[News story: T Level Funding Consultation Launched](#)

Colleges, schools and post-16 providers are being encouraged to have their say on how new T Levels – a once in a generation opportunity to put technical education on a par with our world class A Levels – are funded through a [three month consultation launched today](#), Tuesday 27th November.

T Levels will be the technical equivalent of A Levels combining classroom theory, practical learning and an industry placement. The first T Level courses in education & childcare, construction and digital will be taught in over 50 further education and post-16 providers from September 2020. A further 22 courses will be rolled-out from 2021 onwards covering sectors such as finance & accounting, engineering & manufacturing, and creative & design.

T Levels are being developed with the industries who will benefit from the skills these qualification will provide. We are working with more than 200 businesses, including Fujitsu, Skanska, and GlaxoSmithKline, to help design the course content to make sure young people taking T Levels are equipped with the knowledge and skills that employers value.

T Levels will be backed by an additional half a billion pounds of investment every year when the new qualifications are fully rolled out. The consultation sets out how the Government intends to distribute the increased funding, including:

- Recognition that T Levels will be larger, more stretching programmes and will therefore attract more funding than existing study programmes.
- Proposals for different rates of funding for different T Levels to reflect variations in size.
- Confirmation that additional funding will be provided to support T Level students who have not yet met the minimum English and Maths requirement so they can continue to gain these vital skills.
- Details of how funding will be allocated to help providers set up the industry placements which will be a key element of the new T Level programmes
- Providing extra funding for T Level students who are aged 18 to ensure that they can have the hours that are needed for larger fixed T Level programmes

Apprenticeships and Skills Minster Anne Milton said:

> Our A Level qualifications are recognised as some of the best in the world, it is now time to deliver the same for technical education. T Levels are central to that.
>
> These courses have been designed with leading employers so we know that they will not just meet the needs of industry but ensure

students are learning the skills and getting the experience needed to land a great job in a skilled profession, go onto a higher level apprenticeship or maybe university.

Now is the opportunity for the further education providers who will be on the ground delivering these courses to have their say. I want them to help us shape this system. Their view is critical so that we make sure T Levels give young people the technical skills they need and our economy the workforce it needs

The Government also recently announced an extra [£38 million to support the first T Level providers to invest in high quality equipment and facilities](). As well as this, the Government is investing £20 million to support the further education sector to prepare for new T Levels. This includes the [£5 million Taking Teaching Further programme](), which aims to attract more industry professionals to work in the sector, and the [£8 million T Level Professional Development offer]() to help teachers and staff prepare for the roll-out of the new qualifications.

[Speech: Margot James' speech at the Government Innovation Conference]()

The role of Data in creating opportunities for AI in the UK

[Speech: Margot James' speech at the Government Innovation Conference]()

May I say what a wonderful venue we are in today.

My predecessor in the role of Minister of State for Digital and Creative Industries – Matt Hancock – told the House of Lords AI Committee last year that there is 'a need in government for people who are at the vanguard…champions for the technology…alongside people who know the ins and outs of policy.'

I look around the room today and am delighted to see people all around government departments who are 'in the vanguard'.

Since then, there has been a report from that Committee, a government

response that I delivered with my colleague Sam Gyimah, and a debate — where it was stated that Departments themselves need to understand AI better.

The same goes for Ministers by the way.

We need to take those ideas from the vanguard, and make them mainstream for Departments across government.

And there is already great work being done in government.

The Department for Transport runs DfT Lab — which develops proofs-of-concept in agile 6-week sprints. They have used machine learning to identify road freight from satellite imagery in locations where there aren't cameras, and built a system to optimise transport patterns of the future.

The DWP are using AI to crack down on large-scale benefits fraud. Their system uses algorithms to reveal fake identity cloning techniques that are common among criminal gangs.

The Home Office and ASI Data Science worked together to develop technology which can automatically detect terrorist video propaganda on any online platform, so that the majority of this content could be prevented before it ever reaches the internet.

And I hope that same technology can be used in the fight against child abuse images online.

A year ago the UK topped Oxford Insights' Government AI readiness index — indicating we are the best-placed OECD country to implement AI in public service delivery, thanks to your great work on data, on fostering a vibrant environment for startups, and on the digitalisation of government.

So today is very important. All of us, collectively, need to share with each other what we are doing.

That means government working together with industry to seize the prize of a reported additional £232bn by 2030 — 10% of GDP.

And it's not all about economic value, but also the benefits it brings to individuals and families — from healthcare, to improving road safety.

Earlier this year government and industry collectively committed to nearly £1bn of investment in the Industrial Strategy AI Sector Deal.

Tabitha Goldstaub — who chairs the AI Council — is here today. The Council will have the important task of making sure that Sector Deal delivers. It's important that we mention this today — not just because it's about AI — but because it's the one year anniversary of the Industrial Strategy this week.

I was very proud as Business Minister to have had a part in developing it, and I'd like to pay tribute to my former boss, Greg Clark, an outstanding Secretary of State — who lives and breathes the Industrial Strategy and has really developed it so well.

That £1bn is intended to kickstart how we address the Grand Challenge on AI and Data — to remain at the forefront of this revolution.

To address the Grand Challenge, the whole of government, industry and civil society will need to work together.

Artificial Intelligence holds the promise to transform productivity. The government has set the ambition to place the UK at the forefront of AI in its Industrial Strategy. We should also seek to seize this opportunity for public service to become more efficient and effective.

To do so, the recent Budget initialised a review across government to understand where the biggest potential lies for adoption of these new technologies, to identify where combined investment can yield the greatest benefit.

It will be led by the Office for Artificial Intelligence — a joint unit between DCMS and BEIS — working with the Government Digital Service.

We established the Office for AI earlier this year following last year's AI review led by Professor Dame Wendy Hall and Jérôme Pesenti.

The Office for AI exists to be a central hub of policy expertise in AI across government. It delivers against commitments made in the Sector Deal around increasing access to data for AI startups, improving AI skills provision for the workforce, and driving adoption through missions and by other targeted means — all of which contribute to addressing the Grand Challenge on remaining at the forefront of the AI and Data revolution.

So, today I'd like us to focus on the role data has in creating opportunities for AI. But equally important is driving adoption of AI and upskilling our workforce, to be able to use data and AI better.

I'll begin with adoption of AI.

The full benefits for society and the economy that can come from AI can only be realised if it is widely used.
We have used a Mission-driven approach to set out an aspiration to drive adoption of AI. Earlier this year we announced how we would use AI to improve the early diagnosis and treatment of chronic diseases, which pulls together effort across DCMS, BEIS and DHSC, the NHS, private sector and civil society.

I'm so proud that the first Mission we announced was to deliver a transformation in the diagnosis of chronic diseases by Artificial Intelligence up to 2030.

Cancer Research UK estimates that by 2033, if late stage diagnosis were reduced by 50% across four common cancers 56,500 more people diagnosed would be diagnosed at an early stage, resulting in 22,500 fewer deaths within 5 years of diagnosis, per year.

It's important to realise that's not just an extra five years, but for many people they could have as much longer as if they'd not had the disease.

It's important to work with the expertise we have in government and the wider public sector to embed a culture of being intelligent customers when it comes to AI in public service delivery. We have engaged Office for National Statistics' Data Science Campus and GDS to help us do this.

DCMS has also seconded an official to work as a researcher at the World Economic Forum's San Francisco-based Center for the 4th Industrial Revolution towards a framework for responsible public procurement of AI. This is intended to mesh with the Data Ethics Framework which has a new home in DCMS after moving from GDS and provide a set of steps a decision maker could follow to decide on how to best implement AI solutions. The team is also working to ensure everyone benefits from the opportunities presented by AI, to ensure that businesses have access to the AI talent they need to operate, and in order to support and drive economic growth.

This currently involves the development of a new industry funded AI Masters programme, beginning with around 200 new AI Masters students in 2019 with expansion of this talent pipeline continuing year-on-year.

In addition it involves work to attract, recruit and retain world-leading talent by creating a fellowship programme that is globally respected and attractive for researchers around the world to congregate in the UK – recognised with £50m of funding that was announced in the Budget.

We are also supporting work towards an additional 200 PhD places in AI and related disciplines a year by 2020 to 2021. By 2025, we will have at least 1,000 government supported PhD places in AI at any one time.

Our work is in partnership with employers and universities, through our UK AI Skills Champion Dame Wendy Hall and the AI Council.

We are committed to increasing diversity in the AI workforce to ensure that everyone with the potential to participate has the opportunity to do so and will support upskilling, reskilling and lifelong learning to reach our aims.

That's why we doubled the number of Exceptional Talent visas to 2,000 to attract the brightest and best to live and work in the UK as well as training our own population.

Now, onto data.

There has been a huge programme of work in recent years to make sure we are promoting the open and transparent use of data.

This goes back at least 10 years.

In the government we are in a privileged position, as we collect a vast quantity of untapped data as part of the services we run.

And as the UK moves rapidly towards a data driven economy, it means that we have a real opportunity to make the most of this.

The government has already published over 44,000 datasets on data.gov.uk.

This unprecedented level of openness has created so many benefits.

This is one of several reasons we ranked top of Oxford Insights' Analysis last year.

We believe that innovation with data requires public trust. That's why government has established the Centre for Data Ethics and Innovation as another key part of addressing the Grand Challenge on AI and Data, the board of which was announced just last week — they held their first meeting yesterday.

Leading public debate on this is crucial. There's a great danger — if we get ahead of ourselves in government and industry, and allow public debate to fall behind, we fail to build the trust that is absolutely vital for the success of this endeavour. So, I think that the role of the new Centre for Data Ethics and Innovation is absolutely crucial in building that trust.

The Centre is a world-class advisory body to make sure data and AI delivers the best possible outcomes for society, in support of its innovative and ethical use.

And that Centre will become independent — it's our intention to put it on a statutory, independent footing, as soon as we can get the necessary legislation in train.

Innovation and ethics are not mutually exclusive. The Centre will work to deliver innovation with data, as well as ensuring its use — including for AI — is ethical.

Data is a critical part of our national digital infrastructure — and fundamental to AI. It enables all kinds of services we use everyday from maps on our smartphones, to social media and payment processes. Without access to good quality data from a range of sources, AI technologies cannot deliver on their promise of better, more efficient and seamless services.

Government is committed to opening up more data in a way that makes it reusable and easily accessible.

However, of course not all data can, or should, be made open.

Organisations looking to access or share data can often face a range of barriers, from trust and cultural concerns to practical and legal obstacles.

It is extremely important that we address these.

Last week, it was announced at the ODI Summit that 'the Office for AI will work with the Open Data Institute to run a number of pilot data trusts — frameworks to enable safe, fair and ethical data sharing between organisations to solve common problems and bring societala nd economic benefit.

The Office for AI is working with the ODI to identify potential pilots — including unlocking sales data towards facilitating a circular economy by

making packaging recycling more efficient, and around using data to bolster conservation efforts, among other examples.

The ODI are also working on a further pilot project to prototype a data trust with the Mayor of London and the Royal Borough of Greenwich. City Hall is working on data trusts as part of its Smarter London Together Roadmap to support AI and protect 'privacy by design' for Londoners.

This Greenwich project will focus on real time data from the Internet of Things, and will investigate how this data could be shared with innovators in the technology sector to create solutions to city challenges. Our ultimate aim is that Data Trusts encourage data sharing where it is not currently happening to deliver economic and societal benefit.

Finally, onto the AI Council.

Work is under way developing the AI Council, following the announcement of Chair Tabitha Goldstaub earlier this year — and Tabitha, we're very grateful to you for the work you've put in to get the AI Council almost up to launch, and also to Skills Champion Professor Dame Wendy Hall.

The AI Council is intended to be government's 'way in' to industry — a partnership body. Just as in the public sector, where Office for AI works across government to address the Grand Challenge, we need industry — with government's help — to take on some of this task.

We want to make sure that the public sector can work hand-in-hand with the private sector to deliver more solutions that are truly transformative and revolutionise public service delivery.

That's a really great prize.

Together, we can work drive adoption across public and industry sectors.

[News story: Opportunities for improving quality of marking](#)

Latest research in a comprehensive programme to find and drive improvement in the examination system.

News story: Opportunities for improving quality of marking

Ofqual takes the quality of marking of GCSEs, AS and A levels very seriously. Taken by more than a million students every year, we recognise that trust in the results of these qualifications is essential to public confidence. We have conducted a substantial programme of research over the past 5 years aimed at finding improvements in a system that in many ways already delivers results that are as good as many other systems around the world. Today (Tuesday 27 November), we are discussing 5 new research reports with teachers and education leaders at an event in London that will further understanding of marking in the sector, and how we might work together to drive quality higher in specific areas.

Marking is a complex exercise. It requires exam boards to recruit, train, standardise, and monitor tens of thousands of individuals to review tens of millions of responses each year. Each subject lends itself to being assessed in different ways, from multiple choice questions to long essays, which we know can have a direct effect on marking reliability but also more importantly the learning experience of students in the classroom.

Reformed GCSEs, AS and A levels reflect this trade-off between the absolute reliability of any assessment and the value of qualifications to individuals. The challenge, therefore, is to make marking as good as it can be in every subject, in the context of the style of the assessment. There is not a single, right mark for every answer given in every subject. For many assessments different – but equally legitimate marks – can be awarded for the same answer by expert examiners. Here we expect mark schemes and training to be of high quality. For other assessments, there will be a single right mark. Here we expect the right mark to always be awarded.

Our new research supports these aims by looking at various aspects of the marking process. We will be publishing our research following today's event, along with results of our recent marker examiner survey. In summary:

1. Online standardisation

Standardisation of markers can be conducted in different ways. We have looked at the processes involved in online standardisation in particular, and have identified some good practices that could be more consistently adopted to improve the experience and performance of examiners. These include receiving personal feedback by phone after being approved to begin marking and receiving confirmation that they are awarding marks on the same basis (as well as the right mark) as intended. It is also important for examiners to take personal responsibility for ensuring they review any feedback received.

2. Hard to mark responses

Previous research has identified that sources of disagreement between

examiners can be categorised as: procedural error (mistakes or not following procedure), attentional error (concentration lapses), inferential uncertainty (uncertainty in drawing inferences from the students' responses) and definitional uncertainty (uncertainty in the definition of what is to be assessed). The first 2 categories can be described as errors, while the last 2 are present in responses for which there can be more than one legitimate mark. Our latest research finds that the frequency of each category tends to vary by subject. For example, in biology, inferential uncertainty is more common, while in English language definitional uncertainty is more likely. We expect exam boards to reflect on these findings to see where they can improve their mark schemes.

3. Marking versus comparative judgement

Our examination system values the use of extended response questions in assessing important higher-level skills. But these responses are harder to mark than shorter, or more constrained question types. This can impact upon the validity of the rank order of candidate work. We are therefore considering rank ordering students' work by means other than marking. This study looked at 2 different alternatives — paired comparative judgement, and rank ordering by placing extended responses in rank order — and comparing these with 'traditional' marking using a mark scheme. The research finds that the 3 methods produce rank orders that are very similar. This work indicates that more research in this area could be worthwhile.

4. Marking consistency metrics — an update

Earlier work has focussed on component level marking consistency and found that results in England are comparable to others internationally. This paper reports new qualification level marking metrics, which are shown to be generally higher than those at component level from which they are comprised. And we note that marking consistency remained stable in England between 2013 and 2017. However, this does not mean that improvements cannot be made. In response, the paper considers how minimum acceptable levels of marking consistency might be defined, which would help exam boards to channel additional resource and support. We note that these thresholds would need take into account the subject and/or forms of assessment, but importantly, would need to be understood and accepted by the public.

5. Marking consistency studies

We measure marking consistency of the 4 exam boards offering GCSEs, AS and A levels in England annually. We have previously said that if we were to publish these metrics, we might compromise live marking monitoring. This new research provides an insight into marking consistency without these drawbacks. We found varying levels of marking consistency across subjects and between individual subject units. The results confirm our belief that marking is generally good across the system, albeit there is room for improvement in some specific areas. We want exam boards to reflect on these results and make appropriate changes to question design and mark schemes for future series.

We have also published the results of a survey of examiners, conducted prior

to the summer 2018 series. This survey — which received more than 18,000 responses — gives a picture of the professional background of examiners, as well as their experiences of the examining process. Its findings include:

- survey respondents had an average of 10 years previous examining experience
- more than 99% of respondents were current or former teachers
- the average age of an examiner responding to our survey was 47 years
- 96% of markers and moderators agreed that they were confident in their ability to mark or moderate accurately and reliably

Sally Collier, Chief Regulator, said:

> Our latest research confirms that the quality of marking of GCSEs, AS and A levels in England is good, and compares favourably to other examination systems internationally. But we must not be complacent. We must continually strive for marking in every subject to be the very best it can be. We welcome the input of experts across the education system to challenge the status quo and drive improvements. We will reflect further on our own rules and expectations in the light of this work. And we also want exam boards to consider today's findings and take both concerted and independent actions in response. This will ensure public confidence in these qualifications, that are taken by more than a million students each year, is maintained or enhanced.