybe that statement of 'I want to help people' does not necessarily apply to a hospital or a healthcare setting. Would the student be just as fulfilled working in a laboratory as a research scientist would, working out new cures for diseases or discovering more about the way in which the body works? Perhaps for some students this would be more rewarding than seeing patients in a consultation, depending on their own strengths and weaknesses. When a student presents with the idea of becoming a medic we should ask them to dissect this further, to break this wish down into its component parts and then rebuild working out what the true driving force is behind their decision. That is not to say to dissuade them from pursuing this course, but rather to allow them to make choices with a greater knowledge of the courses available to them.

Say you have a student who mentions in discussion that their passion and choice to study Medicine is due to their curiosity about how the human body works. In this case, it may be that they should consider Physiology as an option. Physiology satisfies students' curiosities about how animals and humans function and its study is of importance to Medicine and related health sciences. It is the study of how the human body functions or quite simply how and why we work as we do. Physiology includes aspects of other medically related courses such as pharmacology, neuroscience and anatomy. The course itself

involves the chance to undertake experiments within a laboratory setting where the experiments are conducted on the peer group. These can include designing ways to reduce heart rate in stressful situations, how exercise affects basic body functions or determining how excess liquid intake affects urine output. Many students will also experience anatomical sessions with real specimens, which gives you a better understanding of how the body works than looking at textbook diagrams. In some cases, this part of the course can also include dissections of various organs. It is a wide ranging and engaging degree choice and can lead to interesting career options. For example, physiologists can opt to work in hospitals as clinical scientists, taking ECGs, blood pressure and being involved in phlebotomy. Alternatively, if their interest lies within the research field they could choose to pursue this further. One example of this would be a student who develops an interest in cardiac function during their final year options and dissertation project, pursuing a career as a cardiology researcher.

What about those students with a real passion for Chemistry? They may wish to consider the alternatives such as Biochemistry, which combines aspects of Chemistry with biological principles, or maybe they would be interested in a course such as Pharmacology. Pharmacology or rather the study of drugs from their design through to their interactions in the human body is an interesting route for those who might wish to pursue careers in pharma or clinical trials. Pharmacologists are responsible for discovering new medicines, improving the effectiveness of current drugs and understanding how individuals respond to drugs and the causes of addiction. Having a basis in pharmacology would give a good grounding for those wishing to research new drugs to prevent disease or improve upon current medications used in medicine. The degree itself incorporates elements of biomedicine, physiology and pathology. In the final year of their studies, students can focus more on the forefront of current research in drug action. Laboratory classes look at the effects of drugs as well as their toxicology using both tissue samples and computer programs. In some laboratory sessions students can conduct research amongst themselves such as observing the effects of different quantities of alcohol/ or a placebo on reaction speeds.

Maybe you have a student who is also taking Psychology as one of their A-level subjects; a natural progression here would be for them to consider this as a degree course. This is more than one option available however, the breadth of psychology is large and there are different areas to explore, whether this be educational, developmental or social, or perhaps another branch entirely. Perhaps when talking about their passion for psychology the student mentions the biological aspect, if they are also taking Biology as an A-level then Neuroscience may be an option for them instead of pursuing Medicine. The course, which studies the development, structure and function of the nervous system, also includes how the brain makes sense of the world around us. It combines aspects of physiology, pharmacology and anatomy to give a wider understanding of the workings of the brain. Topics can include memory, pain, brain development in the embryo and gross brain anatomy. Neuroscience will also bring in elements of anatomy, with the study of brain and spinal specimens. Some dissertation projects will include dissection and preparation of brain specimens and analysis of these through staining techniques. Neuroscience gives options to students to pursue careers in healthcare or research. Research roles include such areas as neurodegenerative disease, child development or mental health in both children and adults. For those who are looking for a degree that combines more elements of Psychology with Neuroscience they should be searching for degree courses that include elements of Cognitive Neuroscience. These courses look at

the cognitive basis for behaviour in humans and students may study the techniques used in Psychology and Physiology such as EEG, fMRI and PET scans.

These are just a snapshot of the courses available as alternatives to Medicine. Other options to consider, and this is only a selection, include Applied Anatomy, Molecular Genetic, Pathology, Biomedicine and Forensic Science. Students all have unique passions and interests and therefore the wide variety of degree courses available should be discussed fully with them when university applications are approached by schools. Preferably, these discussions should begin well in advance of the UCAS application, to give students time to consider courses they may not have heard of before and to investigate further, determining if an alternative to Medicine piques their interest. Many students may not be aware that these options are available to them and may have been metaphorically 'blinkerred' by the aspiration to achieve a place at medical school without seeing the breadth of the medical and related science spectrum. Perhaps these courses, for those set on their ambition could take that 5th place on the UCAS application, giving students a secondary option that they still feel enthusiastic about.

It is important to remind students that by choosing to take a medically related degree it does not stop them from working in a hospital or healthcare setting should this be something they wish to do. For those who may want to study a further degree it would be worth mentioning the Scientist Training Program as offered by the NHS. This teaches graduates about the clinical side of medicine and gives them the ability to assist in clinics, whilst they study for a Master's degree.

These medically related undergraduate courses give students a good basis and many transferable skills that they can take into the work place. They will have the opportunity to improve their analytical skills, work with manipulating data, use various computer programs, determine correct statistical techniques and further develop their written communication. Having options available to students may give many an alternative and could possibly prevent those heart-breaking conversations post-results when students miss out on places at their desired universities.

It is always worth bearing in mind that doing an undergraduate degree in a medically related science will also - should they still wish to pursue their dreams of becoming a medic - give them a good basis for embarking on that career, as they will always have a fantastic knowledge base. There is also the option for students who do go on to study Medicine to intercalate on to one of these related degrees, giving them an additional qualification alongside becoming a doctor. As always, the more we prepare students by giving them the best advice on options available, the better prepared they will be to make informed decisions about their futures.

Transforming from the physical to the virtual school

Rebecca Clyde, Head of Academic Studies and Outreach at Cardiff Sixth Form College (CSFC), illustrates how rapidly her teaching colleagues reacted to having to deliver learning online and offers informed opinion on its opportunities and challenges.

With three days' notice, on Friday 20th March 2020 the UK Government shut schools in the UK due to the spread of the COVID-19 pandemic.

We had an inkling that this may happen approximately 1-2 weeks ahead of time but had hoped that we would have had more time before the closure was enforced. In the week before the 'shut down', with the threat looking real, swift plans were made to transfer CSFC from being a physical school, with classroom-based face to face teaching and learning, into a virtual, remote, online educational facility.

In one week's time teachers, some of whom did not even use a computer in their lessons, were expected to master delivering live online lessons to students all over the world, record these sessions and place them and all teaching, learning and assessment materials on to Google Classroom. Every single teacher threw themselves into this task positively and with enthusiasm, realising that they had less than one week to master this system. In-house staff training took place in the evenings after lessons were over; more confident teachers spent hours with less confident ones; plans, policies and back-up plans were hastily written; GDPR and Safeguarding was checked and checked again and CSFC-Online was created.

The college timetable was re-designed so that the day now starts and finishes earlier in order for the majority of CSFC's students to be able to connect live for each lesson with their teacher from their homes to the east of the UK and in time zones ahead of BST. All lessons are recorded and then placed on Google Classroom for the few students who are not able to attend the live lessons to watch in their own time. Students in 37 countries around the world have all managed to attend their lessons, participate in these and continue their learning according to the original schemes of work that were set in September prior to the pandemic outbreak.

It is important to remember that well planned online learning experiences are always going to be very different from lessons offered online in response to a crisis or disaster, such as the COVID-19 pandemic. We can never claim to be a purpose built online educational provider but in a very short period of time all teachers moved from a physical classroom to a virtual one, continuing to deliver teaching, learning and assessment to all their learners. We are working to maintain some form of normality for our learners in a unique situation. Moving this teaching out of the formalised classroom setting almost overnight, onto an online platform, has created a flexibility that means that teaching and learning can now occur anywhere and at any time. However, the speed with which this move to online teaching has happened is

unprecedented and staggering and this makes it all the more remarkable that it has occurred almost seamlessly and without too many major hiccups.

Teachers have had to improvise and find solutions quickly in less than ideal situations. No matter how clever a solution might appear and some very clever solutions are emerging, some teachers are understandably finding the process challenging. Teachers are teaching their timetable of live online lessons mindful of their own families' needs within the household, yet they are still being positive and highly professional by making their students their priority.

Being part of the wider community of Dukes has meant that some staff have been able to connect with teachers of the same subject at other Dukes schools and colleges, thus sharing good practice and ideas between them. The 'Duke's Key Stage 5 Subject Lead Sharing Good Practice' day, held in February meant that these contacts had already been established. For some subject teachers, these contacts have been invaluable in sharing ideas, forwarding links, teaching aids and free resources between themselves.

Although no directive was given on the style or structure of anyone's lessons, most teachers have naturally opted for a 'blended approach' to their lessons. *Blended learning* is an approach to education that combines online educational materials and opportunities for interaction online with traditional place-based *classroom* methods. For a teacher who naturally is at home in a physical classroom with their students present in the same room, this approach to online delivery seems more natural for both the teacher and the learners. However, it is still a very foreign world to many.

Using Google Classroom as our learning management system means the teachers and students can communicate in a closed system that is only accessible to the school community. It allows teachers to deliver interactive online, live lessons, where content is delivered in a blended way. It allows student assessment to occur, so that students can submit their assignments, take tests or mock exams. These are then accessible to the teacher to mark and feedback on. Google Classroom links to web pages or sites that allow teachers to present text, videos, or links to other sources and it provides discussion forums that enable students to engage in conversations about class content with teachers and with one another. In addition to the time spent in live lessons with students, teachers are also spending a significant amount of time responding to questions posted in online question-and-answer discussion forums, or on Google Classroom or sent to them by email.

Admittedly most teachers enjoy teaching in person because of the opportunity to interact with students. They enjoy sharing their passion for their subject with their students directly and watching that magical moment when 'the penny drops' and the dawning of understanding appears on their students' faces. Teaching online and remotely takes some of this away but our teachers have discovered that they can still be themselves. Using their voice effectively, with varying tone, volume and expression can have the same effect online as it does in a classroom. Adding humour, enthusiasm and passion is effective at drawing out responses from our students.

Our teachers are getting braver as they head into the fifth week of this style of teaching and learning; some are recording themselves in advance. In this way, rather than projecting their computer screen, with their notes or diagrams on, the class sees the teacher actually teaching the material. Students have reacted positively to this; they like the teacher bringing themselves visually to the class. It is a method which can capture the teacher's expertise, their empathy and their teacher persona in a way that comes across with much more impact than by writing on a screen. Students appreciate seeing their teacher's face and hearing their voice at this time, when many are feeling very isolated.

This switch from a physical school to a remote online school was forced upon us due to the current pandemic. It was created quickly as an alternative delivery mode due to the current circumstances. Our primary objective here was not to recreate a robust educational ecosystem at CSFC but rather to continue to provide a temporary solution that was quick to set up and is reliable and available to all our learners wherever they are in the world. CSFC-Online has required some quick thinking, creative problem solving, hard work, flexibility and commitment from the staff and students and a desire to succeed in helping meet the new needs of our learners and our community.

We are hopeful that in time we will be able to return to our physical school once the pandemic has abated but in the meantime our virtual CSFC-Online school runs full time, across the continents to all our learners. In the last month teachers and students have all been asked to do extraordinary things, including teaching course delivery and learning in a way that we have never done so before, in circumstances that we have never seen in any of our lifetimes before. Although this is a stressful situation, it has shown CSFC and Dukes to be full of passion, dedication, commitment and love. Let's hope that some of this remains after this is all over and we return to our physical schools.

Re-thinking examinations

Tom Arrand, Head at Cardiff Sixth Form College, reflects on the traditional method of academic assessment by examination.

These are uncertain times and no one doubts the necessity to abandon exams in 2020 due to such exceptional circumstances, and we all hope for an outcome for our students which is fair and which ensures that their immediate and long-term futures are not hindered.

Many positives have emerged from the current crisis – from people getting in touch with those whom they rarely make contact to home-working and remote, online meetings demonstrating our ability to build a greener economy. Will this year's public examination grades lead to a public examination of how we assess and grade our students in the future? It is possible that some good questions could be raised as a result of this year's situation which may result in a new outlook on assessment and qualifications.

Traditionally, A-levels and GCSEs have been decided principally by sitting examinations, under controlled conditions, with some subjects incorporating a degree of coursework, non-examination assessment, oral/aural exercises or practical assessments. With the exception of exams, the other aspects of the qualifications are marked by teachers and moderated by the exam boards. This year, it looks likely that teachers will assess the students' body of work over the period of time studying the courses and offer a grade for each student which will be moderated externally.

Let us pause to reflect on this. A teacher, who understands the student's ability in their subject, assessing their ability in that subject against a range of criteria....might there be something in that? After all, when we reflect upon the range of situations in which the knowledge and skills acquired at school are to be applied, very few scenarios resemble that of the silent examination hall. In whatever professional industry our students find themselves when in the world of work, the likelihood is that silent recall of information may form a small aspect of their work, but no more than that.

Public examinations began in England in the 1850s, as a means by which schools could record pupils' attainment. The first exams were set by dons at Cambridge University and reflected the educational outlook of the time, where students were expected to learn large amounts of information by heart. A brief read of the school room scenes in Charles Dickens's *Hard Times* shows us what this looked like, as Thomas Gradgrind, the Schoolmaster, aggressively asserts to the children that:

"Facts alone are wanted in life. Plant nothing else. You can only form the minds of reasoning animals upon facts: nothing else will ever be of any service to them."

This prompts one obsequious boy to offer the following description of a horse:

"Quadruped. Graminivorous. Forty teeth, namely twenty-four grinders, four eye-teeth, and twelve incisive. Sheds coat in the spring; in marshy countries, sheds hoofs, too. Hoofs hard, but requiring to be shod with iron. Age known by marks in mouth."

The irony that Dickens is exploring is that a girl in the class, Sissy, who is unable to describe a horse in such a way, in fact understands more about horses than any in the class. Her understanding, however, goes uncredited.

These Victorian students were expected to draw maps from memory and list the names of kings and queens alongside other significant events from periods of English history. Andrew Watts, Director of the Cambridge Assessment Network, and a former teacher, reflects: *"In the Syndicate's early History, Geography, Science and Scripture papers, question after question asks for the recall of facts, often from set books or periods of history, or sections of the Bible. This reflects a view of the educated person as being a collector of knowledge. Which was not surprising at a time when new worlds of knowledge were opening up. Think of Charles Darwin spending five years on 'The Beagle' collecting facts about animals and plants. His 'Origin of Species' was published just the year after the Cambridge local exams began."*

There is nothing wrong with seeking detailed and accurate knowledge from students. I, for one, am very proud of my ability to recite all of the kings and queens of England by heart. But that ability is *recall* – our memories can be trained to achieve this and it does not in itself, demonstrate a true understanding of the periods in history that each of those monarchs represents.

More flexible examination questions and tasks, which enable students to demonstrate their ability to analyse information and to apply their knowledge and understanding, are a far better way to assess their ability. However, the reality is that some students perform better in exams than others. Many degree courses offer equal weight between dissertation and examination and some education systems have already started to move away from traditional exams.

In 2018, Malaysia's Education Minister, Dr Maszlee Malik, developed the Classroom-Based Assessment (PBD), which focuses on a student's academic development, without the use of exams. Similarly, Singapore has cut down on the number of exams for selected primary and secondary school levels. Georgia abolished all exams this year. Finland, a country with a proud history of academic excellence, examines students only once, at the very end of their time at school.

When interviewed by a national broadcaster after the announcement that exams were to be cancelled, this year, Geoff Barton (General Secretary of the Association of School and College Leaders) said *"Teachers are experts in their subjects, they know these qualifications inside out, they know their students, and they have the professional skills to assess them accurately."*

"We do not subscribe to the notion that exams are the only credible way of assessing qualifications, and this is an opportunity to at least point the way to a less brutal system."

Brutal or not, examinations are under the spotlight and there has never been a better time to consider their relevance. Perhaps a combination of coursework, practical work, research, dissertation and some controlled assessment, overseen by the professional people in schools who understand the students and provide the safe environment in which they can thrive, might be the way in which qualifications are decided in the future. Time will tell.

Beethoven at 250

James Harding, Head at Earlscliffe, reflects on the enduring appeal of Beethoven's music in the 250th anniversary of the composer's birth.

The enduring appeal of Beethoven is a phenomenon. Beethoven is frequently cited as one of the most admired composers in the history of music; admiration for his music appears to increase inexorably with

the passing of time. The 250th anniversary of his birth in 2020 brings another reason to reflect on this composer's unique place in the popular imagination and in European and world culture.

Lined up beside other celebrated composers, Beethoven's stature isn't a given. Other composers wrote better melodies (his contemporary in Vienna, Schubert, for one); other composers had greater technical ability (J.S. Bach, Mozart and Mendelssohn, to name a few); many other composers took themselves far less seriously and were more endearing human beings. Yet Beethoven's stature 250 years after his birth appears unassailable, a composer who for many musicians and listeners is simply 'the' composer, whose music seems to communicate at a level which is both deeply profound and immediately comprehended.

Beethoven's career emerged at a time in western Europe when many of the sensibilities and shared values of our own age were coming into being. Democracy, for one, emerged as a powerful and radical force, evident in the American and French revolutions. In the arts, the concept emerged that a creative artist's individual vision was somehow a central focus at the very heart of their work. A decorous, stylish and well-ordered aesthetic associated with the mid-eighteenth century was replaced by an individualism which put vision, often idiosyncratic, and communicating it widely, at the heart of much creative endeavour. For example, in England, the poet William Wordsworth, Beethoven's contemporary, famously advocated a poetry with a plain, stripped-down idiom and a focus on the poet's ability to perceive things others could not. Wordsworth asserted in a stark and plain sentence that a poet is 'a man speaking to men'. Allowing for the vocabulary of the time, which will now seem sexist in talking of 'men' rather than 'humanity', Wordsworth's thinking is directed at the idea of the arts having an elemental, universal appeal. Poetry for Wordsworth mattered – it wasn't a specialist art-form for an educated connoisseur or a rarefied private patron: rather, it was something which brought benefit to humanity as a whole, a force for good which, through nurturing the imagination, could bring humanity together and into a fruitful relationship with nature. Wordsworth wrote that 'the Poet, singing a song in which all human beings join with him, rejoices in the presence of truth as our visible friend and hourly companion. Poetry is the breath and finer spirit of all knowledge'.

Beethoven's music embodies a similar aesthetic. His musical language and form are founded in the 'classical' era, in the urbane, witty and sophisticated idioms of his teacher Joseph Haydn. The power of Beethoven's music was to add a kind of universal profundity to the musical language of courtly concerts. This was combined with an iconoclastic approach to the forms and decorum with which he had grown up and through which he had found his musical voice. You don't need a degree in musicology to understand what Beethoven is attempting to do in his music: melodies are often staggeringly simple; development of the melodic material is driven, urgent and dynamic; polite, set forms are a starting-point, but are expanded and often exploded into larger, sometimes massive structures which suggest a rebellious, subversive imagination bursting from the evident constraints of an outdated set form. The small-scale dynamics of a court symphony orchestra are replaced by the loud and contrasting dynamics of a large orchestra fit for the large-scale public concerts of a new age. Beethoven's musical voice seems often to suggest a humane and innately ennobling rebelliousness, a big-hearted free spirit breaking from the confines of politeness and social stratification and reaching out for a huge impact, the kind of utterance

that can touch hearts universally, in Wordsworth's words 'singing a song in which all human beings join with him'.

In setting up our 'Mind Expanders' activities for our Earlscliffe students confined to home in lockdown over the Easter holidays, I made Beethoven our first 'Composer of the Week'. I listed Beethoven's Third Symphony as the focal point of my recommendation, as it is a piece which exemplifies Beethoven and his desire to communicate with an urgent, arresting voice. The history of this particular symphony is tied up with two important strands to the Beethoven legend.

One strand is Beethoven's alleged admiration of Napoleon and the composer's subsequent disappointment when this once radical leader crowned himself emperor. Beethoven, famously, is said to have scrubbed out Napoleon's name as dedicatee of the symphony. That story, whose simplifications are often now disputed, grows perhaps out of the impact of the music itself, which to many listeners suggests a reformulation of what nobility might be. Beethoven's music has suggested to many the idea of a democratic nobility of spirit and imagination. In putting the composer's consciousness and vision at its centre, the music seems to suggest that the hierarchical structures and titles of traditional political power are outdated, and that the utterances of a creative human being attain an innate nobility far outshining that of traditional dukes, princes, kings, emperors and the like.

The second strand of the Beethoven legend associated with this symphony is Beethoven's battle with deafness. The Third Symphony had its first public performance in 1804, a year when Beethoven's hearing loss was increasingly evident and impacted significantly on his ability to perform. Famously, Beethoven's doctor in 1802 had recommended some time off, away from the bustle of Vienna, and so Beethoven stayed in the nearby village of Heiligenstadt. There he penned a letter to his two brothers in which he explored the depth of his negative feelings as a musician at the height of his career confronted with progressive, degenerative hearing loss. The letter, known sometimes as the Heiligenstadt Testament, documents Beethoven's determination to turn his back on suicidal thoughts and to go on with his life's work as a composer: 'it was only my art that held me back ... it seemed to me impossible to leave the world until I had brought forth all that I felt was within me', Beethoven wrote. The Third Symphony is a work that was written in the wake of that resolve and for many listeners seems to articulate some sort of heroic triumph over circumstances. An exceptional rhythmic drive permeates the whole piece, along with a breadth and a variety of expression. There are moments of darkness throughout the symphony, notably in the second movement – a funeral march – but a sense of resolve and triumph permeates the piece, not least in the triumphant 'fortissimo' re-statement of the last movement's principal theme which concludes the piece. This is not programme-music, nor music which was written to document or narrate any particular story. But its supremely confident mood, at times suggesting unbridled, yet hard-won optimism and profound joy, has appealed to countless listeners. It's as if this symphony is a tribute to the strength of the human spirit, articulating its determination to triumph against the odds, to transcend the limitations of illness and disability, and to assert its capacity for intellectual and spiritual ennoblement. This is one of the reasons for Beethoven's enduring popularity: the capacity of his music to suggest the strength, resilience and triumph of the human spirit in a way that is immediately comprehended (listen again to the ways in which the first movement of this symphony unfolds – a sense

of inexorable intellectual grip in the musical argument, combined with a monumental simplicity and directness).

Beethoven's popularity, 250 years after his birth, seems unassailable. All nine symphonies are performed and recorded regularly, the 32 piano sonatas are practised, rehearsed and performed by pianists around the world, and the late string quartets are universally celebrated as a pinnacle of European culture. Not everyone is a Beethoven fan, of course: Benjamin Britten, the English composer, was famously unconvinced, and performed Beethoven very little during his career. Beethoven's gestures and turns of phrase as a composer are easily parodied: notably by the late Dudley Moore in his brilliant variations on the theme of 'Colonel Bogey' in the style of Beethoven. And, like (nearly) all the great composers, Beethoven has his off days: for example, the Triple Concerto showcases none of the taut and engaging intellectual discipline that characterises his best work.

Yet Beethoven's ability to communicate remains compelling and consistent. He was a composer who struggled with technical mastery but who made his struggles to compose an engaging part of his musical narrative: the 'Grosse Fuge' – the great fugue – has little of the glittering technical assurance of J.S. Bach, but it's considered by most of Beethoven's admirers to be one of his greatest works, because Beethoven's battle to reach the standard of his formidable predecessor's astonishing technical mastery emerges as a battle worth fighting. And it's a battle in which performers and listeners are also involved, as bringing off the audacious nature of Beethoven's writing is something to which the very best players can only aspire. Perhaps this extraordinary piece of 'late' Beethoven encapsulates the nature of his unique appeal. You don't need to understand the complexities of counterpoint to 'get' the Grosse Fuge – it sounds like some sort of primeval, titanic struggle, and is, in terms of musical form, just that. The American poet T.S. Eliot wrote that great poetry can communicate before it is understood (he was recalling his pleasure at enjoying the sound of Dante's verse before he understood the complexities of Dante's literary Florentine). Beethoven's music communicates – as listeners we simply get it: the driven, quirky, yet serene optimism of the first movement of the Third Symphony is bracing and life-enhancing. Knowing about eighteenth-century symphonies and Beethoven's ambiguous relationship with his teacher Haydn makes Beethoven's subversive engagement with the symphonic tradition all the more interesting. But his particular genius is to communicate that subversive engagement immediately to the listener through the simplest of means – the music itself communicates a kind of heroic breaking free.

That perhaps is the essence of Beethoven's appeal and of his exceptional talent – to create the taste by which your music is understood and admired. So, 250 years on, Beethoven's music remains as appealing and engaging as ever. I hope that our Earlscliffe students will enjoy their encounter with this extraordinary musician and that they will be won over by his exciting, enduring, bombastic and sometimes uneven but always engaging music – it's a real life-enhancer.

Funding a university education in the US

Dr Carolyn Tate, Senior University Advisor at A-list Education, explains the various funding options available to a student considering applying to US universities.

Funding a US University Education: The Costs, Process, and Opportunities

The cost of US higher education is much publicized and cause for needed debate both in the US and around the world. The sticker price for many US universities can be shocking. Thinking about how you will finance your degree is crucial, particularly for international students. At A-List we believe in being transparent about the costs of a US education and we also believe in dispelling some myths. When we work with students and families, we aim to clarify how fees are calculated, what costs students and families are likely responsible for, and what sources of financial support may be available.

Understanding how schools determine the Cost of Attendance (COA) versus the published cost of tuition is the first step. The basic costs at leading private universities, including tuition and room & board exceeds \$70,000 USD per year. Though this is steep, it is important to keep in mind that UK schools only advertise basic tuition fees, at nine thousand pounds a year. That number doesn't include housing, books, and other fees. However, the number advertised by US universities must legally estimate total cost.

Offsetting the Costs: Financial Aid

While the cost of American higher education can vary from institution to institution and may be influenced by factors such as citizenship and US-state residency, financial aid opportunities are available at some universities for both domestic and international applicants.

There are two major types of institutional financial aid: Need-Based Aid and Merit Scholarships

- **Need-Based Aid:** These awards are based upon an assessment of the student's / family's financial position and can consist of institutional funds, available work-study opportunities, and/or loans. The best way to determine if you qualify for this kind of aid is to use a net price calculator. The College Board provides an excellent tool which we offer to families. Accurately putting in financial information is important. That is the only way to determine if a student will qualify for these resources. These awards can significantly reduce the cost of study, and usually require additional forms or registration. It is important to think about the total cost of attendance at various institutions and consider how competitive you may be for scholarships or other aid. It is worth bearing in mind that many universities today – primarily private institutions – are discounting the cost of study. Known as the 'discount rate', a university's tuition-discount rate is the difference between the institution's official stated fees and what

students actually pay. The majority of financial aid at selective schools is based on need, rather than merit. In fact, the Ivy League has made an agreement that they will only give financial aid based on means testing.

- **Merit Scholarships:** These scholarships are given based on academic merit and other talents (athletic, musical, dramatic, and etc.). Depending on the university, applicants may be automatically considered for the academic scholarships, or an additional scholarship application form may be required. Scholarships do not need to be repaid as long as the conditions of the scholarship are maintained. These are competitive and we work closely with students to determine if they are both eligible and competitive as well as helping them polish the supplementary materials.

Key Terminology

Understanding the key terms is essential to deciphering individual school policies and making a successful financial aid or scholarship application. Throughout the US university admissions process, A-List works to interpret the differences to help families. Below are some of the ways we explain the financial aid terms most families will encounter.

- **Need-blind colleges:** Universities are described as need-blind if they do not consider the family's finances when they are deciding whether to admit a student. At these institutions, the admissions application is considered independently of any financial information about the applicant.
- **Need-aware (or need-sensitive):** Universities are described as need-aware if they do consider the family's finances when they are deciding whether to admit a student. At these institutions, the admissions application is considered alongside financial information about the applicant. Since they are considering a student's application and their financial need side-by-side, these institutions normally have greater control over the ability to meet full need for accepted applicants.
- **Full-need:** These colleges are committed to being able to meet the full demonstrated financial need of students that they admit.

If a US college has a need-blind admissions policy, it does not always mean that when they extend the offer of admission to the student that they can guarantee them financial aid, too. It does mean that their financial status will not affect their chances of admission. Need-blind policies usually vary between US citizens and international students. In fact, very few schools in the US are need-blind for international students. There are currently five US universities that promise need-blind admission and full-need financial aid to all students, including international students.

- Amherst College
- Harvard University
- Massachusetts Institute of Technology (MIT)
- Princeton University

- Yale University

Sometimes a college may still admit a student, even if they are not able to provide financial aid to meet their full, demonstrated financial need. They may expect the family to pay for a student's education through other sources. This could include taking out loans, applying for outside scholarships, or applying for merit-based aid or sports scholarships at the university. If you are offered this route, you may want to consult a professional advisor about what this means and if it is in your best interest.

Though securing need-based financial aid as an international student is a challenge, there are several prestigious scholarships which are awarded to international, as well as US, citizens. A-List advisors encourage appropriate students to apply for these competitive awards.

Jefferson Scholarship: This scholarship funds four full years at the University of Virginia, including incidentals. Total value of the scholarship over four years exceeds \$280,000 for non-Virginian students and includes tuition, fees, books, supplies, room, board, and personal expenses. Students must be nominated from their school, but many international schools participate in this program. Schools are asked to nominate students who “best exemplifies excellence in the Jeffersonian ideals of leadership, scholarship, and citizenship.” After regional competitions, 120 finalists are sent to UVA in March for the final selection and approximately 40 scholars will be accepted. This fellowship allows students the chance to attend an international renown university for free.

Robertson Scholarship: This prestigious scholarship is available at Duke and the University of North Carolina. In fact, this program also offers cross-campus programs between the two schools. The scholarship offers eight semesters of full tuition, room and board, and most mandatory fees for Scholars at Duke and UNC-Chapel Hill. Scholars also have access to generous funding for up to three summer experiences, funding for conferences throughout the academic year, and for two semesters of study abroad. Students who are selected for this scholarship show purposeful leadership, intellectual curiosity, strength of character, and collaborative spirit. The deadline for the scholarship is November 15th.

Morehead-Cain Scholarship: This is the first fully funded scholarship at a public university in the US. Founded in 1945 at the University of North Carolina, Chapel Hill, considered one of the best public schools in the United States, this scholarship covers the full cost of attendance for four years as well as provides funding for summer research and work experience as well as international travel. This application is separate from a student's application to the University of North Carolina. The deadline is also different—October 15th. Because of the scholarship's long history, the network of scholars is extensive and provides an excellent network for both scholarly and professional collaborations in the future.

Boston University Trustee and Presidential Scholarships: Boston University has many merit scholarships and extends two of its most significant funding opportunities to international students. The Trustee Scholarship is BU's most prestigious scholarship. These awards are given to students who become part of a unique campus community that offers intellectual, cultural and social opportunities. Competitive

applicants are among the most accomplished in their class and demonstrate exceptional engagement in their schools and communities. The Trustee Scholarship covers tuition and fees for four years and 20 awards are given annually. The Presidential Scholarship provides students with 25,000 USD annually. This scholarship is only available to international students. Top academic qualifications are key but leadership within and outside of the school community is a significant factor in determining who receives this generous reward.

These scholarships are just a selection of the many awards available to international students. If offsetting the cost of a US education is important to families, A-List advisors work to target appropriate schools and prepare thoughtful materials for these competitive awards.

Athletic Scholarships

Many families and students have heard about the possibility of athletic scholarships at US universities. It is true, that university sports in the US are highly competitive and well-funded. However, these scholarships are competitive and the rules and restrictions vary from school to school as well as from sport to sport.

Recruitment Process

The recruitment process for university athletics begins before the application process. In fact, in the US some students are scouted at age 14. International students are not likely to start the process this early, but they should begin during year 11. If a student excels at a sport, this is a good time to research camps and program that will help attract attention from coaches. This is critical as even if a student is a top athlete as a coach in another country might not know of the student's skills or how the student could be an asset on a team.

Academic and Athletic Requirements

Though athletic talent may attract coach interest, students will still need to be mindful of their academic progress. This is especially true of students who are hoping their athletic abilities to help them secure admissions to a highly selective school. The benchmarks for grades and test scores may be slightly different than for other students, but there will be rigorous academic requirements as well.

Coaches want to attract student athletes and thus will be clear with their academic expectations. Having honest and transparent conversations about the academic, as well as athletic, requirements is the best way to ensure positive outcomes from this process.

Also, university sports in the US are regulated by two associations: National Collegiate Athletic Association (NCAA) and the National Association of Athletics (NAIA). Students do need to register with these associations to be eligible for recruitment!

There are also other concrete steps student-athletes should take to facilitate the recruitment process.

1. Create a sports-specific CV including relevant statistics and achievements.
2. Ask for your coach for a reference letter highlighting your skills and teamwork.
3. Create a video highlight reel. This is especially important for international students who may not be able to play in the tournaments where coaches review players.
4. Research schools and contact coaches. Your contact with coaches should be polite and professional. This task should be done in consultation with an advisor to make sure you strike the right tone.
5. Take a look at team rosters in your sport at the universities you might like to attend. These often include student statistics from the athlete's secondary school days and can help you understand how you may fit into the team.

As you begin this process, it is important to research which schools will offer athletic scholarships and for what sports. The Ivy League, which as we have already discussed, is a sports league, does not have athletic scholarships. Being a recruited athlete may help your application, but you will not receive funding.

As with all parts of the application process, planning and preparation are key to athletic recruitment, securing scholarship funds, and applying for need-based financial aid. A-List advisors have helped many students and families through this process. Though a US education may seem unaffordable, the resources available are generous and with the right application can make a US education feasible for an ambitious student. -

Making choices for A-level study

Theo Boyce, Deputy Head of Oxbridge Applications, looks at all a16 year old must consider when making A-level subject choices.

Though there's no magical A-level sorting hat, taking certain steps can help mitigate pitfalls and minimise dread. 'Working forwards and backwards' in tandem can help to calibrate a set of subjects that will work in a student's favour.

Working forwards. Since GCSEs are broad and (more or less) prescribed, students in years 10 and 11 are not accustomed to pursuing their specific academic interests or considering what their greatest strengths may be. A great starting point is to encourage students early to review existing interests and discover new ones by using resources such as online degree explorer tools, podcasts and online lectures, articles, and

so on (call us if you need ideas!). At the least, a useful outcome of this would be for students to decide whether they are more of a 'science person' or an 'arts/humanities' person.

Working backwards. The 'facilitating subject' list (Mathematics and Further Mathematics, English Literature, Physics, Biology, Chemistry, Geography, History, and Classical and Modern Languages), generally favoured by Russell Group universities, is well known. Clare College in Cambridge has said, 'Most of our successful applicants over the last couple of years have offered 'facilitating subjects' for most or all of their A-levels'. This is not to say that applicants must have at least two of these subjects to be competitive, as that would confuse correlation with causation, but that these reliable choices typically form part of a strong combination.

Working forwards. While 'facilitating subjects' are important to consider, they are also considered 'facilitating' because they are rigorous and challenging. A student called me after results day last year, devastated. He had achieved straight 8/9s in his GCSEs and had a clean sweep of offers from prestigious universities for History, including Oxford, Durham, and UCL. Having chosen his A-levels based on the list - English Literature, History, and Chemistry - he had achieved A*A*C respectively, missing all his offers. This kind of situation is sadly common and very avoidable.

Working backwards. For some courses, certain A-level combinations are necessary or highly advantageous, and you can get a representative example of this on Oxford University's 'admissions requirements' table, which has been updated for 2021 entry. For sciences, one science is rarely enough to be competitive - for Medicine or Natural sciences, 3 or 4 science subjects are desirable. Read between the lines here; for example, Further Mathematics is not available at all schools, but where it is, and if it is recommended for the course in question, we highly recommend applicants take it (95% of successful applicants for Economics at Cambridge in 2019 had it).

Working forwards. We advise students to have a set that 'makes sense', and of course that depends on student's ambitions. Let's take Amanda, who studies A-levels in Biology, Art, and Economics. With this set, Amanda will find many pathways a challenge; at most Russell Groups, getting a place for a science course with one science, a humanities or arts course without a heavy essay-writing subject, or economics without Mathematics will be a struggle. She will certainly have some options, but they will be relatively limited. Though Amanda - who is an art scholar and incredibly talented - shouldn't be dissuaded from following her passion for art, her remaining 2 choices (and perhaps an EPQ) could have created a more sensible set for at least something.

Working backwards. Joanna Brown, a highly experienced Careers Consultant who works with Oxbridge Applications, frequently discusses A-level choice with students. She told me that though students find it easy to discuss the subjects they enjoy, anxiety is added when they are asked to imagine what career options they would want open when they graduate. The Cambridge Careers Service has a brilliant, free tool to help explore links between degree choice and careers (regardless of university). Many young people are surprised to learn that a First is no longer an easy route into a glittering corporate career, but rather registering for insight weeks and internships, and building employable skillsets, are perhaps more

important. We also find many students can be misled by fixating on a career, thinking, for example, that studying Law at undergraduate level is necessary to become a lawyer, when often the best path is to study something else before the conversion course.

Working forwards. Terence McDermott, Director of Careers at Surbiton High School, warns against only considering interests without also potential performance in a proposed A-level. He points out that a high grade at GCSE doesn't necessarily indicate potential to achieve an A* at A-level. Similarly, students may enjoy a subject at GCSE, only to find it changes significantly at A-level and then grow to dislike it. He advises a triangulation process in order to predict what students' strengths and interests truly are and identify areas of 'danger' where students may not be able to make the step up. Tools such as psychometric testing (online Morrisby testing is now a steal at under £30 per student), looking closely at mock and eventual GCSE performance, exploring the content of the A-levels properly, and honest conversations between teachers, students, and parents can bring up potential issues. While there are A-level subject requirements for many university courses, particularly in the sciences, Terry suggests you should also have a mind to achieving three consistently strong A-level grades. Often it is this, as much as having the 'right' subjects, which opens up the most competitive universities.

Working backwards and forwards.

By itself, 'working backwards' can be dangerous. Subject choice is important, but so is achieving strong grades across the board. Lofty career aims should be balanced with exploring the options early and assessing what plays to one's strengths. This is different for every individual. Graham's purported end goal, following in his parent's footsteps, was to become a doctor. He was confidently predicted 8 or 9 in every GCSE. Under guidance of his careers advisor, Graham secured two weeks of work experience in a hospital. Thankfully, Graham had done this with enough time to rethink things, as the work experience completely threw him – he hated it, returning home disillusioned every night, and could no longer see himself as a doctor. His proposed A-levels in Biology, Chemistry, Physics, and Music would have served him well for Medicine, but would now hold him back for competitive pure science courses. Looking ahead at the admission test requirements for Biological Natural Sciences at Cambridge, having discovered this course by attending several university subject taster days, he saw that mathematics would be a compulsory element. He managed to swap out Physics for Mathematics at the last minute and is now graduating from Cambridge with a specialism in Biomedical Sciences.

Of course, Year 11 students don't need to 'lock down' their career choices or know exactly what they want to study at University. We all know people who have several pivots in career direction, or who have changed subject midway through their degree. There is no elegant solution, but it seems to me that taking three key measures can mitigate some of these stumbling blocks; starting early, exploring the options fully (looking forward) and, simultaneously, understanding the implications of one's choices (looking backward).

What is independent learning?

John Wilson, co-Head at Eaton Square Upper School, Piccadilly, London examines the essence of independent learning in post-16 years education.

In pursuit of independent learners

If you read the literature published by the UK's leading universities about the type of student they wish to attract and the skills they aim to develop, independent thinking, independent learning and problem-solving feature very highly among those described. Imperial College London for example has an entire section on its website dedicated to this under 'Leadership and Strategy' where they describe unique undergraduate learning activities such as building a mass spectrometer from LEGO or the use of escape rooms, both intended to make learning less abstract. Ideas such as this are designed to challenge a learner's independent thinking and problem-solving skills in a way that they perhaps have never been asked to do so before.

Why do they do this? Do young people learn more about the mass to charge ratio of ions (this is what a mass spectrometer is used to establish, for the uninitiated!) if they have had to create a pretend mass spectrometry machine from plastic bricks or more about applied geography if they've been locked in an escape room? Not really, or at least that is not the reason the methods are applied. What is true however is that the world is changing. In fact, the world has changed such that undergraduates are expected to leave university with skills far beyond their knowledge and understanding of the course content from the degree programmes they have read for. The careers that young people are being prepared for are uncertain and changing all the time as automation and new technologies are developed. Even careers within traditional graduate fields such as medicine are evolving rapidly as technology moves forward and provides solutions to increasingly complex problems.

It is therefore essential that while universities continue to be centres of academic excellence, they are also developing more transferable skills in their undergraduates – independence of thought and problem solving are just a few alongside collaboration, communication, speaking, listening and developing strategies. Increasingly, they appear to be looking for the potential of their undergraduates to be able to develop these skills rather than more traditional academic ones.

Yet, many students who progress to university have not had the opportunity to develop or even consider the skills that universities prize so highly. The school system, rightly, places heavy emphasis on the outcomes of students' high-stakes examinations. A school's performance is measured according to the relative achievements of their students in these exams either in absolute terms, or through the various 'value-add' statistics intended to measure the progress of learners over time.

Sixth forms have a fundamental role to play in addressing this imbalance. They have to prepare their applicants for university entry by enabling them to demonstrate they have the potential to develop some of the unmeasurable skills that universities prize in their undergraduates. It is unfair to expect a 16-year-old to suddenly become an independent learner or a problem solver if they have spent most of the last 12-24 months cramming for high-stakes GCSE exams that they are told are the most important things they will ever do. Instead, sixth forms have a responsibility to treat sixth formers as young adults and aspiring undergraduates, but to remember that they were very recently pupils in school.

I believe that by the end of Year 13, sixth formers should be operating almost entirely independently, relying on their teachers only for guidance, support and for help with the specifics of the examinations they are going to be taking. It takes time and training for them to achieve this however, and sixth form colleges should not expect that it will happen simply through the passing of time and because the students are 'old enough' to learn in that way. Without carefully nurturing independent learning, students will remain dependent on their teachers at a time when they need to be dependent on themselves.

To achieve this, from 'day one' sixth formers can be told where to go for information, but not necessarily how to find it. They can be given wider reading lists, expected to read some of the books on them and encouraged to read others. They should be given some restrictions on their time and in the way in which they work, but also given freedom to explore and find solutions to problems for themselves, this way they will increasingly take ownership of their own learning. Without question, they should regularly experience failure, be allowed to make mistakes and mess things up in order that they can learn what not to do and how to make changes for the future.

Sixth forms have a responsibility to build this type of learning into the curriculum and to be overt in the way they deliver it. As the world continues to change and universities are increasingly expected to prepare graduates for an ever-changing world, sixth forms have to do the same. Of course, successful exam outcomes are still essential, A-level (or equivalent) grades are still the required entry mechanism for university, but the routes to this success should be evolving all the time and should place more and more emphasis on students developing independent thinking and learning skills.

A review of the arrangements for awarding final grades at GCSE and A-level this summer 2020

Tim Fish summarises Ofqual's guidance on the awarding of final grades for students in Year 11 and Year 13 taking GCSEs and A-levels.

In England, Ofqual is the public examinations regulator and it has issued a number of guidance updates over the last few weeks on how students in Years 11 and 13 will receive final GCSE and A-level subject grades this summer. The arrangements in Wales do differ and Mr Gareth Collier, Principal of Cardiff Sixth Form College, would be happy to respond to questions from our overseas partners with students in Welsh schools and colleges (gareth.collier@ccoex.com).

When will results be available?

A-level results will be published on 13 August and GCSE results on 20 August, as originally planned.

How will grades be awarded without examinations being taken?

Teachers will predict the grade they think a student would most likely have achieved in their subject if the summer exam had been taken, based on professional judgement.

Teachers will also have to place students in ranking order within grade bands. For example, if I have ten students taking History A-level, I must list them in descending order of ability in each grade allocation. A ranking list must be submitted for each grade awarded in each subject. This will allow examination boards (Pearson Edexcel; OCR; AQA; CIE) to perform any moderation of grading in order to ensure the overall distribution of grades is consistent with previous years.

What evidence will teachers use in order to predict a final grade at GCSE or A-level?

Teachers may use any reasonable form of academic performance data collected over the length of the course in order to predict a final grade. This may include mock examinations; internal testing; assignments completed in class or as homework; bookwork; previous exam results, ie As-level and performances in creative arts and Physical Education, and 'any other records of student performance over the course of study.'

When will teachers submit their predicted final grades?

Teachers will be able to submit predicted grades by 29 May at the earliest, and up until 12 June.

Can students continue to complete academic work which can be included as part of the evidence used to predict a final grade?

Yes, although teachers must be mindful of the context in which any work may have been completed.

Will students and parents be informed of the predicted final grades?

No. This is forbidden.

Could the exam boards change the grades teachers predict?

Yes.

Can a student appeal a result?

There will be limited opportunity for appeals this summer, with students unhappy with their final grade(s) encouraged to take public examinations in the autumn. A proposed autumn examination schedule has not yet been published.

Will UK universities accept the August results based on predicted/final grades?

Yes.

If a student takes A-level examinations in the autumn can they still attend UK university in September/October?

If a student does not have a place at a university they wish to enter based on their grades published on 13 August, it is highly unlikely that they will be able to attend a UK university in 2020 based on the results of any exams taken in the autumn, given that it takes many weeks for results to be issued. If a student wishes to apply to UK university using autumn 2020 exam results they should re-apply through UCAS (by 15 January 2021). However, as we do not know when any of the new, proposed autumn exams will be taken or their results issued, there is a possibility that a candidate could apply through UCAS before knowing their results. Some UK universities offer January entry, ie Buckingham.

Theoretically, a student could start a university degree course in September 2020 (based on August results) and choose to take A-level exams in the autumn. They would then re-apply through UCAS for 2021 entry and depending on the results of the autumn exams choose to stay on the degree course already started in 2020 or start again at another university in September 2021.

Can a Year 11 student unhappy with their August grades, start an A-level course and take GCSE exams in the autumn series?

It is highly likely that many schools will show a greater level of flexibility this year. Many UK independent schools have already committed to honouring sixth form conditional places irrespective of August results.

Will this new system work?

Given the circumstances and the highly centralised nature of the UK's school examination system (which does **not** allow for flexibility or change in pace), this is probably as pragmatic a solution as one could have expected. There will undoubtedly be 'winners and losers' as always, but hopefully and as previously stated, most students will receive the grades they would have achieved had they taken the exams.

No system is perfect, however.

Becoming Lord Mayor of London

William Russell, co-founder of Knightsbridge School, a member of the Dukes family of schools and colleges since 2018, reflects on his role as Lord Mayor of London 2019-20 at yet another watershed moment in the city's long history.

Did you know that the pantomime character Dick Whittington was based on an actual merchant and politician who lived in late medieval England?

It's true – and the real-life Richard Whittington also served as Lord Mayor of London on four separate occasions. Whether or not Richard Whittington had a cat, however, we don't know.

As the current Lord Mayor, I am proud to follow in Richard Whittington's footsteps. In fact, I am the 692nd person to occupy this role, one of the world's oldest continually elected civic offices.

Alongside Dick Whittington, the other thing most people associate with the Lord Mayor is the annual Lord Mayor's Show. Every November, the newly elected Lord Mayor is paraded through the City of London, alongside a dazzling array of floats displaying the best of British business and civil society. For my Show, I was delighted to have Knightsbridge School march with the mental health charity Place2Be, all decked out in fantastic nautical themed outfits.

And, speaking of elaborate costumes, it was a great pleasure to visit the school in my full mayoral robes in March. It was marvellous to hear, from the students as well as the staff, how well the school is doing.

Although the history and tradition continue to play an important part of the Lord Mayor's role, the responsibilities have also adapted to retain a modern purpose. As one of the leaders of the City of London Corporation, the Lord Mayor represents the many businesses based in the Square Mile. By extension, the Lord Mayor serves as an ambassador for the UK's financial and professional services sector.

Of each Lord Mayor's year in office, around four months are spent overseas on business visits all around the world. These visits are normally undertaken alongside UK Government and business representatives, as we look to strengthen the UK's role on the global stage and explore new opportunities for international partnerships.

When the Lord Mayor is in the UK, every day is packed with an exhausting schedule of meetings and conferences, playing host to ambassadors, business leaders, faith groups, charities and many others. As Lord Mayor, I live in the Mansion House, opposite the Bank of England. This beautiful building, dating back to 1739, is where we hold glittering dinners – perhaps the most significant are the Easter Banquet

and the Bankers and Merchants Dinner, at which the Foreign Secretary and the Chancellor of the Exchequer, respectively, address the nation.

However, the Lord Mayor's responsibilities extend beyond business. There is a major charitable aspect too. Not only does each Lord Mayor support a wide range of external charities, but they also lead the Lord Mayor's Appeal. Through workplace initiatives and fundraising events, the Appeal creates "a better City for all" – that is, the residents, employees, and neighbours of the City of London.

Another important strand to the Mayoralty is the Livery community. The City of London has 110 Livery Companies, member organisations that originated as groups of tradesmen and craftspeople who gathered in the 12th century to ensure the highest standards in their line of work. Today, some Livery Companies remain closely connected to a trade or profession, some focus more on charity or support for the Armed Services, but all are actively involved in the civic life of the City of London.

The coronavirus crisis will drastically transform what I am able to do as Lord Mayor. At the time of writing, my team and I are establishing how we can "go digital" with my ambassadorial work: instead of visiting other countries and welcoming decision-makers into the Mansion House, we'll be using video conferencing technology instead.

It's a turbulent time, but history has shown that the office of the Lord Mayor is resilient: since 1189, it has withstood disasters, crises, and wars. For me as Lord Mayor, and for the staff and parents of Knightsbridge School, now is the time to reflect on what sort of society we want to shape once this crisis has passed, as it must surely do.

April's top-tips: how to host an online meeting or event

Richard Fletcher, Director of Performance at Dukes Education, has hosted over 30 webinars in the last few weeks and has been a key figure in the coordination of knowledge and resources as Dukes schools and colleges have prepared for the move to online delivery

Video Conferencing – Top 10 Tips

The world is now communicating online. Here are some tips to help you navigate your way successfully through the world of video conferencing.

1. Purpose

Make sure that there is a clear purpose for the meeting. Emphasise the purpose before the meeting and communicate it clearly at the start as well.

2. *First impressions*

Be aware of lighting and background. If necessary, think about what you are wearing. Look up and towards the camera so that you appear to be engaging directly.

3. *Familiarise yourself with the tech*

Whether it is Zoom, Google Meet, Microsoft Teams or other conferencing software, make sure that you familiarize yourself with the settings carefully. Understand the limitations and the possibilities.

4. *Stable internet connection*

Make sure that you have a stable internet connection. If it is unstable during the meeting then turn off video to get better audio.

5. *Have a spare device ... just in case ...*

6. *Turn up early*

7. *Cover rules of engagement*

Communicate with those attending the meeting about your expectations. Do you want them to show their faces, participate or not? Are there any safeguarding issues to consider? Will the meeting be recorded and if so, how will that be managed?

8. *Mute button*

Make sure that participants have their mute button on unless they are speaking otherwise background noise will get in the way of the conversation.

9. *Agenda and Material*

Prepare an agenda. If facilitating an 'open mic' type session, have questions for those assembled. If confident about the subject matter, then create your own 'starter for ten'.

10. *Have your notes close to the screen if you are reading from them so that you stay looking close to the camera.*

The possible re-opening of UK schools in late May/early June and the practicalities to be considered

Libby Nicholas, Managing Director, Dukes Education Schools (Outer London and Cambridge), offers practical advice on how schools can best prepare in order to mitigate the risk of infection.

The COVID-19 health crisis is the biggest challenge the education sector has been faced with in living memory. It is likely that educational settings in the UK will be re-opened on June 1st 2020. A return to school should be exciting and motivating for students, but on this occasion it must also be accompanied by a message which gives confidence and allays fears.

School leaders must therefore plan for re-opening and focus on introducing protocols to protect staff, students and families which are embedded.

Each school's senior management team and other relevant personnel are to ensure that protocols for social distancing, hygiene, movement of people, cleaning etc. are adhered to and to do 'spot check' reports.

The focus must be on trying to limit rotation so that 1 group of pupils is meeting only 1 adult most of the time (dependent on age).

Each school needs a vulnerable list of staff that shouldn't be exposed to risk; another list for those with vulnerable people at home who should also not be exposed to risk. Which school events/actions outside the classroom present a level of risk?

- Congregating at the start and end of day (including parents)
- Lunchtime/break
- Getting to and from school

This will require local solutions and risk assessments, ensuring 2m social distancing protocols, staggered starts and ends to both classes and the school day by class/year etc. and assemblies delivered online.

Dining arrangements need to be assessed locally in order to minimise potential 'gatherings'.

The physical layout of classrooms can be changed by reconfiguring desks, tables and spaces.

Any planned 'off curriculum' time (eg activities weeks, camp weeks, thematic weeks, work experience, sports days etc) should be replaced with core academic study to ensure all required syllabus content is delivered, and other academic and cultural enrichment activities.

Schools must plan ahead with regard to staffing rotas, supervision, and equipment needs, ie sanitising gel, relevant and appropriate protective wear and waste disposal etc

Of course, 'the devil is in the detail' but these targets will underpin a school's aim of not just re-opening but continuing to stay open.

Weekly quotes collection – March/April

Every week, one of our Heads or Principals offers an inspirational quote that is shared with all college leaders, colleagues and students. Below, you can find our collection of quotes from the last four weeks.

Tom Arrand, Head at Cardiff Sixth Form College:

*That, then, is loveliness, we said,
Children in wonder watching the stars,
Is the aim and the end.* (Dylan Thomas)

Niall Johnson, Deputy Head at Earlscliffe:

'For success, attitude is equally as important as ability.' (Walter Scott)

Craig Winchcombe of Fine Arts College:

'Toto, I've a feeling we're not in Kansas anymore.' (Dorothy in L. Frank Baum's 'The Wonderful Wizard of Oz')

Gareth Collier, Principal at Cardiff Sixth Form College

"The internet is not a luxury; it is a necessity" (Barack Obama)

We welcome topic suggestions for articles in future editions of 'Insight'. Please contact Tim Fish accordingly: tim.fish@dukeseducation.com