

Qualified to succeed: Building a 14-19 education system of choice, diversity and opportunity

Pearson's report into the Future of
Qualifications & Assessment in England



Acknowledgements

Expert Panel

Thank you to our expert panel who have shared their experiences, expertise and views so generously. Their insights have been instrumental in shaping this report. The final recommendations are our own and are not intended to reflect the views of individuals or organisations.

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Executive Summary

Why is the future of qualifications and assessment so important?

The education experiences of our young people are vital in shaping their future. What the 9 million learners¹ travelling through our education system are exposed to has an impact not only on their own happiness and life decisions but will shape our future society.

Those education experiences were disrupted significantly by the Covid-19 pandemic. Schools and colleges in England were under extraordinary pressure to deliver learning to individuals whose lives were being affected in diverse ways, whilst our teaching staff were also adjusting to the events of the pandemic. Inequities within the education system and society that were prevalent before the pandemic have been exacerbated², leaving many to ask some fundamental questions about what kind of society we want to live in and what efforts need to be made to reduce inequality.

A significant part of a young person's education experience is shaped by the qualifications and assessments they encounter. This intensifies during the 14–19 phase of education, experienced by 2 million students each year. In this report, our recommendations consider accountability, funding and curriculum as well as the central themes of qualifications and assessment. They recognise the near impossibility of addressing assessment outside of wider system reform.

As a global education company, we at Pearson felt compelled to investigate this area objectively, engaging with a variety of different stakeholders and commissioning independent research to inform our view on how the system could be improved. It has never been more urgent to consider how the system must improve at 'levelling up' the experiences and outcomes of all 14–19 year olds. As such, it is important to us that our research and recommendations transcend the immediate challenges of the pandemic.



“Education is the most empowering force in the world. It creates knowledge, builds confidence and breaks down barriers to opportunity. For children, it is their key to open the door to a better life.”

Helle Thorning-Schmidt, 2017
Former CEO Save the Children International

About our research

Our research was structured in two phases, focused primarily on England. Before we embarked on the project, the voices of teachers and students were largely unheard, but we recognised from the outset that their inclusion is essential when considering key questions; namely whether GCSEs should remain, whether a new baccalaureate of some form should replace A level provision, and whether other types of qualifications (such as BTEC) should co-exist with A levels and T Levels. Throughout both phases it was vital to capture the voices of those closest to the challenges young people face as they navigate the journey from school to work.

The interim report, published in Summer 2021, explored the views of over 6,000 stakeholders across the education spectrum. They told us they wanted the 14–19 phase to be more inclusive, more empowering and more relevant to people’s lives. They also told us that reform should be evolutionary, building on the considerable strengths that already exist in the current system to ensure sustainability and stability. The second phase took these findings and explored more deeply what a good system should look like through literature reviews and practitioner focus groups. Both phases have informed our recommendations in this final report.

What we found

At the start of our project, we asked the fundamental question: what should a good qualifications and assessment system for 14–19 year olds look like? At the end, we established that a good system must equip individuals with the tools they need to thrive, facilitating access to work and engaging in life beyond school. It should be progressive, promoting choice, and contain a broad and inclusive curriculum that exposes students to a variety of experiences to support their development of knowledge and skills. It should be a system where attributing failure is never a consequence of recognising achievement, and should optimise technology in doing so.

Parents, teachers and learners told us that wholesale radical change is neither desirable nor needed. Our research clearly shows that without a strong foundation in evidence, radical change risks leaving the system in chaos. Large-scale system reforms can be disruptive and take years to bed in, but substantial progress can be made by focussing on smaller adjustments, some short and some longer term.

Our evidence indicates that there are two main benefits to having standardisation in a national qualifications and assessment system. Firstly, it provides useful external benchmarking of a learner’s level of ability, signposting how they may further develop; secondly, external certification of achievement is a valuable commodity for those without the social capital outside of education to enable progression into different education institutions and employment.

That is not to say there is no room for improvement. Our evidence also shows the current system is too restrictive, with too many rules specifying how qualifications and assessment need to be structured to be recognised by funding and performance measures. This has squeezed out the appetite for innovation, preventing the system from keeping pace with the modern, evolving world. The curriculum needs to reflect the diversity of the 2 million learners in this phase of education and their future employment opportunities.

Four guiding principles for reform:

- empowerment**
- coherence**
- adaptability**
- innovation**

At the end of our first phase, we identified four guiding principles that we then tested through the second phase of our research: empowerment, coherence, adaptability and Innovation. All four principles resonate with the final recommendations, each offering indications of next steps and solutions to prompt discussion and effect change.

EXECUTIVE SUMMARY (CONTINUED)

Our recommendations:

- ➔ **1 Make GCSEs work better for all learners.** They are versatile and valued qualifications, but there is room for innovation.
- ➔ **2 Set out a coherent curriculum framework.** One linking expected outcomes to the 'learning journey' of students.
- ➔ **3 Shift wholesale curriculum and qualification reform to a model of continuous, evidence-based improvement.**
- ➔ **4 Create greater diversity and representation in curriculum that reflects young people's lives, to better engage them in learning.**
- ➔ **5 Assess the right skills in the right way, enabling learners to highlight their strengths and successes.**
- ➔ **6 Provide more incentives for employers to engage with educators and strengthen teachers' capacity to bring work themes into the classroom.** Careers should inspire young people.
- ➔ **7 Accelerate the digital transformation programme, bringing all parts of the system together to realise the opportunities that technology can bring to the education experience.**

Underpinning all our recommendations is the need to prioritise the mental health and well-being of our young people. Whilst an appropriate amount of pressure can build resilience and adaptability, considering mental health in the context of qualifications and assessment is likely to lead to a national rethink as to how subjects are assessed, leaning on research that reveals both the positive and negative attributes of experiences from the pandemic. It is essential that education promotes a love of learning for life. As we gain more insights into the mental health of our young people it is important for all actors in the education system to reflect on the evidence with mental health experts and effect change where it will make a positive difference.

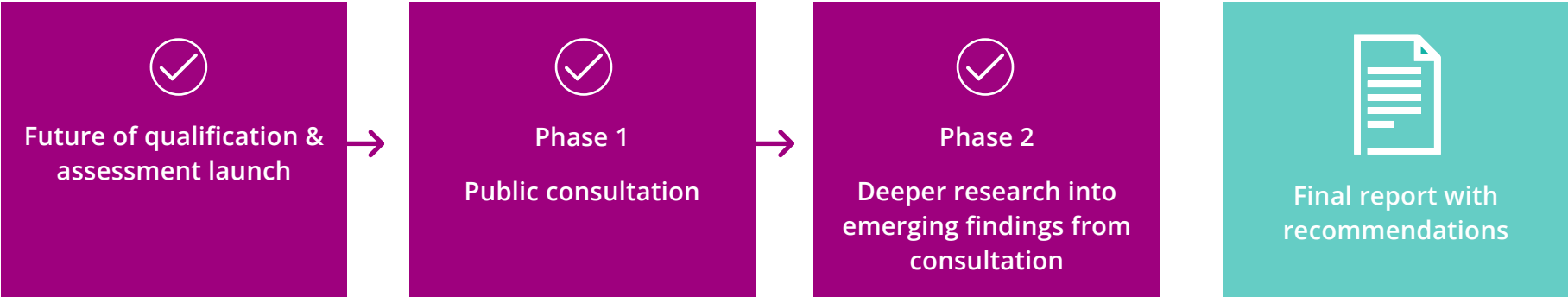
One question central to this discussion that emerged from our interim report is: how, if at all, should we be maintaining standards in this phase of education? We deliberately excluded it from Phase 2 because research in this area can be technical, and the trade-offs when offering solutions can be significant. We felt it was important enough to focus a separate research report on, in spite of its relevance to this topic. We also recognise that it is another area where practitioner and learner voices often go unheard. Consequently, we are running roundtables with a broad church of stakeholders and hope to publish a spotlight paper in the spring to inform initiatives on how to improve how we grade in England.

This research sits alongside a rich seam of parallel work that has taken place over the past two years supporting many of the findings and recommendations we have set out. These include calls to revisit Progress 8 subjects to allow for more curriculum flexibility, including more exposure to practical skills-based assessments, and re-examining current requirements for Mathematics and English post-16. We recognise calls from employers for a skills system which meets both immediate and longer-term labour market needs and envisage effective, managed employer engagement along with choice-led pathways provision. By advocating for evidence-based, gradual change within the existing system, transformation can start to take effect for all learners now and in the future.

Where do we go from here?

At Pearson we offer valuable insights into the ways in which all actors in the system can effect change, and the implications of the detail that sits behind bold policy decisions on systems when they go live, at scale. We have a breadth of experience in delivering global, national and individualised qualifications and assessments to suit different needs in different ways. We hope that our evidence, recommendations and suggested next steps are useful in contributing to key discussions and effecting change.

This isn't the end of the conversation for us. We are publishing a series of deeper dives into policy areas through our 'spotlight on policy' series. We have recently published a spotlight on [workforce skills](#), a paper on [equity in education](#) and are about to publish a spotlight paper on online learning experiences through the pandemic. In the Spring we will be publishing a deeper dive into onscreen assessments, taking recommendation number 7 from this report and unpicking some of the barriers to high stakes digital ambitions. Where we can make a difference ourselves, we will take that charge on; For example, we are already putting in place initiatives to enhance the diversity of our qualifications and assessments. Let's keep the dialogue open and be ambitious for our young people's futures.



Final Recommendations

1 **Make GCSEs work better for all learners.** They are versatile and valued qualifications, but there is room for innovation.



Objective assessment of student learning helps motivation and also provides a useful external benchmark of their development. At this age, objective assessment gives young people a valuable commodity to promote their capabilities to progress.

There have been many iterations of the GCSE, and its versatility should not be undermined by the design rules that have governed the most recently reformed structures of the qualification. At Key Stage 4, accountability measures should follow, not lead, good curriculum and assessment policy. Whilst school accountability measures help to ensure all young people have access to a rounded curriculum, there needs to be a degree of adaptability to allow schools to deliver the curriculum their pupils need. For some learners a smaller core of subjects may work better, enabling them to access more creative or practical subjects which may inspire and support their own progression into work or further study.

In the post-16 phase, a GCSE 'one-size-fits-all' approach fails too many learners with respect to Mathematics and English. Learners need to acquire the numeracy and literacy skills required to access higher technical education, and beyond that, into work. GCSEs are only one lens through which numeracy and literacy can be judged.

With a third of learners falling short of the Grade 4 threshold in Mathematics and English GCSE at age 16, and only a minority improving grades on resitting, a significant number of life chances are impacted by the belief that only a GCSE qualification can evidence the Mathematics and English capabilities they need to progress. Relevant, alternative qualifications need to be available and clearly understood by further and higher education institutions and employers as signalling proficiency in numeracy and literacy.

Potential next steps

- Adapt the Ebacc and Progress 8 measures to allow schools to provide a more tailored, high-quality curriculum. This could provide more teacher agency to expose students to broader skill sets that will support their individualised progression pathway.
- Where valid, different types of assessment should be re-introduced into the qualification design. Recommendation 3 explores this further.
- The policy of retaking GCSE Mathematics and English until 18 requires an urgent rethink. There are several examples of Level 2 Mathematics qualifications which are designed to offer alternatives to GCSEs and are more age-appropriate.



FINAL RECOMMENDATIONS (CONTINUED)

2 Set out a coherent curriculum framework: One linking expected outcomes to the 'learning journey' of students.

A single framework that shows a clear curriculum journey through the 14–19 phase of education – making links between the purpose of education, learning at the various stages, and expected outcomes – would be beneficial to all. The most recent articulation of the purposes for education in England points to economic outcomes, cultural development and preparation for adult life. The literature reveals lots of disconnected statements of ambition that fail to draw connections between defining what the education experience should look like and delivering it for learners. Clearer linkage of these purposes to the curriculum could be transformational for learners in understanding how study choices help meet career and life goals.

Almost all of what is taught in the 14–19 phase is dictated by what is assessed. A coherent curriculum framework should set out first what should be taught and learned, and then appropriately linked assessment can be designed to test whether the intended learning has taken place.

Potential next steps

- Draw on the best thinking in the world to evolve a coherent framework tool for teachers and learners linking what is learned in school to learning outcomes and assessment. Inspiration for this can be taken from alternative curriculum perspectives such as the OECD Learning Compass 2030¹ which evolves according to the knowledge, skills, attitudes, and values students need to thrive.
- This isn't about re-writing the curriculum, but identifying values, skills, and attitudes which already exist across the Programmes of Study and in qualification content. This should incorporate the 16–19 phase, giving a clear indication on where powerful knowledge and linked employability skills will help guide learners to desired progression outcomes.



FINAL RECOMMENDATIONS (CONTINUED)

3 Shift wholesale curriculum and qualification reform to a model of continuous, evidence-based improvement.

Despite best efforts, recent reforms have not always made the best use of institutional memory – policy cycles can be too short to establish strong evidence and/or sufficient data to support the radical change sometimes proposed. That said, the system needs to remain agile enough to support periodic change when supported by evidence. In our interim report, teachers and employers told us that most of the improvements needed to the 14–19 phase were relatively small; more often they see large systematic changes to assessment cycles as disruptive. Where teachers had control over elements of curriculum or assessment, they felt they could make positive impacts on their learners.

Potential next steps

- Reform of qualification and assessment systems should shift to an ongoing cycle of continuous change supported by strong data, impact studies, or evaluation. Gradual changes that target areas where there is evidence for improvement should be prioritised rather than waiting for a single point of reform every 5 to 10 years.
- Rather than the large-scale curriculum and qualification reforms we have seen over the past 30 years, we advocate a move to regular incremental improvements. That is not to say that small, gradual changes cannot have a big impact. Change can be a constant cycle but must be done only based on good evidence and at a pace whereby all stakeholders have sufficient time to implement successfully.



FINAL RECOMMENDATIONS (CONTINUED)

4 Create greater diversity and representation in curriculum that reflects young people's lives, to better engage them in learning.

The curriculum should reflect the diversity of the world we live in. Even where students may already see themselves reflected, they should see others reflected too – this ultimately helps to build an inclusive society where everyone is valued. Teachers told us there were lost opportunities to inspire learners and stimulate their ambitions either because they do not have the space for creativity in the curriculum content to bring in diversity of thought, or because young people fail to connect with learning because the curriculum does not sufficiently reflect or represent their lives. They need more support to make this happen.

Potential next steps

- The recently announced DfE priority to level up standards in schools 'so that children and young people in every part of the country are prepared with the knowledge, skills and qualifications they need'³ must give consideration to greater diversity and representation across the curriculum. This includes a breadth of topics that enable young people to make better connections to the world around them as well as highlighting figures relating to protected characteristics and diverse backgrounds. Teachers need more support in finding ways to make this happen.
- There is already space in the curriculum and assessment design for awarding organisations to make qualifications and assessments more diverse and inclusive. As above, however, this must be done carefully and in a way which unifies people rather than dividing them.
- The citizenship curriculum is a good opportunity to allow learners to reflect on these themes, making links between themselves, society and their own aspirations. There are also opportunities across subjects to explore diversity in individuals. Learners should play a central part in defining this curriculum.



FINAL RECOMMENDATIONS (CONTINUED)

5 Assess the right skills in the right way, enabling learners to highlight their strengths and successes.

Our research indicates that we need to dramatically improve how we are assessing skills. Too many assessments are arguably testing what can *easily* be assessed rather than what *should* be assessed, with the pendulum swinging too much in the direction of reliability² at the expense of validity³. This often manifests itself through assessments that require learners to demonstrate recalling knowledge at the expense of their skills. Rules that govern which qualifications and assessments will be funded or recognised on performance measures are heavily prescriptive. This leaves little room, teachers argue, for trying out novel approaches, stifling innovation.

The drive towards terminal assessment has led to teachers feeling they have a reduced stake in assessment of their learners, with fewer opportunities to personalise teaching as a result. Our research revealed instances where assessments were not testing real skills – students were instead more often tested on their comprehension of a skill. Sometimes students with talent are not having their skills recognised appropriately in the subject discipline. The consequence of this is that students become disengaged or are turned off education and move away from the subject they were once interested in.

During the pandemic, where required, many teachers showed ingenuity in creating and adapting effective assessments. There is room for more ambition in the structure of assessments, and teachers are well-placed to contribute to this.

Potential next steps

- In line with recommendation 6 below, we should aim to foster a culture of innovation in assessment, ensuring we work in real time to build on new evidence and the best practice. This would mean reintroducing different forms of assessment such as internal assessment or coursework into some subjects where appropriate.
- We should continue to pilot new approaches to assessment giving skilled practitioners the opportunity to help drive forward innovative assessment ideas. Improvements in digital capabilities allow for flexibility around test-taking, targeting the skills truly valued by employers. Allowing a safe space to develop these processes within a regulated framework would help to drive flexibility in assessment.
- With just under 16% of students in the English education system with SEND³, it is essential that the modality of assessment elicits the right skills from the full diversity of the student population – solutions that can address some of the needs of SEND students are likely to benefit all students.



FINAL RECOMMENDATIONS (CONTINUED)

6 Provide more incentives for employers to engage with educators and strengthen teachers' capacity to bring work themes into the classroom. Careers should inspire young people.

We need to build a culture of employer engagement with education. Too much employer engagement relies on goodwill and teachers' capacity to sustain ties. Teachers cannot be expected to be employment experts: career-related advice tends to focus on what qualifications fit the immediate needs of the learner. Teachers must be supported by qualified careers practitioners. There is a willingness of employers to inspire our young people and employees of the future, however employers need more support to learn how their expertise can complement the delivery and assessment of the curriculum. Teachers told us they often know what a good qualification is for their students, but are unable to always relate to how that links to opening and closing doors in employment.

Teachers told us they see the benefits to learners of strong employer links, and regularly leverage these to support guest lectures, workshops, workplace visits and placements. Leaving aside the unevenness of sufficient employers' presence and proximity in different areas, the challenges in providing these tend to be twofold: firstly, the quality and quantity of employer engagement tends to be driven by the motivation of individual teaching staff making use of their own networks or those of parents; secondly, the willingness of employers to engage. This is particularly true when schools and colleges are not delivering the credentials that are seen as necessary for direct entry into the industry such as licence to practice or professional certifications. In order to deliver the most authentic learning experiences, plentiful opportunities for employer engagement are critical. Teachers raised concerns that the high demand for work placements for T Levels could lessen the capacity of employers to engage more broadly in education.

Potential next steps

- The Government's long term Careers Strategy, introduced in 2017, has made a positive impact on the relationship between employers and education providers. The introduction of the Gatsby Benchmarks has made a valuable contribution to career-related learning. Improved infrastructure has also facilitated increases in employer-education engagement. There are opportunities to leverage this to support high quality curriculum delivery but too much employer engagement is reliant on teacher availability and goodwill. Schools and colleges need to be resourced to facilitate high quality employer experiences for all learners, and regular sector updating for teachers.
- Employers need financial incentives to engage with schools and colleges on curriculum matters, particularly where they don't see an immediate benefit to their recruitment pipeline. Employer incentives, along the lines of the Kick Start scheme for SMEs, or a widening of the use of Apprenticeship Levy funds for large employers, should be devised to support engagement with 14–19 providers in curriculum design, delivery or assessment.



FINAL RECOMMENDATIONS (CONTINUED)

7 Accelerate the digital transformation programme, bringing all parts of the system together to realise the opportunities that technology can bring to the education experience.

The pandemic has laid bare inequalities in access to digital resources and how this affects outcomes for those most disadvantaged. We have also seen how AI and digital learning in assessment technologies can be transformative. It is important that technology is used where it adds value to assessments – used correctly it can improve accessibility, reliability and can also address some of the security pressures where assessments are high stakes.

There is now an urgent need for a comprehensive and refreshed national digital strategy across schools and further education that brings together and enhances existing policies and initiatives. The challenge is multifaceted, from the infrastructure at home and in institutions, funding, and ensuring capabilities of all agencies are aligned to drive change at scale.

Our research shows that whilst many schools and colleges have shown resilience in adapting to more digital learning, both teachers and learners have had widely-differing experiences because of access to technology and digital skills. Teachers we consulted cited access to hardware, the internet and quiet study spaces as an issue. There are many different contexts across the country and many schools and colleges have adapted differently to the challenges they faced. Teachers told us that whilst many young people rely on their smartphones for internet access and communication, many learners have weak IT skills possibly because of a lack of access to computer facilities at home.

Potential next steps

- This digital strategy should link to assessment developments to ensure they keep pace with how digital is transforming learning. This digital strategy must be delivered or reviewed on a rolling basis to ensure continuity and that no learners are left behind.
- To support a rapid roll-out of assessment innovations, the starting point is ensuring learners in all settings have access to devices and high-speed connectivity for teaching and learning.
- Existing digital initiatives and strategies should be brought together under an umbrella programme to support a more consistent national picture.
- The digital transformation programme should include improving universal access to technologies and connectivity, training in digital skills for teachers, access to online resources and learning platforms, and safeguarding policies.

Our spotlights on on-screen assessments and online learning will bring further insights into this recommendation – to be published in Spring 2022

Summary of Phase 1

Our interim report published last year synthesised the views of over 6000 young people, parents, teachers and employers. In addition to polling 104 MPs and interviewing Expert Panel members, we opened an online public consultation which received over 900 responses. Together, they provided a strategic perspective on what people want the 14–19 phase of learning to deliver.

The research focused on three broad areas:

Purpose and Value: considering the role that education within the 14–19 phase should play in helping develop confident and well-rounded learners and supporting their life aspirations.

Conditions and Environment: exploring how wider economic, technological, and societal trends are changing what people need to know and need to be able to do.

Trust and Equity: exploring issues around fairness and coherence in the system to maintain public confidence in qualifications and assessment, and to ensure that the system serves diversity, equity and inclusion.

The consultation revealed the breadth of opinion across students, parents, teachers, academics, employers, policymakers and parliamentarians, but a number of consistent themes emerged among the opinions expressed:

- 1 Qualifications are valuable.** Young people want something to show for their years of learning and they want it assessed objectively and fairly.
- 2 Knowledge and skills are equally important and shouldn't be artificially separated.** Knowing and doing are essential prerequisites for individuals to progress in their lives.
- 3 Curricula should be empowering.** Young people should have access to powerful knowledge, relevant to the world around them.
- 4 People value choice.** Flexible routes through study, with options of a varied curriculum are seen as very important. There are differences of opinion though about how broad this choice should be and at what age specialisation should happen.
- 5 A purely academic or vocational route can be too binary.** There is broad agreement that the combination of practical and academic skills is increasingly valuable.
- 6 There is too much weight on exams.** Although important, an over-emphasis on summative high-stakes assessment is sometimes to the detriment of broader learning. On the other hand, formative assessment for learning is very valuable.
- 7 There are mixed views on school accountability.** While some believe that school accountability contributes to an over-emphasis on exams, others see it as important in driving up schools' performance. These views are not mutually exclusive. School accountability should also encourage broader learning for success in life.
- 8 There are mixed views on how grades are awarded.** There needs to be a debate about what method is best.
- 9 Teachers want more involvement in assessment.** Most teachers believe they should play a role in continuous assessments that ultimately contribute to a qualification grade.
- 10 Digital innovation needs more emphasis.** Digitisation can make assessment more relevant and inclusive but significant effort is required to make this a reality.

Phase II Research Report

1.1 This Report

This report begins by considering targets relating to outcomes within England's 14–19 curriculum and assessment system, including the balance and breadth of coverage and the development of practical skills.

In the first section, we recommend that the mapping of the National Curriculum's targeted outcomes is better communicated to subject stakeholders, partly in response to challenges around curricular coherence in England. This section also highlights the value of flexibility in curriculum design and challenges uncovered with the progression between qualifications at different levels.

Following this, we spotlight three areas of interest: diversity, equity and inclusion (DEI); technology; and employer voice.

In the first, current issues relating to attainment and assessment are considered through a DEI lens, exploring who has ownership of DEI within England's curriculum. In the second, England's readiness for deeper implementation of technological solutions within curriculum and assessment is considered, highlighting a number of fundamental challenges needing to be addressed before this can be done. Lastly, we consider the role of the employer's voice within curriculum development, noting that a long-term perspective suggests employers are becoming increasingly engaged in curriculum development, though there are key challenges and barriers that remain pertinent in the context of ongoing and proposed reforms to the post-16 phase.



1.2 Methodology

Work on this project commenced with a review of the Phase I report³, which fed into the initial design of the research framework. This draft framework was tested and refined in a workshop, facilitated by The Research Base and attended by the core project group at Pearson. A literature review was delivered to identify and collect secondary data against key research questions. A matrix was developed for each of the key dimensions of the research. Academic and grey literature were used by default, and media publications referred to where appropriate.

The core component of primary data collection was a series of workshops conducted with teaching practitioners. Teachers were drawn from a wide network of all 14–19 providers currently offering Pearson qualifications (including BTECs) with 344 practitioners expressing interest in participating. Four General Qualification (GQ) workshops and four Vocational (VQ) workshops were sampled for, with the former split further into STEM and Arts & Humanities (A&H) subjects, and the latter split into 14–16 and 16+. All participants were based in England with the exception of two in Wales and Northern Ireland. These participants' views have been included as, on balance, their country-context was not material to the specifics of the discussion they took part in.

Eight virtual workshops were held in total in September and October 2021, with up to six practitioners participating in each. To ensure coverage of the four core thematic areas in limited time, groups were asked different sets of questions – not all topics were covered in each workshop. In this report, where footnotes refer to, for example, 'two out of four workshops', this indicates that the findings of two workshops are being drawn on and that this is out of four total workshops where this topic was covered.

This research has benefited from validation at two levels, firstly from consultations on emerging findings with the project's Expert Panel⁴, who kindly donated their time over two sessions in October 2021, and secondly through a workshop held with the Pearson team in November.

A note on definitions:

A '**curriculum**' can be understood in several different senses and the word is used as such in the education literature. In its simplest form, curriculum means 'syllabus', i.e. as a list of topic of study. This conception of curriculum is not concerned with, for example, modelling how the organisation of learning experiences is expected to connect to learning objectives (a so-called Taylor or rational model), nor the negotiation of student and teacher potentials (a model most associated with Garth Boomer's work in the late 1980s) nor with 'praxis', i.e. seeing curriculum as an instrument towards the achievement of a set of social goods. This report uses the term 'curriculum' in a broad sense, to cover the total set of syllabus topics, teaching practices, learning experiences and assessment arrangements that comprise the 'substance of education'⁶. Where something narrower, like a syllabus is meant, we refer to 'programmes of study', and when assessment practices are being considered independently of curricula, we refer only to 'assessment'.

2 Exploring the Educational Experience of 14–19 Year Olds

Research by Pearson in Phase I of this project found large majorities of the public (young people, parents, teachers and employers) considered qualifications to be important but also felt that this needs to be balanced against broader considerations such as young people's preparation for life and capacity to participate in society⁷. This section notes that breadth and balance are broadly supported as outcomes for 14–19 curriculum and explores at both a national and classroom-level where curriculum and assessment development may be able to better support the realisation of these aims. The development of skills, particularly practical skills, also comes through as a key priority for future curricular outcomes.

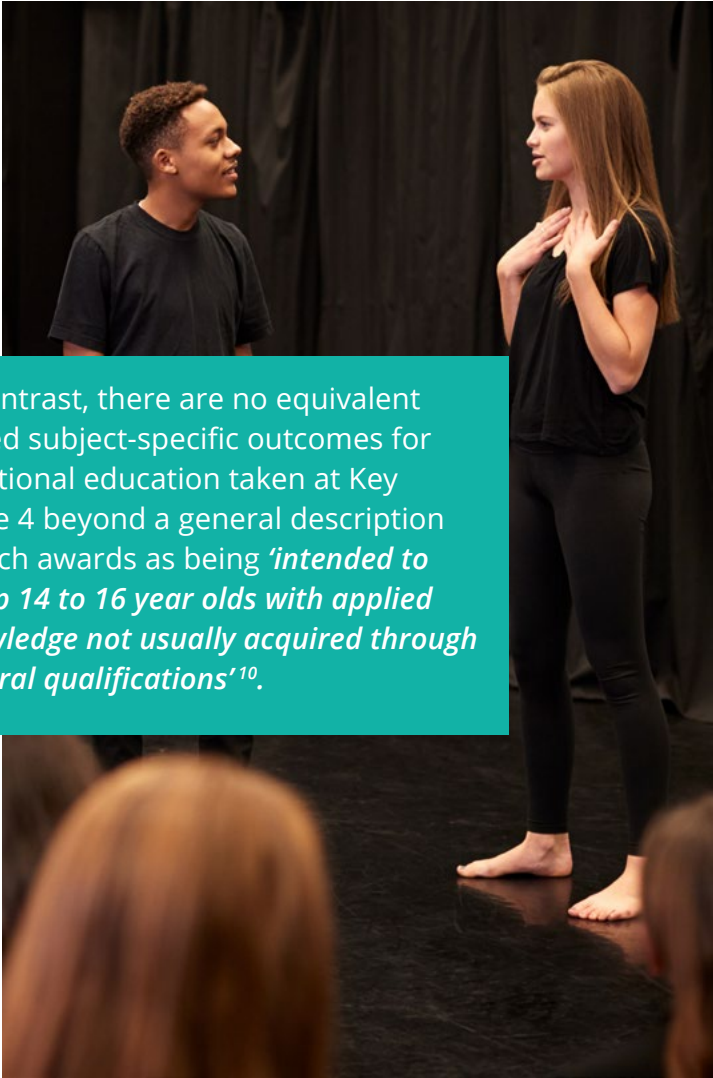


2.1 Intended Outcomes of the National Curriculum

'The explicit, overarching aim of the 2014 National Curriculum is to provide students with *'an introduction to the essential knowledge that they need to be educated citizens... [to] introduce pupils to the best that has been thought and said...and engender an appreciation of human creativity and achievement.'*^{8'}

This generally expressed aim is supplemented by discipline-specific Purposes of Study. A high-level analysis of the twelve existing Purposes of Study⁹ within the National Curriculum has identified the five key areas of intended outcomes focus:

- **Foundations.** Associated with Mathematics and Science, these support students in developing foundational skills such as arithmetic, foundational knowledge like physical laws, and *'to recognise the power of rational explanation'*. These outcomes can be understood as underpinning all those that follow below.
- **Use in everyday life and employment.** Computing, and in particular Mathematics, are singled out for their utmost importance to everyday life and *'most forms of employment'*. Computing is said to build digital literacy for both the workplace and everyday life.
- **Character development.** Many subjects are intended to have normative outcomes for students, playing an active role in shaping emotional and character development, values and spirituality. English, and especially literature, is reported to play a role in each of these, while physical education is intended to *'build character and help to embed values such as fairness and respect'*.
- **Participation in society.** Humanities subjects are intended to ensure students develop capabilities necessary for engaging socially and politically. English provides language skills: essential for enfranchisement. Citizenship explicitly considers the activities of social institutions and students' future roles in those institutions. History offers a lens through which students can think about their own identities, the challenges facing their communities, the relationships between people, the process of change, and to appreciate life's complexity.
- **Creation and appreciation of art and culture.** Lastly, the stated purpose of some subjects appears to be largely determined by the intrinsic value of the Arts. For example, the stated purpose of following the Music curriculum is simply to allow students *'to compose, and to listen with discrimination to the best in the musical canon'*. Similarly for Arts, the purpose of study is to prepare students to create and design their own creative works.



In contrast, there are no equivalent stated subject-specific outcomes for vocational education taken at Key Stage 4 beyond a general description of tech awards as being *'intended to equip 14 to 16 year olds with applied knowledge not usually acquired through general qualifications'*¹⁰.

2.1 INTENDED OUTCOMES OF THE NATIONAL CURRICULUM

Changes to the Post-16 Curriculum and the Introduction of T Levels

Learners in the post-16 phase are able to study any combination of subjects made available by institutions that are feasibly linked to training, employment, or higher education¹¹. The Government's Post-16 Skills Plan aims to introduce a vocational route mirroring the traditional academic route in the form of T Levels.

This curriculum reform was intended primarily at two outcomes: (1) skilled employment for individuals and (2) providing the English economy with needed skills.

The majority of T Level programmes have now had content developed by panels, composed of employers, professional bodies and providers¹². These final content outlines are to be developed into the technical qualifications by awarding bodies under a tendering process¹³. Further reforms and strengthening of skills pathways post-16 are anticipated in the Skills and Post-16 Education Bill.

'This Skills Plan [where T Level reforms were first proposed] is our ambitious framework to support young people and adults to secure a lifetime of sustained skilled employment and meet the needs of our growing and rapidly changing economy.'

Source: UK Government, Post-16 Skills Plan, 2016



A Broad and Balanced Curriculum?

A broad and balanced curriculum is an appropriate, high-level target outcome for the National Curriculum, according to practitioners¹⁴.

This suggests a general agreement between teachers' own ideals and the 2014 National Curriculum, which instructs: 'every state-funded school must offer a curriculum which is balanced and broadly based and which: promotes the spiritual, moral, cultural, mental and physical development of pupils at the school and of society, and prepares pupils at the school for the opportunities, responsibilities and experiences of later life'.

It may also indicate the successful diffusion of the National Curriculum's aims into the wider sector: practitioners noted that OFSTED guidance¹⁵ was also a key driver of institutions' need to balance specialisation with breadth¹⁶.

However, we found that practitioners often don't feel that the national levels framework supports the aim of breadth and balance¹⁷. There is therefore an opportunity to better communicate, or codify, the intended relationships between individual requirements of the National Curriculum and its overall aims, including breadth and balance.

In our workshops, teachers variously spoke of their subjects' respective programmes of study in the 2014 National Curriculum as *'extremely sparse', 'unrepresentative' and 'not fit for purpose'*¹⁸.

Examples of this included:

A Computer Studies teacher described their subject curriculum as having very limited substance and being full of generalisations. For Key Stages 3 and 4 together the curriculum is about 650 words in total length¹⁹, compared to the English curriculum, which for Key Stage 3²⁰ is 25 pages long, and for Key Stage 4²¹ a further seven pages.

A practitioner, by contrast, reported the Mathematics curriculum²² to be highly stable but to be unfit for 'the majority' of Further Education students as it contains a lack of relevant content for vocational learners.

A music practitioner said the vagueness of the National Curriculum²³ in their field resulted in a variety of interpretation and therefore uneven curriculum coverage between schools²⁴.

There is compelling evidence to show that the policy requiring learners to continue to work towards Grade 4 GCSE Mathematics and English beyond Key Stage 4²⁵, may be failing to address the problem it aims to solve. With a third of learners falling short of the Grade 4 threshold in Mathematics and English GCSE at age 16, and less than a third improving grades on resitting²⁶, the benefits of requiring students to resit the same qualification again are questionable. Whilst the policy was designed to drive aspiration and stronger progression to employment and further study, issues have been raised about a lack of general understanding of the reasons for 'low attainment', the extent to which learners benefit from resit provision at all, and the capacity of the sector to support high quality provision^{27,28,29}. In this context it is important also to question whether the approach to arriving at the final grades for resitting students should be underpinned by the comparable outcome principle for grading³⁰.

2.1 INTENDED OUTCOMES OF THE NATIONAL CURRICULUM

A Disjointed Curriculum

Curriculum coherence in England was intended to be achieved by the 2014 National Curriculum through clear and exacting standards and the implementation of external assessment to control this. But there is *'little prospect'* that the 2014 National Curriculum will achieve this according to a 2018 Policy Exchange paper largely sympathetic to the reform's aims and its central tenets³¹.

The reasons for this were cited as:

A lack of a quality assurance system for curriculum across schools.

The unacceptable and unsustainable workload demanded of teachers in terms of resource development.

While the first of these factors is addressed by the 2019 Education Inspection Framework (EIF), the coherence challenge faced by the curriculum in England is unlikely to be resolved while this system continues to rely on practitioner altruism. Instead, it is likely to lead to a greater inconsistency in the education experience of young learners.

A participant from our Expert Panel observed disjointedness between the 14–19 phase and higher education, reporting that the system in England is not clear on what it wants from each phase. Similarly, a recent UCL report described individual GCSEs and A levels functioning independently of each other: *"[they are] single subjects which at best function as curriculum building blocks but fall short of offering overall curriculum purpose"*³². Moreover, post-16 – i.e. beyond the remit of the National Curriculum – situating curricula within any framework of outcomes is an area devolved to educational institutions³³. Practitioners in our workshops echoed this, noting that the National Curriculum was not coherent (*'We're all our own little piece'*) and that while foundational skills are 'riddled' throughout all classroom curricula, it is very difficult to say how this fits into the National Curriculum³⁴.

International Comparison: The New Zealand Curriculum, 2015

It is possible to give a high-level strategic breakdown of The New Zealand Curriculum for learners 4–17 in terms of named values (e.g. 'innovation, inquiry, and curiosity', 'ecological sustainability', and 'community and participation'), cross-cutting competencies (thinking, using language, self-management, relating to others) and specific principles to support curriculum planners in translating the national framework into teachable lesson content (notably including coherence, future focus, learning to learn, and cultural diversity).

While New Zealand's curriculum is divergent from England in many aspects and is not necessarily recommended as a replicable model, this gives an indication of the kind of output that may help address issues of curriculum coherence in England and facilitate practitioners' understanding of their role within the broader national educational project.

**Source: New Zealand Ministry of Education:
The New Zealand Curriculum, 2015**

2.2 Current Problems with Student Pathways and Progression

Pathway Inflexibility

The delivery of vocational qualifications can often be more responsive to student needs and interests than GCSE courses³⁵. With some vocational curricula it is possible to tailor and contextualise course content for relevance to students *in situ* and allow them to follow up on their own interests and desired pathway. In contrast, GCSE provision is often *'staid'*, according to participants³⁶. In one workshop, practitioners felt that vocational courses too were becoming less responsive to learners' needs as assessments had become more prescriptive.

Vocational practitioners in the workshops also expressed an interest in curriculum pathways where learners could customise their module options or courses, combining general and vocational components. Practitioners particularly noted the advantages this would provide in terms of meeting the immediate skills needs of local communities. For example, a practitioner spoke of the importance of being able to set their own work assignment briefs based on their locality. Another noted the previous flexibility built into vocational qualifications, which formerly allowed the importing of modules from elsewhere in order to meet employer needs³⁷. Credit-based frameworks that allow for personalisation are not a new concept in England³⁸ with various attempts at their introduction met with different challenges³⁹.

Nevertheless, the need for a degree of flexibility within existing structures is still felt by teachers.

However, practitioners were also quick to flag potential issues with this flexibility, helping to set parameters within which curriculum flexibility would need to be delivered. Curriculum flexibility should, according to participants⁴⁰:

- Be proportionate to learners' age and maturity, noting teachers are sometimes better placed to direct learners towards subject matter required for professional progression.
- Recognise that cohort size is generally what determines how many different options can be offered within a qualification.
- Be mindful of and responsive to teachers' expertise, understanding that individual teachers are not specialists across disciplines.
- Account for the inflexibility of schools, which are settings in which everyone must be in a certain place at a certain time. Flexible curricula therefore should be developed that are still deliverable in these controlled settings.

Poor Pathway Progression

This research revealed various challenges with the alignment between present qualifications at different Levels, suggesting future qualification design would benefit from a 'vertical' lens, ensuring that curricular content (and assessment practices) is more clearly articulated between levels. For example, a specific challenge has been noted within English Language, where the decline in A Level take up has been partially attributed to students' incorrect assumption that the A level programme of study will pick up from where the GCSE – a course they have not enjoyed – left off⁴¹.

Participants in the practitioner workshops gave several examples of disjointed progression between Level 2 and 3 in some vocational courses, such as the use of Functional Skills qualifications as stepping stones to GCSE qualifications where the qualifications are not properly designed for this (*'it's not giving them the building blocks'*), and an expectation on some vocational qualifications that distinction grades on these courses represent near professional standards: *'we'd expect our level 6 students on the BA Honours to be a near professional standard because they are stepping into the door of the [music] industry, but really, you do your BTEC and move onto your HE normally, unless you've got an exceptional student who's ready to go on tour'*.

A Narrowing Classroom Curriculum

Despite the ambition for breadth and balance in the 14–19 curriculum, there is evidence from both the education literature and our practitioner workshops of a significant narrowing of curricula over recent years. Practitioners across Arts and Humanities and STEM subjects gave various examples of this across disciplines, spanning both the contraction of the curriculum overall and of individual programmes of study. An institution was cited where Computer Science, because of its increasingly ‘academic’ content, is now reserved for hand-picked, high ability students as an additional course alongside other qualifications.’

In the literature, a notable casualty of a narrow curriculum has been modern foreign language teaching⁴². Schools have found it challenging to reconcile a vision for all students to participate in language learning post-14 with the need to meet government performance measures by achieving ‘good’ exam results⁴³. The result was a narrower curriculum for low to middle attainers. (It should be acknowledged here that attempts to resolve issues with GCSE language qualifications have been recently announced by Ofqual in 2021⁴⁴). A survey of headteachers, heads of departments, and students found that students are interested in studying a wider range of languages – particularly Spanish, Italian, German and Chinese – due to their perceived greater usefulness for life beyond school, contrasting with the staffing, recruitment, curriculum planning and timetabling constraints that determine current provision⁴⁵.

Unintended Consequences of School Accountability

School accountability measures can act as mechanisms to limit the breadth and ambition of curricula. New accountability measures such as the EBacc and Progress 8 are focused on outcomes data for a narrower range of subjects – those appraised as ‘core’ – compared to previous accountability systems, with consequences for the incentive structure within schools deciding which students can access which qualifications.

Practitioners participating in our workshops noted that higher ability learners are often bracketed off from other 14–19 learners and their choice of curriculum is thereby restricted. For example, higher ability students may be obliged to take certain qualifications that will produce good results in Progress 8 and Attainment 8* subjects, such as Triple Science, and in so doing be precluded from choosing an Arts subject.



2.3 A Vision for Future Assessment

In this section we explore practitioners' vision for the future of assessment at 14–19 in relation to educational outcomes. This vision can be summarised as an assessment regime that:

Tests knowledge, skills and development.

Measures practical skills, where this is the focus of the field of learning.

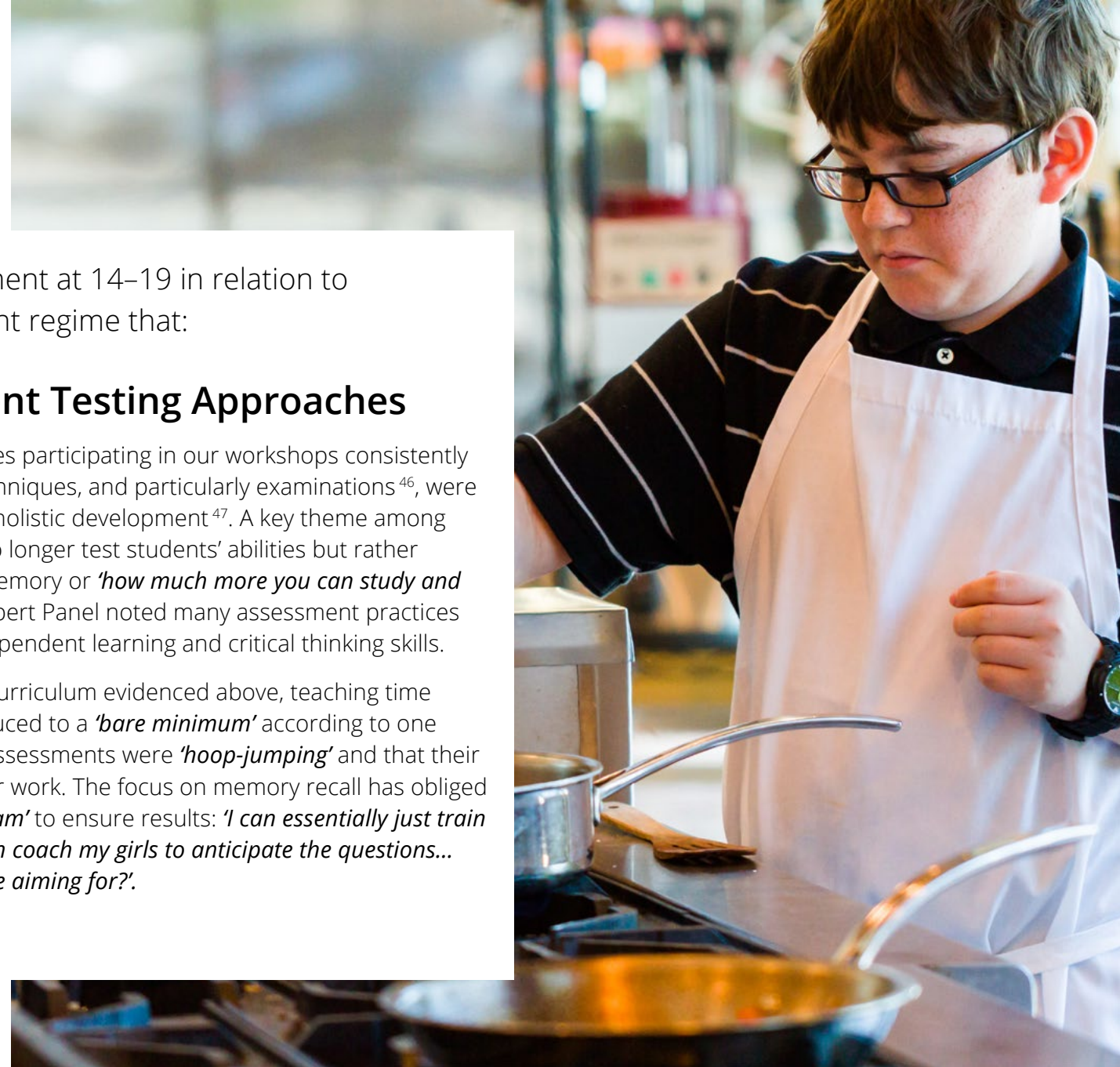
Is delivered in several '*chunks*', rather than relying on singular, high stakes examinations.

In vocational fields, practitioners also reported that the volume of assessment should be reduced in order to allow for greater skills development and across subjects.

Challenges with Current Testing Approaches

Practitioners from all subject disciplines participating in our workshops consistently reported that current assessment techniques, and particularly examinations⁴⁶, were not set up to effectively test learners' holistic development⁴⁷. A key theme among practitioners was that assessments no longer test students' abilities but rather force them to demonstrate feats of memory or '*how much more you can study and regurgitate*'. A participant from our Expert Panel noted many assessment practices are '*fact-based*' at the expense of independent learning and critical thinking skills.

Relating to the narrowing classroom curriculum evidenced above, teaching time and curricular content have been reduced to a '*bare minimum*' according to one practitioner, with others feeling that assessments were '*hoop-jumping*' and that their qualifications were not preparation for work. The focus on memory recall has obliged teachers to teach by rote or '*to the exam*' to ensure results: '*I can essentially just train them to do really well... nowadays I can coach my girls to anticipate the questions... So I get good results but is it what we're aiming for?*'.



Academic Drift

'They're not expecting to be writing reports all day, they're expecting to move onto a shop floor. They seek a range of skills because they didn't want to follow the A level route because of the writing.'

'I'm asking them to make a ratatouille, not spell ratatouille'

— Practitioners participating in the workshops.

Assessments should give students more space to demonstrate their development of core, practical, and disciplinary skills, in response to concerns from practitioners that current practice does not meet learner or employer needs in this regard.

Arts, Humanities and some vocational practitioners participating in the workshops felt current assessment practices do not sufficiently assess learners' abilities to demonstrate skills. There is insufficient focus on the core competencies that constitute different disciplines of study⁴⁸. A participant from our Expert Panel noted that academic drift was the **'main concern'** for technical assessment at present, and that preparing vocational students for academic assessment practices dilutes the effectiveness of technical education overall. In the workshops, teachers often repeated that students are not being assessed on what they can actually **'do'**. One such example was given by tutor on a Hospitality and Catering qualification who reported that assessment in their subject did not reflect cooking ability as much as their ability to write about cookery.

Meanwhile, STEM practitioners in the workshops reported a knock-on consequence for classroom practice⁴⁹. They explained that **'fluency retrieval'** has become necessary for accessing examinations, especially for lower-ability (insert hyphen) students, leading to a heavy focus in class on key words, definitions, and their use in context. As a result, one teacher stated each of their lessons now begins with memory exercises on core questions from practice papers. Another noted that across STEM vocational provision the emphasis is now on semantics rather than **'real learning'**.

Under-emphasis on Practical Skills

The under-emphasis on practical skills was thought by practitioners in the workshops to fail to meet both learner and employer needs. Practitioners spoke of the mismatch between learners' expectations of programmes – which they had selected in part as they had a desire to learn hands-on skills – and the reality of theory-heavy courses in subjects such as Engineering, Performing Arts, and Sports Science. They noted **'shock'** among students, and in one case had implemented practical learning sessions in addition to the set programme of study in order to placate students⁵⁰.

Teachers of STEM subjects reported running three-year GCSE courses to cover some more **'real-world stuff'**. One teacher acknowledged that whilst this may be against OFSTED best practice they had no choice if lower ability students were to be sufficiently prepared⁵¹. A 2021 survey from the National Foundation for Education Research found this practice to be widespread, with a majority of schools beginning to teach GCSE content when students are in Year 9⁵².

Prescriptive Learning at the Expense of Employment

Practitioners in the workshops also felt the under-emphasis on developing and assessing practical skills in many cases failed to meet employers' needs. Performing Arts teachers reported that high-skill students, ready to secure employment at auditions, were prevented from receiving top marks in their course by their lower writing ability. This would not obstruct students from gaining employment in the sector as they were high quality performers.

A Regressive Assessment Structure?

Mixed methods of assessment delivered in smaller ‘*chunks*’ were considered more effective than longer, single-delivery, make-or-break exams in our research. A STEM practitioner, for example, compared the 14–19 phase with higher education, arguing that a single period of terminal examinations at the end of year three would not be accepted as an effective way to assess a degree learner’s skills or attainment⁵³. This may be compounded further for learners needing additional support who may end up with back-to-back examinations of in excess of three hours each if extra time is given.

Excessive Assessment Volume in Vocational Subjects

The expansiveness of the assessment regime comes at the expense of real skills development for progression to employment or higher education. Practitioners in vocational fields reported that reforms to Tech Level and Applied General programmes in 2016, prompted by changes to technical requirements⁵⁴, marked a significant increase in the volume and level of difficulty of assessment to be delivered on their courses⁵⁵. Vocational teachers cited examples of assessments that run to 50–60 pages each that learners had to complete. In Applied Science and Performing Arts, teachers compared their vocational qualifications’ difficulty to qualifications at degree level, reporting that the lower-level qualifications are more difficult than university programmes.

Vocational practitioners also noted that too much similarity between general and vocational assessment arrangements have shaped curriculum pathways for learners in their subject areas⁵⁶. Participants reported, for example, that some learners are choosing not to progress to Level 3 vocational programmes, put off by their experiences of the examination regime.

Assessment and its Impact on Mental Health

‘In the classroom we’re having increased numbers of anxiety and panic attacks whenever we speak about deadlines or upcoming assessments.’

— Practitioner participating in the workshops.

There is an emerging body of evidence of a mental health impact of current assessment arrangements on students 14–19 from both the literature, including the findings of the first phase of this research⁵⁷, and practitioner workshops from this current phase.

In the latter, practitioners of both STEM and Arts and Humanities fields reported assessment-related concerns for the mental health of their learners⁵⁸. Mental health issues were flagged as a worsening problem in new cohorts, with a practitioner noting particular concerns relating to one-off, high stakes examinations. That’s not to say learners should not take examinations because they are stressful. Recent research about the impacts of the learning loss during the pandemic, points to potential negative impacts on learners’ confidence when assessments do not take place and learners are unable to receive reinforcing feedback⁵⁹.

2.3 A VISION FOR FUTURE ASSESSMENT

Stress and Demoralisation Linked to Attendance, Assessments and Curriculum

A survey commissioned by the National Education Union and the Association of School and College Leaders in 2019 found demoralisation had led to some pupils refusing to sit both mock and actual exams ⁶⁰. This was echoed in our practitioner workshops by a participant who explained that students struggling with existing mental health issues were sometimes put off assignments on sight by their scale, going on to miss lessons.

Stress and demoralisation are likely to be one of the factors behind recently measured increases in unauthorised student absences in England ⁶¹. In addition, a 2020 study of schools in an area of high deprivation suggests unauthorised student absences may also be partly attributable to wider alienation from an inaccessible curriculum, rather than just disaffection with assessment methods ⁶². These points link back to evidence about a disjointed curriculum, explored earlier in section 2.1.

Section Summary – Exploring the Educational Experience of 14-19 year olds

Our research identified that the most recent articulation of the purposes for education in England point to economic outcomes, cultural development and preparation for adult life. The literature reveals statements of ambition that fail to draw connections between defining what the education experience should be and delivering it for learners. Clearer links between these purposes to the curriculum could be transformational for learners in understanding how study choices help meet career and life goals.

Evident from our research is that almost all of what is taught in the 14-19 phase is dictated by what is assessed and this has a narrowing effect on what students are exposed to. A coherent curriculum framework should set out first what should be taught and learned, and then appropriate assessment can follow.

A single framework that shows a clear curriculum journey through the 14–19 phase of education – making links between the purpose of education, learning at the various stages, and expected outcomes – would be beneficial to all. A good example of where a single framework could have a positive impact is in considering the policy that currently requires learners to continue to work towards Grade 4 GCSE Mathematics and English beyond Key Stage 4 ⁶³, where evidence suggests it may be failing to address the problem it aims to solve.

Our research from both Phase I and II has established that objective assessment of students' learning is important both as motivation but also to provide a useful external benchmark in a learner's development. Objective assessment provides a valuable commodity for those without the social capital outside of the education system to promote their capabilities to progress, but it is important that we assess the right skills in the right way for the right reasons.

3 Issues Relating to Diversity, Equity, and Inclusion



This section explores how effectively the current curriculum and assessment system functions in relation to diversity, equity and inclusion (DEI) across the education sector. This encompasses issues around fairness and coherence in the current system of qualifications and assessment, highlights areas of best practice across the academic and vocational sectors, and looks forward at how the diversity, equity and inclusion agenda can be furthered within curriculum and assessment design. It also analyses the key players driving forward change and innovation across the sector.

Within the current research, the primary focus has been on DEI issues related to socioeconomic and regional impact, as well as Black, Asian and other ethnic minority groups (including minority ethnolinguistic groups). Gender, LGBT+, and special education needs and disabilities (SEND) have not constituted a core focus for the current research, although relevant evidence has been highlighted where it intersects with the broader research questions. For the purposes of this research, the focus for DEI topics has been on the design and delivery of curricula and assessments. However, where relevant, evidence that points towards the ways in which institutional structures and policies form the precondition for effective learning from a DEI perspective has been incorporated within the analysis.

While frameworks exist to regulate how schools and colleges operate with regard to DEI ^{63,64,65}, as the below highlights, there is a vibrant debate around DEI considerations from across the sector, with many actors working to champion innovative and inclusive approaches to the design and delivery of curricula and assessment in order to address long-standing challenges.

3.1 Attainment and Curriculum Content

In 2015, GCSE reforms introduced more demanding content: mandating an increase in assessment only by final exams (in most subjects) and revamped grading to a numbered grading system (9-1) ⁶⁶. At the same time, the Attainment 8 measure was introduced to assess across eight different subjects selected from the curriculum according to a published formula.

Attainment 8 data indicate that the attainment gap is greatest for young people experiencing socio-economic disadvantage and for young people with special educational needs ⁶⁷. There is a complex picture with regard to ethnicity, but across all ethnic groups, girls score higher than boys ⁶⁸.

There is debate about how education reforms have improved, or otherwise, the attainment gap for the most disadvantaged students. Critics of recent education reforms note that measures of progress and success cannot be based exclusively on attainment scores. The English Baccalaureate (Ebacc) has reinforced the traditional focus on core academic subjects and therefore arguments have been made that it fails to prepare all students for diverse career opportunities, especially those following vocational and Arts-based pathways ⁶⁹. In contrast a 2017 UCL study indicated a link between Ebacc subjects and greater opportunities in further education ⁷⁰.

The Attainment Gap and Digital Inequalities

Workshop practitioners were in agreement with research from the past two years that has revealed considerable technological inequality among learners, further exacerbating the attainment gap ⁷¹.

While a lack of technology at home was itself the key issue raised, preventing learners from participating fully – or at all – in remote classrooms and work assignments, the issue was reported to extend further. Participants cited a lack of digital skills at home, limited access to software packages and lack of familiarity with common technological practices and devices (e.g. where a student does not have home internet access but the syllabus or examination refer to wireless home technology products) as factors complicating the issue beyond mere access to a laptop. These issues are explored in more detail in the Technology section of this report.

Source: Practitioner Workshops



A Lack of Diversity and Representation in Learning?

Links between curriculum content and assessment modes/attainment at the 14–19 phase may be under-researched ⁷², but there could be much to learn from higher education institutions. The BME Attainment Gap project, led by Kingston University with a consortium of higher education partners, is currently assessing the impact of a number of possible mechanisms to reduce the attainment or awarding gap for ethnic minority students, including the development of inclusive curricula ⁷³. While the challenges facing higher education in terms of attainment differ from 14–19 education, many of the core principles are shared, including visibility of diverse role models and the creation of accessible and relevant curricula in preparation for future work in a rapidly changing global environment. As noted in the preceding section, there is also a strong focus within 14–19 education on the value of knowledge acquired through education as a form of cultural capital linked to improved longer-term outcomes.

Sector specialists have highlighted how students from ethnic minorities, students with special educational needs or disabilities, disadvantaged and excluded students, and those from other minority backgrounds are not adequately represented across the national curriculum.

At GCSE level, it is estimated that only 11% of students follow curricula that refers to Black history in the UK with less than one in ten studying modules that explore the history of the British Empire. At present, the Government has ruled out calls for Black history to be a mandatory topic in 14–19 history curricula, leaving curriculum content at the discretion of schools and exam boards ⁷⁴. Whilst there is discretion for schools to decide, the reality is that there is little time to explore curriculum outside of what will be assessed through final exams. The Head of English at one secondary school, quoted in a research report, noted that: *'This curriculum, I think, has really squashed a sense of diversity, because we do fewer women writers, we do fewer writers of colour, and that, I don't think, is a good thing. Especially in a school with an intake which is as diverse as ours'*. ⁷⁵

A Narrow Cultural Literacy?

The current National Curriculum includes the overarching goal to introduce students *'to the best that has been thought and said'*. ⁷⁶ In our research some teachers, in particular those teaching Music, raised concerns that the application of this principle has led to an exclusive focus on a traditional 'canon' within the Arts and Humanities, which indirectly excludes artistic works produced from a more diverse range of literary and artistic traditions. Teachers felt that the Western classical canon was taken to be the core musical standard and that students had to be steered away from their personal musical interests in order to succeed in line with the programme of study.

3.2 Curriculum Design and Ownership

Cross-Sector Ownership of DEI

Ownership of diversity, equity and inclusion within the 14–19 curriculum spans across the education sector. Key players include centralised authorities responsible for the design of the National Curriculum and its delivery in schools, as well as qualification criteria, including the Department for Education, Ofqual and Ofsted; awarding bodies responsible for designing qualifications and assessments; and schools and teachers responsible for implementing curricula and preparing students for these assessments. The strength of developing cross-sector ownership for DEI is that it encourages innovation and reflective practice at all levels.

Practitioners across STEM, Arts and vocational disciplines reported that stakeholders at all levels ought to be responsible for ensuring that diversity, equity and inclusion are incorporated within curriculum and assessment ⁷⁷. Examples of how schools and colleges embedded DEI considerations into curriculum and assessment decisions included discussion of diversity at curriculum meetings, school policies about respect for all, appointment of diversity champions and themed weeks or events ⁷⁸.

DEI Ownership in the Vocational Sector

The Post-16 Skills Plan gives employers a key role within the vocational space since they are being held up as the standards-setters: *'Employers will sit at the heart of the system and take the lead in setting the standards'*. ⁷⁹ The Education and Training Foundation – the national partner responsible for delivering training and support to FE colleges and teachers to deliver T Levels – also emphasises the value of engaging businesses in the *'co-production and co-delivery'* of curricula ⁸⁰. Teachers and trainers have also embraced the new T Level curricula, taking an active role in curriculum design and delivery, including working creatively within the restrictions necessitated by the pandemic ⁸¹.

In terms of the DEI agenda, however, the challenges facing the further education sector are considerable. For instance, Black, Asian and ethnically diverse students are significantly underrepresented within those starting an apprenticeship, especially amongst students aged 16–18, with the stereotype of apprentices being White having a direct impact on Black, Asian and ethnically diverse students' chances of successful recruitment for apprenticeship roles ⁸². Despite this, there is clear evidence that further education colleges are taking the lead in developing best practice to redress structural inequalities, for instance working to embed DEI into the design and delivery of programmes of study ⁸³, including use of data to ensure that students from disadvantaged backgrounds, or groups of students who share protected characteristics, are treated equitably across all aspects of their learning journey ⁸⁴.

Building DEI Capacity

Schools are required to meet their legal obligations under equality legislation in the design and delivery of specific programmes of study but do have scope in terms of how (and how much) to address DEI issues directly in teaching and learning.

In practice, the focus on attainment measures and cycles of school inspections has resulted in the need for additional support to enable schools and teachers to take ownership of the development of programmes of study^{85,86}. Increasingly, this support is provided by external organisations developing bespoke resources and training programmes for schools and teachers.

Teachers have a critical role to play in embedding diversity, equity and inclusion within the curriculum in two ways: firstly, by embedding relevant topics within existing curricula to broaden and diversify content, and secondly, by directly tackling structural considerations that may have an impact on issues such as accessibility and outcomes from a DEI perspective. There is a growing wealth of training and resources available to teachers to take ownership of DEI within the curriculum on both fronts^{87,88,89}.

Practitioners participating in the workshops also emphasised the need for training in order to be able to better work towards diversity, equity, and inclusion in the classroom⁹⁰. Arts and Humanities practitioners in particular explained that they understood and supported the need for diversity in the curriculum, but felt that the act of doing so required making space for themselves to diversify their own subject knowledge. There was also a secondary concern raised that existing training is focused on pedagogy rather than subject expertise, leaving teachers limited in their capacity to diversify their knowledge.

There are broader structural issues at play which affect the extent to which DEI issues intersect with the design and delivery of curricula within schools. Most notably, students from deprived areas are less likely to attend schools staffed by experienced teachers and/or those with a subject specialism. A 2017 report by the Social Market Foundation noted that 7% of teachers in more deprived areas have ten or more years' experience compared with 12% in more affluent areas, while the Geographical Association has published data indicating that 70% of teachers delivering GCSE Geography curriculum in deprived areas are subject specialists, compared with 80% of teachers in more affluent areas^{91,92}. These structural issues have the potential to further exacerbate the widening attainment gap that results from socioeconomic deprivation. Recommendations to tackle these issues include requiring all prospective school head teachers to have worked in a disadvantaged school, and piloting other incentive schemes to improve recruitment and retention of skilled and experienced teachers in deprived areas⁹³.



3.3 How Assessment Impacts Students with Additional Needs

Primary research with practitioners indicates that the current assessment models may unfairly disadvantage students with additional language and communication needs. Specific challenges highlighted by practitioners include⁹⁴ too much focus on examinations at the expense of practical assessments and the use of scenario-based questions in examinations.

The first issue was highlighted by a Health and Social Care practitioner citing one of her most able learners who has been living in the UK for three years and had English as an additional language. The focus on written assessments and a lack of practical assessments to demonstrate her vocational skills, has left her struggling with the course. In another instance, STEM practitioners felt strongly that comprehension of assessment questions was a key DEI challenge in their field. Participants stressed that 14–19 learners with Key Stage 2 reading levels find examinations simply not accessible, and the learners faced particular difficulty when certain topics were assessed by scenario-based questions which required an understanding of contexts and language they may not have studied as part of the curriculum.

Innovative techniques, including greater use of technology (see the Technology section in this report for further considerations in this regard), should be explored in order to better support students with additional needs to successfully navigate current assessment models⁹⁵.

Section Summary – Issues related to Diversity, Equity & Inclusion

The curriculum should reflect the diversity of the world we live in – this came through clearly from the Phase I research. Even where students may already see themselves reflected, they should see others reflected too – this ultimately helps to build an inclusive society where everyone is valued. Teachers told us there were lost opportunities to inspire learners and stimulate their ambitions either because they do not have the space for creativity in the curriculum content to bring in diversity of thought, or because young people fail to connect with learning because the curriculum does not sufficiently reflect or represent their lives. They need more support to make this happen. It's important that we work together to create greater diversity and representation in the curriculum that reflects young people's lives to better engage and support them in learning.

4 Expanding Employer Engagement with Education



4.1 Employer Engagement in Curriculum since 2000

Employer engagement in education has a long history in England⁹⁶, with the objectives of this engagement shifting in response to factors including the socio-political and economic climate, demographic challenges, industry skills shortages, and the need to address issues of access, as well as diversity, equality and inclusion (DEI) concerns⁹⁷. Since 2000, the intersection of these factors has led to a steady increase in employer engagement, input and voice within both academic and vocational curricula. Despite significant barriers to employers engaging effectively with curriculum design, England is well positioned to continue developing closer ties between employers and curriculum stakeholders.



Links between employers and education providers range from the relatively light touch, such as work-related learning, careers education and enterprise education, to provision of work placements and where employers have had direct input into curriculum and qualification design in, for example, BTECs and T Levels. A member of our expert panel noted that the impact of employer engagement in the curriculum was often minimal because it is typically restricted to initial consultation regarding content for programmes of study. What matters more, according to this participant, is employer co-design *and* co-delivery of the curriculum, while the key to effective, up-to-date engagement is that it has to be *'year in, year out'*⁹⁸.

From 2000 onwards, increased research and evaluation of the benefits of closer involvement of employers in the education sector contributed to a new wave of collaboration between key stakeholders including government departments, businesses, education professionals, academics, charities, employers, trade unions, and other professional bodies including the Qualifications and Curriculum Authority (QCA) and Ofsted⁹⁹. This period also saw increased employer engagement through an emphasis on incorporating Enterprise skills into the curriculum, as outlined in the 2002 Davies Review¹⁰⁰, and the short-lived 14–19 Diploma, which involved intensive employer involvement at all levels of delivery through design, training and assessment¹⁰¹.

Employer engagement following the publication of the 2009 White Paper and plans for the 14–19 Diploma reached new heights with extended employer responsibilities that went well beyond the world of work-exposure events and activities to active participation in curriculum and qualification design. This placed enormous pressure on employers and sector experts as these responsibilities often exceeded their technical ability and took place on a voluntary basis. Once the 14–19 Diploma was cancelled, there was also criticism of the lack of recognition for those stakeholders who had devoted their efforts to it¹⁰², all of which serves to highlight the nebulous responsibilities of employers in the education sector.

4.1 EMPLOYER ENGAGEMENT IN CURRICULUM SINCE 2000

The 2011 Wolf Report aimed to bring clarity around the role of employers with its recommendations that employer endorsement become a key criterion in the development and recognition of vocational qualifications ¹⁰³; recommendations that were highlighted by the Government as part of the rationale informing the role given to employers in the design and roll out of T Levels (see below) ¹⁰⁴.

Introducing T Levels

Employers have been given a critical role to play in the development of T Levels. Panels comprising industry experts, employers and providers have been responsible for developing the occupational standards that have informed programmes of study, design and assessment as well as contributing to communications and engagement strategies to promote T Levels ¹⁰⁵.

There has been positive early student and employer feedback on T Levels ^{106,107}. But perspectives shared in practitioner workshops were less favourable. Vocational practitioners reported concerns that the introduction of the T Level route would lead to reduced employer provision for students in some areas such as sport where there were competing demands on their limited availability. Other practitioners reported a lack of employers to support placements in some parts of the country.



4.2 Weighting Employers' Needs Appropriately

'Isn't it better to give them all diverse education so then they can go anywhere?'

'I don't think the employers can stipulate [curriculum] because then we just become a sausage factory.'

— Practitioners participating in the workshops.

While it is clearly important that qualifications, particularly vocational ones, are reflective of skills presently valued or in short supply within local and national economies, there is a need to strike a balance between skills that are of immediate value and those transferable skills that are more likely to remain of value to learners and the economy in the long term.

Practitioners generally felt curricular focus should be on widening the array of opportunities students have available to them and on the development of a broad set of transferable skills. Practitioners in the workshops suggested limits to the appropriate role employers ought to play in influencing curriculum and assessment design based on this ¹⁰⁸. They were concerned about the breadth of development provided to students within employer-led skills systems and about the extent to which employer-led skills systems are future-proofed (see box). Both of these challenges were also reflected in the views expressed by members of our Expert Panel.

Members of the Expert Panel were cautious with regard to the extent to which they felt employers should lead the skills system, with one expert rejecting the idea that there should be an employer-led skills system at all and reporting an *'employer-influenced'* system might be more appropriate.

Attempting to pre-empt all future skills needs was considered, more broadly, prone to error considering the significant and unexpected leaps that, historically, the workforce has taken. Instead, several panel members suggested we ought to be preparing learners to learn, train, and re-train their skills throughout their lives. There should also be a focus on what skills learners need for their careers, for example, teamwork and critical thinking. Employers tend to neglect these in curricula because they want, for example, *'driving skills'*.

'Learning in the TVET space is about getting people into work. Not about filling current skills shortages because some employers are shouting louder'.¹⁰⁹

— Expert Panel participant.

4.3 Employer Engagement and Work Placement

T Levels

Whilst T Levels have been designed with close engagement with employers, in terms of practicality, the consensus among vocational practitioners in the workshops was that the 45-day work placement requirement was unachievable at scale. Practitioners explained that they did not expect there to be sufficient placement opportunities in their areas to be able to deliver these qualifications. In turn, they felt that this also limited students' opportunities. One school-based practitioner noted that compulsory T Levels could require her institution to close their current vocational course and transfer it to a local FE college. This concern – that certain institutions are not suited to deliver these new qualifications – was also echoed by members of the expert panel. An expert panel member shared concerns that schools generally did not currently have the capabilities to engage with employers on this scale, with colleges better placed to take on this role. Concern was also expressed at a divide that this could exacerbate between FE and Sixth Form Colleges whereby all employer resources were focussed on the former, leaving none for the latter.

Practitioners' Engagement with Employers on Curriculum

Participants in the practitioner workshops identified various modes of employer engagement, although these primarily fell within the 'low level' category, with participants frequently citing inviting employers to guest lecture or facilitate workshops, and sending students out on work placements or observations ¹¹⁰. These modes of engagement sat outside official or statutorily mandated frameworks, however, with engagement tending to stem from staff members' existing professional networks, particularly where teachers have worked or continue to work in industry, with participants consistently emphasising the personal effort required by teachers to secure these opportunities. A practitioner explained that it was typical for their institution to rely on companies where students' parents worked, while another explained she simply engaged with employers ad hoc while out on other business.

Feedback from a small sample of employer interviews held to test the emerging findings of this section of the report found that employers were keen to engage with schools and colleges, and identified benefits for their organisations in terms of skills development and recruitment through engagement. However, two out of three interviewees referred to waiting for invitations before engaging with schools and colleges, as well as broader uncertainties around the best approach to engagement ¹¹¹.

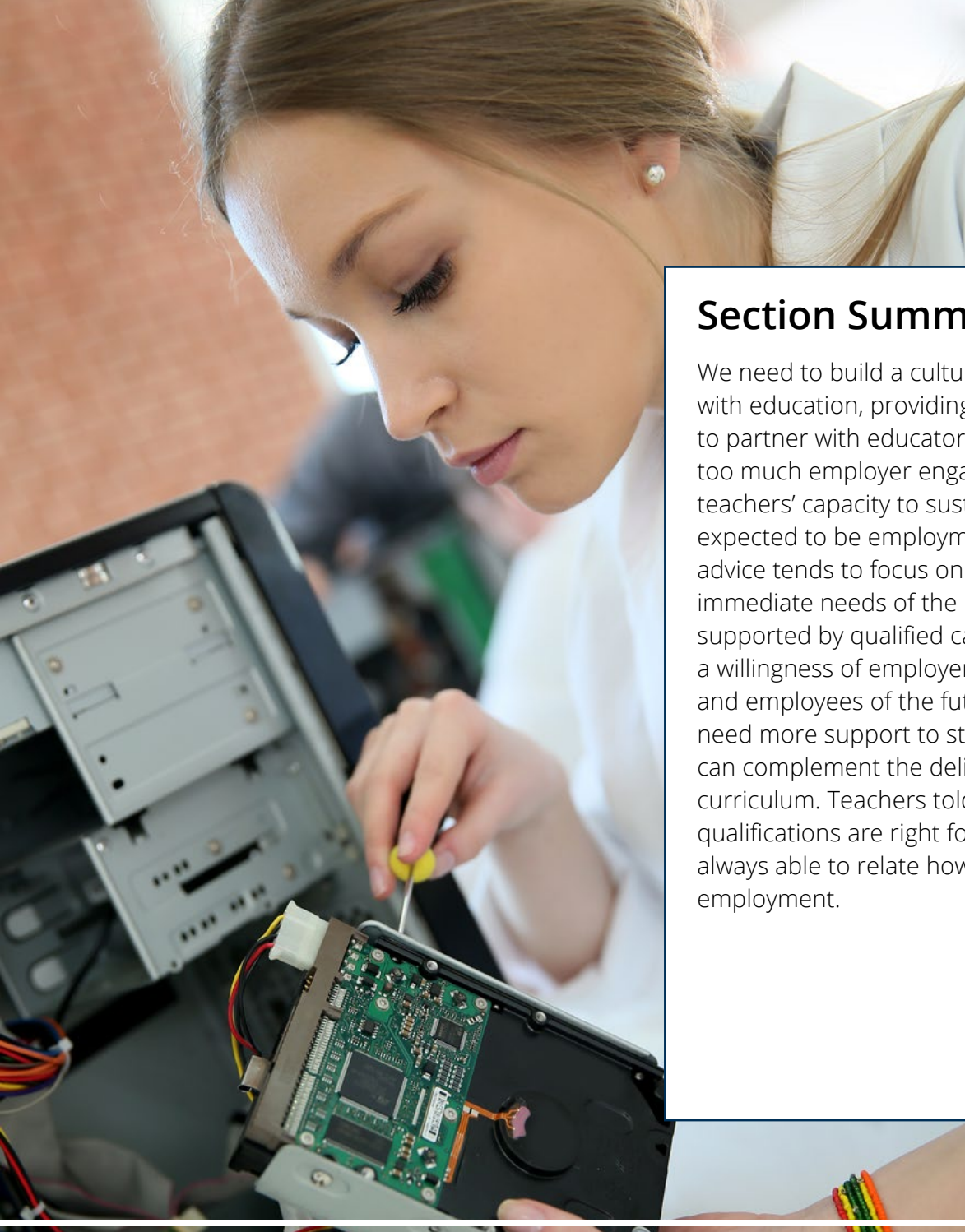
Barriers to Engagement

In terms of maintaining consistent and effective engagement between education providers and employers, there are a number of challenges reported by workshop practitioners and/or identified in the research literature. These include the inconsistent, short-term policy landscape that prevents longer term, meaningful and productive engagements to be developed and sustained ¹¹². A move to remote working caused by the pandemic has had a significant impact on education-employer engagement with disruption to vital in-person activities, although there have been some new opportunities offered through online engagement activities ¹¹³. The government's Careers Strategy has supported the move to online employer education for the provision of careers-related curricula, activities and events ¹¹⁴.

There is currently no statutory requirement for employers to engage with the education sector, which means the engagements that do exist are dependent on the goodwill of employers to offer their services ¹¹⁵. A 2014 study by the Department for Business Innovation and Skills reinforced the idea that the main motivations for engagement are altruistic, suggesting there is a lack of understanding among employers around the benefits of school engagement to industry ¹¹⁶. Practitioners reported a number of challenges in supporting students to find relevant and accessible work placements. One practitioner based in a deprived area (*'our students would normally move out of county to progress'*) explained that her institution's *'first duty'* was to provide the local community with trained students that could enter into the local workforce and meet specific local skills shortages within the manufacturing and energy sectors ¹¹⁷. Physically transporting students to work places was noted as difficult in some circumstances, for example, for those in rural areas that are far from hospitals ¹¹⁸.

Experiences of employer engagement differed considerably across participants in the workshops, even amongst those offering the same courses. A lack of a central vision for what *'good'* employer engagement looks like across all types of 14–19 learning was highlighted by the research.





Section Summary – Expanding Employer Engagement in Education

We need to build a culture of employer engagement with education, providing more incentives for employers to partner with educators. Our research revealed that too much employer engagement relies on goodwill and teachers' capacity to sustain ties. Teachers cannot be expected to be employment experts: career-related advice tends to focus on what qualifications fit the immediate needs of the learner. Teachers must be supported by qualified careers practitioners. There is a willingness of employers to inspire our young people and employees of the future. However employers need more support to structure how their expertise can complement the delivery and assessment of the curriculum. Teachers told us they often know which qualifications are right for their students, but are not always able to relate how that links to opening doors in employment.

Teachers told us they see the benefits to learners of strong employer links, and regularly leverage these to support guest lectures, workshops, workplace visits and placements. Leaving aside the unevenness of sufficient employers' presence and proximity in different areas, the challenges in providing these tend to be twofold: firstly, the quality and quantity of employer engagement tends to be driven by the motivation of individual teaching staff making use of their own networks or those of parents; secondly, the willingness of employers to engage. This is particularly true when schools and colleges are not delivering the credentials that are seen as necessary for direct entry into the industry such as licence to practice or professional certifications. In order to deliver the most authentic learning experiences, plentiful opportunities for employer engagement are critical. Teachers raised concerns that the high demand for work placements for T Levels could lessen the capacity of employers to engage more broadly in education. We have identified that it is important to strengthen teachers' capacity to bring work themes into the classroom.

5 Embracing Technology in Education

Technology has the potential to enhance teaching and learning across schools and colleges, including in curriculum design, teaching and learning methods, and digital approaches to assessment.

This section highlights both successes and challenges faced in terms of technology uptake during the pandemic; the readiness of the education system and education policy to drive forward technological innovation; and the potential for onscreen digital assessment models to be developed and embedded in the future. The teaching of Computing and Technology as a curriculum subject is not considered within this research report.



5.1 System Readiness for Digital Innovation and Embedding

The Current Context

The strong feeling among practitioners participating in the workshops was that the 14–19 system in England was not fully prepared for digital transformation with regard to teaching and assessment ¹¹⁹. Many reasons were cited by teachers, the two most common being the availability of laptops and the absence of remote-teaching pedagogical training. A lack of leadership was also identified with the need for a joined-up approach with clear, shared goals from the Department for Education, Ofsted, curriculum leads and awarding bodies. Logistical challenges such as unreliable home broadband, learners' own data allowances and the availability of IT support staff were also barriers for many teachers.

An international review of evidence conducted by the Education Endowment Foundation (EEF) found that how (rather than 'if') technology is used has a significant bearing on whether it forms an effective strategy to enhance student learning and performance. The review also indicated that regular, time-limited and focused use of technology is likely to support learning better than extensive use of technology as a replacement for traditional classroom teaching ¹²⁰. Members of the expert panel also sounded a note of caution in terms of the breadth and effectiveness of technological uptake within educational settings. Key concerns included ensuring that technological innovation only becomes embedded where there is clear evidence that it leads to improved outcomes, and recognising that digital inequalities must be addressed ¹²¹.

Overall, practitioners participating in the workshops were clear in their view that virtual technologies for teaching and assessment ought to be used on top of, rather than instead of, in-class learning going forward ¹²². Teachers recognised clear added value regarding tools such as virtual classrooms and teleconferencing platforms but felt they could not replace classroom teaching, particularly emphasising the irreplaceability of practical settings and the importance of being able to read learners' faces and interact directly with them.

As well as enhancing technological capacity in 14–19 education, there is also a broader point at stake in terms of system readiness. What shape will the future of work and society take and how should our education system be reformed in order to meet these demands? It is argued that academic-led style of education will not be sufficient to equip young people with the skills needed to thrive in a networked economy that depends upon technological understanding, problem-solving skills, and the capacity for innovation ¹²³.

The Role of National Government: Can it do more?

The current 2019 national strategy – *Realising the potential for technology in education* – includes 19 key commitments to drive innovations across EdTech, improve procurement processes for EdTech, and facilitate the sharing of best practice across educational institutions ¹²⁴. The strategy sets out the conditions necessary for effective use of technology across the education system, as well as identifying how the Government can support the education sector and EdTech industry to continue to develop and expand best practice across teaching and learning, assessment and professional development.

The EdTech Demonstrator Programme forms part of the Government strategy through its core aim of facilitating a network of peer-led digital learning across England's schools and colleges ¹²⁵. Basingstoke College of Technology, for example, has partnered with the EdTech Demonstrator Programme to share expertise from its programme of blended learning with other colleges to enhance Level 2 English and Mathematics results through blended learning sessions, apps, and AI-based platforms that help to provide individualised learning tailored to students' vocational subject areas. The suite of resources also includes automated marking and planning to reduce teachers' workloads and create more time to work closely with students, plus bespoke revision sites with self-marking quizzes and '*gamified*' revision tools ¹²⁶.

Could the National Strategy for England go further to ensure system readiness? In Scotland, for example, the national strategy to enhance learning and teaching through the use of digital technology includes specific funding commitments, as well as the creation of partnerships across national government, local authorities and education institutions to ensure delivery of the strategy's key commitments ¹²⁷. Wales also offers up an important comparative example for developing and piloting the introduction of national onscreen digital assessments, limited at present to primary and lower secondary but representing an important step towards creating an evidence base for extending national onscreen digital assessments across 14–19 education ¹²⁸.

5.2 Learning from Successes During the Covid-19 Pandemic

Practitioners in the workshops reported that the key benefits they got from the increased use of digital tools and platforms during the pandemic were the ability to set and administrate tasks for learners, as well as managing the associated progress-monitoring and marking ¹²⁹. The visual layout and easy reading made it straightforward to see which learners had completed exercises and submitted homework.

Practitioners across vocational fields – and those working in the Arts – highlighted the advantages of using central digital platforms to set work for learners in which they could collect resources, such as on Google Classroom and Microsoft Teams or OneNote ¹³⁰. Setting homework in this way was described by one practitioner as a *'godsend'*, although others noted they were just continuing or extending previous usage. Workshop participants overall were in consensus that the use of file-sharing drives and other platforms would be more regular going forward, with several confirming they would continue to issue their assignments in this way and one confirming their institution had made the transition to blended learning compulsory.

To support schools and teachers adapting to increased use of remote learning during the pandemic, the Education Endowment Foundation (EEF) published a rapid evidence review bringing together existing pre-pandemic evidence on effective delivery of remote learning in schools. Key findings indicate that the most effective remote learning strategies include clear explanations, scaffolding to support learning, and the provision of feedback – regardless of whether the format for remote learning is an interactive online game, pre-recorded video or other digital learning opportunity¹³¹.

There has also been a huge growth in the development and use of online learning portals to support teachers in schools and colleges. Emerging evidence suggests that most teachers intend to continue to access digital and blended learning resources as we move beyond the phase of pandemic learning; something which may be partly attributed to improved workloads through the use of these resources ¹³². According to the Blended Learning Consortium, best practice in this area includes ensuring that resources are: (1) accessible to all learners, (2) sufficiently flexible so that teachers can use them for self-directed and collaborative learning, and (3) incorporate built-in assessment to maximise student learning ¹³³.

The pandemic has also helped to drive innovative use of technology to facilitate practical hands-on skills for remote vocational learning. A small-scale study highlighted the potential for *'mixed reality'* online learning experiences to support vocational education and training in the offshore wind energy industry. Mixed reality offers a hybrid between the physical world and virtual reality, so that students can have a direct, immersive experience of real-life practical learning using digital technology. The study came about in response to a training *'bottleneck'* during Covid-19, with its findings having broader implications for the potential of mixed reality to be used in vocational education as part of a blended learning model that reduces pressure on scarce training resources ¹³⁴.

5.2 LEARNING FROM SUCCESSES DURING THE COVID-19 PANDEMIC

Further Learning and Best Practice

Pandemic learning has helped to encourage innovation in the use of technology across schools and colleges to deliver teaching and learning, according to practitioners in the workshops. A STEM practitioner reported that their institution had made successful use of open office hours for teachers on Teams, where they would leave their Teams open to questions from students in an Ask Me Anything (AMA) style. The fact that students were able to approach subject teachers other than their class teachers was described as a particular advantage. Another STEM practitioner made successful use of FlipGrid, a phone-based app developed in a TikTok style familiar to 14–19 learners. A vocational practitioner felt that, in the future, making use of pre-recorded lessons for multiple groups could be a key benefit, freeing up teacher time.

In terms of future focus, an AoC report identified four core recommendations for future investment across the sector to maximise the potential of digital learning and assessment. These recommendations include funding for a national repository of high-quality interactive content, digital accessibility and safeguarding for students, and secure onscreen digital assessment methodologies. These recommendations were developed based on learning drawn from the pandemic during which colleges were able to identify more acutely the gaps in existing IT infrastructure, systems and teaching resources, as well as meeting the demands of cyber security, safeguarding, inclusion and accessibility within digital fora ¹³⁵.

Further recommendations shared by practitioners to embed the use of technology going forward include developing local community digital strategies between institutions as a response to digital inequality; maintaining digital workspaces for every subject and reducing the number of physical resources learners need to consume, which is both convenient and good for the environment ¹³⁶.

In Spring 2022, a Pearson spotlight paper – informed by new research – will consider onscreen assessment through the lens of these contexts. The focus of this paper will be to consider what the future could and should look like to enable greater adoption and uptake of digital assessment across all qualification types, to transform learning and assessment.



5.3 Learning from Key Challenges During the Pandemic

Digital Inequality

'They'll say "Miss, I've only got my phone and I've only got so much data this week..." So they're scuppered, aren't they, before they even begin?'

— Practitioner

By far the biggest challenge delivering digital approaches to learning described by practitioners was digital inequality¹³⁷. Practitioners uniformly gave examples from among their cohorts of learners without access to devices at home (some had to work on their phones), or with only shared access between multiple siblings, limiting the extent to which they could participate in tasks. This has also been reflected in the literature, where the impact of digital inequalities is well-documented across analyses of pandemic learning, in particular, how digital inequalities have the greatest impact for students experiencing high levels of socio-economic deprivation^{138,139,140,141}. Digital inequalities include lack of access to digital devices and high quality internet, poor digital skills that hamper effective use of technology, schools' digital resources and teachers' digital skills, and parental engagement and home learning environment¹⁴². Government strategies to address digital inequalities include the provision of over 1 million devices to students across England before February 2021^{143,144}. However, a recent survey conducted with Association of Colleges' members found that over a third of colleges did not have sufficient devices for students by the time of the third lockdown, while in other cases students were not able to use devices received due to a lack of accompanying dongles to enable internet access¹⁴⁵.

Practitioners also noted ways in which digital inequality manifested in more subtle ways, including: students having access to different software packages at home, differing levels of parental digital skills, and digital inequalities among staff¹⁴⁶.

Looking across the bigger picture, a recent report by the Association of Colleges found that while 85% of colleges were delivering more than 60% of lessons online – with just over a quarter delivering all lessons online – there has still been a significant learning loss for students as a result of the pandemic. Colleges estimate that over three quarters of students are performing below expected standards, further reinforcing the gap between the widespread take-up of technology to deliver learning content and expected learning outcomes for students in their chosen subject areas¹⁴⁷.

Gaps in Digital Literacy

Practitioners participating in the workshops reported their surprise at getting to understand the limited digital literacy among their learners during the pandemic: *'Sometimes you spend more time explaining the basics to two students than you do the advanced stuff to the rest of the group'*¹⁴⁸. Practitioners explained that while phone use was high among learners, computer use was less so, often reserved for those interested in gaming or graphics. This resulted in simple tasks, for example having students send emails, becoming difficult. Students do not see the value of computers relative to phones, according to one practitioner, of whom a student had requested to be allowed to type essays and class notes on their phone because they could do so faster than on a keyboard.

A STEM practitioner noted that digital skills among younger people can be overestimated due to their familiarity with phones and social media: *'the number of Year 7's I have coming into this school tapping on screens of the PCs because all they've had in [primary] schools are tablets...'*

The issue of digital literacy also pertains to teachers' skills and confidence in accessing and using digital resources. While a recent Ofqual report indicates that the majority of schools offered teachers training to support the transition to online delivery models across successive waves of schools closures, a quarter of teachers still reported a desire to receive more training in using digital resources effectively¹⁴⁹.

Low Participation

Practitioners cited challenges in ensuring learner participation in virtual teaching approaches they had used during the pandemic¹⁵⁰. Prominently related to this issue is digital inequality, as discussed above. However, practitioners also felt low participation was an issue in itself, and was described by a teacher in a vocational field as *'at best fifty percent'*. Another practitioner noted still having three students who had *'never'* handed in work digitally, while a third felt carrying lessons from the pandemic forward would be challenging due to students' lack of engagement with digital learning to date.

A study conducted by the Oak National Academy has found that online lessons accessed via a tablet or desktop on its platform are four to five times more likely to be completed than those accessed via a mobile phone. As a result, children living in more deprived areas – who the data suggests are more likely to access content using a mobile phone due to a lack of access to tablets and computers – were less likely to access the same levels of content¹⁵¹.

Further Challenges

Other technological challenges reported by practitioners ranged from the increased workload of preparing and teaching lessons both in person and virtually, to challenges around contact from students at unsociable hours, sending emails and submitting work late into the night. Practitioners cited challenges around managing this data, requiring a large volume of storage space and a high upload time in some cases, with a practitioner explaining they needed up to twenty minutes to upload one individual's work, making the upload of work from one class, for one assessment, a full day's work.

A smaller challenge was raised around safeguarding, for instance being unable to use the breakout room functionality of teleconference software without staff available to cover each room or the difficulty of providing one-on-one support virtually, which cannot replicate a co-operative in-class approach¹⁵².

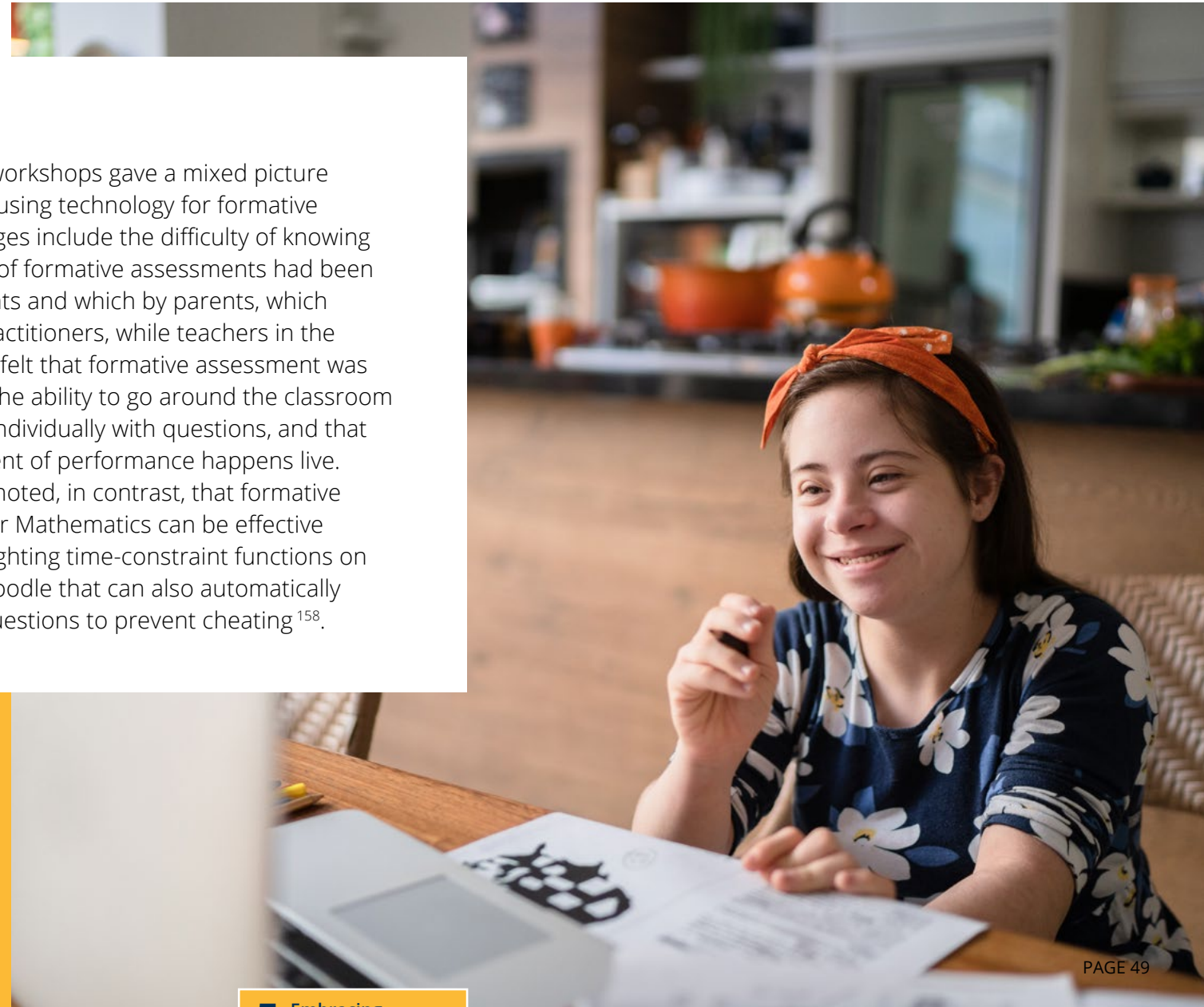
5.4 Challenges Around Technology and Assessment

Learning and Innovations during Covid-19

The pandemic has precipitated a wide-ranging discussion about the nature and format of assessments in 14–19 education in England. Provision of onscreen digital assessment for GCSE and A-level exams in 2020 was ruled out due to concerns around access¹⁵³. And, at present, onscreen digital assessments remain in pilot phases with most schools lacking the infrastructure required to deliver digital assessments at scale^{154,155,156}.

A recent Ofqual report highlights how many aspects of pandemic learning have yet to be adequately researched, with the impact on assessments and qualifications in vocational subjects cited as a key example of an under-researched area¹⁵⁷. Where emerging evidence does exist, the pandemic has led to a greater demand for onscreen digital assessments in the vocational sector.

Practitioners in our workshops gave a mixed picture of their experiences using technology for formative assessment. Challenges include the difficulty of knowing for sure which parts of formative assessments had been completed by students and which by parents, which was noted by two practitioners, while teachers in the Arts and Humanities felt that formative assessment was challenging without the ability to go around the classroom and probe learners individually with questions, and that the proper assessment of performance happens live. A STEM practitioner noted, in contrast, that formative digital assessment for Mathematics can be effective and enjoyable, highlighting time-constraint functions on platforms such as Moodle that can also automatically generate different questions to prevent cheating¹⁵⁸.



Digital Assessment in the Future

The Practitioners' Perspective

While students, parents and teachers are broadly supportive of onscreen assessments, one in four students continue to express a preference for paper-based assessment, according to an earlier phase of research conducted by Pearson ¹⁵⁹. Practitioners engaging in the current series of workshops felt, however, that greater use of technology in assessments could help to improve accessibility and create more autonomy for students, teachers and schools. For example, one STEM practitioner explained they taught students on the autism spectrum who would be better suited to onscreen digital assessment methods; other examples included the advantage of having more flexible scheduling to minimise mental health pressures and the central submission and management of assessment evidence ¹⁶⁰.

A small number of practitioners raised concerns about the future roll-out of digital assessment mechanisms for the kind of high stakes, end of course examinations that are currently dominant with 14–19 education in England ¹⁶¹. Concerns centred on the risks of technology or connectivity failures that may impact on students' ability to complete exams, as well as risks associated with cybersecurity, with paper-based assessments referred to by one practitioner as more '*reliable*'. Much of the evidence points towards the need to ensure that onscreen digital assessment models are not only robust in terms of digital infrastructure and security issues, but also that exam boards and other core institutions work closely with teachers to allay concerns around these perceived issues.



5.4 CHALLENGES AROUND TECHNOLOGY AND ASSESSMENT

Innovation in Design and Delivery

Research reports from across the sector recognise the potential for an expansion of digital assessment as well as a number of core considerations to smooth the transition from traditional assessment.

Firstly, interdisciplinary teams of technical and subject specialists are needed to ensure that new onscreen digital assessment tools use technology effectively, testing subject knowledge grounded in pedagogical theories of learning. The need for interdisciplinary teams is particularly acute in Mathematics and Science where the use of diagrams and other non-text based supporting materials is more common. Further considerations include addressing digital inequalities, establishing ethical frameworks to manage and protect data, and ensuring continuity between paper-based and onscreen assessments in cases where both formats continue to be used ^{162,163,164}.

In response to growing interest in the potential for onscreen digital assessment, UK exam boards including AQA, OCR and Pearson have begun conducting research and pilot programmes to understand better how onscreen assessment could work in practice, both in terms of assessment approach and in the use of auto-marking. At present, preliminary research and pilot projects are focused primarily on the use of digital technology for online mock exams to inform future strategic development ¹⁶⁵.

Paper to Digital Assessments

As noted above, the transition from paper to onscreen assessment offers the potential to think creatively about how to deliver assessments. Awarding organisations such as Pearson have moved towards innovative solutions for onscreen delivery of assessments in functional skills and vocational qualifications as well as in low-stakes formative assessments. In the academic qualifications space, the AQA online mock paper programme, for example, has introduced automated word limits for open-ended English questions to help guide students on the expected length for responses. The pilot onscreen format also gives students the ability to copy and paste from the source material when drafting their answers ¹⁶⁶.

Voices within the sector calling for a move to digital assessments include the think tank EDSK's recommendation that GCSEs should be replaced by national onscreen assessments across all national curriculum subjects ¹⁶⁷. A member of the expert panel was also keen to see innovative solutions to the delivery of onscreen assessments for vocational subjects, beyond the onscreen assessments that already take place in BTEC qualifications to include more practical elements.

Looking internationally, Finland, Sweden, Singapore and Ontario (Canada) were recognised as leaders in the use of onscreen assessments for numeracy and literacy in a study of high-performing educational jurisdictions worldwide from where England may benefit, as from these case studies ^{168,169}. Digital assessment in England remains broadly on a par with most other European countries with the gradual piloting and introducing of onscreen digital assessments remaining the norm in 14–19 education ¹⁷⁰.



Section Summary – Embracing Technology in Education

The pandemic has laid bare inequalities in access to digital resources and how this affects outcomes for the most disadvantaged. We have also seen how AI and digital learning in assessment technologies can be transformative. It is important that technology is applied where it adds value to assessments – used correctly it can improve accessibility, reliability and can also address some of the security pressures where assessments are high stakes.

There is now an urgent need for a comprehensive and refreshed national digital strategy across schools and further education that brings together and enhances existing policies and initiatives. The challenge is multifaceted, from the infrastructure at home and in institutions, funding, and ensuring capabilities of all agencies are aligned to drive change at scale.

Our research shows that whilst many schools and colleges have shown resilience in adapting to more digital learning, both teachers and learners have had widely-differing experiences because of access to technology and digital skills. Teachers we consulted cited access to hardware, the internet and quiet study spaces as an issue. There are many different contexts across the country and many schools and colleges have adapted differently to the challenges they faced. Teachers told us that whilst many young people rely on their smartphones for internet access and communication, many learners have weak IT skills possibly because of a lack of access to computer facilities at home. Our research shows that we must accelerate a national digital transformation programme to realise the benefits that technology can bring to education in an equitable and appropriate way.

6

Concluding remarks & further research

At the start of this project, we asked the question: what should a good qualifications and assessment system for 14–19 year olds look like? At the end, we established that a good system must equip individuals with the tools they need to thrive, facilitate access to work, and support them in engaging in life beyond school. It should be progressive, promoting choice, and contain a broad and inclusive curriculum that exposes students to a variety of experiences to support their development of knowledge and skills. Finally, the system should ensure that attributing failure is never a consequence of recognising achievement, and should optimise technology in doing so.

In the second phase of our work, we explored two questions: what outcomes should the post-14 curriculum deliver for young people and how should assessment best service learning and support these outcomes?

Our research identified that there is no clear articulation of what outcomes the post-14 curriculum should deliver, primarily because there is no coherent curriculum framework that spans the 14–19 phase of education. More importantly, we learned there are limited connections between stated aspirational outcomes and how these relate to the curriculum, qualifications and assessment framework that we have in place today. Our work revealed that students' mental health and wellbeing are paramount to enabling individuals to thrive and engage in life, and that equipping students with the skills that will enable them to continue a journey of learning is essential to their accessing the fast-changing job roles of the future. The research also revealed ways in which employer engagement in education, when done well, can enrich the learner experience and can draw out the relevance of education in workplace settings.

Our evidence indicates that there are two main benefits to having standardisation in a national qualifications and assessment system. Firstly, it provides useful external benchmarking of a learner's level of ability, signposting how they may further develop; secondly, external certification of achievement is a valuable commodity for those without the social capital outside of education to enable progression into different education institutions and employment. Our evidence reinforced the need for the method of assessment to best reflect knowledge and skills that need to be assessed, using technology where it adds value to the assessment experience, placing validity at the heart of assessment design. Finally, and most importantly, through reflecting the diversity of the student population throughout the qualifications system there should be improved engagement and access to assessments which can only seek to achieve better outcomes for all and inspire a lifelong love of learning.

Some of this research is applicable now, with the Level 3 reform designs being considered, and policies around access to HE under discussion as this report launches. The publication of this report does not signal the end of our interest in or work on this important topic. It provides us with a starting point to explore some of the issues raised by our research in more detail. In the first instance this will be through our Spotlight Policy series, taking a look at current policy issues across education and skills. Each report is informed by a range of evidence from policy roundtables, independent polling, interviews, and desk research. Our *'Spotlight on Onscreen Assessment'* paper will consider the greater use of technology in assessment, in particular high-stakes assessment. We will then be investigating standard setting in the English exam system and considering how grading can be improved. We will continue to engage with members of our expert panel, practitioners and learners to guide our work in our unwavering ambition to contribute to a better, bolder future for the 14-19 phase.

Endnotes

¹ [Schools, pupils and their characteristics, Academic Year 2020/21 – Explore education statistics – GOV.UK \(explore-education-statistics.service.gov.uk\)](#)

² [Full Post Inequality Covid Report \(pearson.com\)](#)

³ Pearson (2021), [The Future of Qualifications and Assessment for 14-19 Year Olds: Interim Report](#)

⁴ See appendix

⁵ An account of the Tyler or rational model of curriculum can be found in James S. Fogarty (1976), 'The Tyler Rationale: Support and Criticism', [Educational Technology](#), vol. 16:3. For a contemporary account of the relevance of Boomer's account see Bron, Bovill and Veugelers (2016) 'Curriculum negotiation: the relevance of Boomer's approach to the curriculum as a process, integrating student voice and developing democratic citizenship', [Curriculum Perspectives](#), vol. 36:1. Lastly, the notion of 'syllabus' and 'praxis' models of curriculum are drawn from a recent thesis, Anthony Burke (2020), [Analysing curriculum development as an activity system: A study based in English universities](#), Lancaster University.

⁶ Amanda Spielman (2021), [Speech: 'OFSTED's Chief Inspector at the Festival of Education'](#).

⁷ Pearson (2021). [The Future of Qualifications and Assessment for 14-19 year olds](#) (Interim Report).

⁸ Department for Education (2014), [Collection: National curriculum](#).

⁹ Representing all Purposes of Study published by the Government. English, Mathematics, Science, Art & Design, Citizenship, Computing, Design & Technology, Geography, History, Languages, Music, Physical Education.

¹⁰ DfE (2020), [Technical qualifications for 14 to 16 year olds](#)

¹¹ Eurydice (2021), [United Kingdom - England: Teaching and Learning in Vocational Upper Secondary Education](#), European Commission.

¹² Department for Education (2020), [Guidance: Introduction of T Levels](#).

¹³ Institute for Apprenticeships and Technical Education (ND). [Approved T level technical qualifications and final outline content](#).

¹⁴ Practitioner workshops.

¹⁵ E.g Ofsted (2021), [Education Inspection Framework](#)

¹⁶ Practitioner workshops.

¹⁷ Practitioner workshops.

¹⁸ Practitioner workshops.

¹⁹ Department for Education (2013), [Computing programmes of study: key stages 3 and 4](#).

²⁰ Department for Education (2013/2014), [English programmes of study: key stage 3](#).

²¹ Department for Education (2013/2014), [English programmes of study: key stage 4](#).

²² Department for Education (2014), [Mathematics programmes of study: key stage 4](#)

²³ Department of Education (2013), [Music programmes of study: key stage 3](#)

²⁴ Practitioner workshops.

²⁵ ESFA (2014), [16 to 19 funding: maths and English condition of funding](#)

ENDNOTES

26 [E.g. JCQ \(2019\) GCSE Full Course Results Summer 2019](#)

27 Velthuis, S, Lupton, R, Thomson, S & Unwin, L (2018), [The characteristics and post-16 transitions of GCSE 'lower attainers'](#).

28 Impetus-PEF (2017), [Life After School](#)

31 Vidal Rodeiro, C (2018) [Which students benefit from taking Mathematics and English GCSEs post-16?](#)

32 Ken Spours, Ann Hodgson and Lynne Rogers (2018). [14-19 education and training in England: The concept of an extended upper secondary education phase revisited](#), Institute of Education (UCL) and The Edge Foundation.

33 Ken Spours, Ann Hodgson and Lynne Rogers (2018). [14-19 education and training in England: The concept of an extended upper secondary education phase revisited](#), Institute of Education (UCL) and The Edge Foundation.

34 Practitioner workshops.

35 Practitioner workshops and a participant from our Expert Panel.

36 Practitioner workshops.

37 Practitioner workshops.

38 QCA/LSC (2004) [Principles for a Credit Framework](#)

39 Ofqual (2011) [The 2010 Evaluation of the Qualifications and Credit Framework \(QCF\) Regulatory Arrangements](#)

40 Practitioner workshops.

41 Haili Hughes (2019), [A-level English is under threat. Can we save it?](#), TES.

42 See, e.g., Elspeth Broady (2020). [Language learning in the UK - taking stock](#), *The Language Learning Journal*, vol. 48:5.

43 Lesley Hagger-Vaughan (2020), [Is the English Baccalaureate \(EBacc\) helping participation in language learning in secondary schools in England?](#), *The Language Learning Journal*, vol. 48:5.

44 Ofqual, (2021) [Revised GCSE Qualifications in Modern Foreign Languages](#)

45 Abigail Parrish (2020), [Curriculum change in modern foreign languages education in England: barriers and possibilities](#), *The Language Learning Journal*, vol. 48:5.

46 Only two practitioners participating in the workshops reported that their subjects' assessment regime was broadly in line with need and in both cases the teachers delivered courses with a 60% or higher coursework component.

47 Practitioner workshops.

48 Practitioner workshops.

49 Practitioner workshops.

50 Practitioner workshops.

51 Practitioner workshops.

52 Pippa Allen-Kinross (2019), [Ofsted criticises 3-year GCSEs and low EBacc entry in new inspection report](#), Schools Week.

53 Practitioner workshops.

ENDNOTES

54 DfE (2016), [14 to 19 technical and applied qualifications: technical guidance](#).
55 Practitioner workshops.
56 Two of eight practitioner workshops.
57 Pearson (2021). [The Future of Qualifications and Assessment for 14-19 year olds](#) (Interim Report).
58 Practitioner workshops.
59 Golding, J & Grima, G (2021), Understanding learning loss during the pandemic – implications for assessment. Conference paper [unpublished]
60 Richard Adams (2019), [Pupils receive GCSE results as concerns raised over new format](#), Guardian Online.
61 In addition to the study cited in this paragraph, this was also reported in the participant workshops. Data on unauthorised absences can be found [here](#) and [here](#).
62 Simon Edwards and Evie Parmar (2020). '[Does absence make the heart grow fonder? — Students' perspectives of curriculum, absenteeism and their pursuit of the good life](#)', *Buckingham Journal of Education*, vol. 1.
63 ESFA (2014), [16 to 19 funding: maths and English condition of funding](#)
64 Department for Education (2014). [The National Curriculum in England: Framework document](#). HM Government.
65 Department for Education (2021). [Statutory policies for schools and academy trusts](#). HM Government.
66 Ofqual (2018). [Get the facts: GCSE reform](#). HM Government.
67 Education Endowment Foundation (2017). [The attainment gap](#).
68 HM Government (2021). [GCSE results \(Attainment 8\)](#).
69 Eszter Neumann (2020). [Neoconservative education policy and the case of the English Baccalaureate](#). *Journal of Curriculum Studies* 52:5.
70 <https://cls.ucl.ac.uk/wp-content/uploads/2017/09/CLS-WP-20178-Continuing-education-post-16-does-what-you-study-at-GCSE-matter.pdf>
71 [Many examples including UK Parliament \(2020\), COVID-19 and the Digital Divide](#)
72 See, for example, Shona Macleod et. al. (2015). [Supporting the attainment of disadvantaged pupils: articulating success and good practice](#). Department for Education.
73 Office for Students (no date), [Developing an Inclusive Curriculum Framework](#)
74 Anna Leach et. al. (13 July 2020). [Black British history: the row over the school curriculum in England](#). The Guardian.
75 Eszter Neumann (2020). [Neoconservative education policy and the case of the English Baccalaureate](#). *Journal of Curriculum Studies* 52:5.
76 Department for Education (2014). [The National Curriculum in England: Framework document](#). HM Government.
77 Practitioner workshops.

ENDNOTES

78 Practitioner workshops; not all practitioners intended the mechanisms they cited to be examples of ways curriculum development could be made more inclusive but all the mechanisms cited are possible avenues for doing this.

79 Department for Business, Innovation & Skills and the Department for Education (2016). [Post-16 Skills Plan](#).

80 David Russell (24th December 2020). [‘Why T levels could be the future of qualifications’](#). ETF Blog.

81 Kate Parker (6th May 2021). [‘Delivering the first T levels – what’s it been like?’](#). TES Online.

82 Jermaine Houghton (24th February 2021). [‘Reversing the shocking lack of diversity in Further Education’](#). Chartered Management Institute.

83 Jeff Greenidge (7th September 2021). [‘FE has the ambition and aspiration to improve equality and diversity, but change is slow.’](#) Association of Colleges Blog.

84 Anastassia Parsons (9th August 2021). [‘The grand designs of diversity and inclusion’](#). Association of Colleges Blog.

85 Gemma Parker and David Leat (2021). [‘The case of curriculum development in England: oases in a curriculum desert?’](#). Curriculum making in Europe: policy and practice within and across diverse contexts.

86 David Leat and Ulrike Thomas (2018). [‘Exploring the role of “brokers” in developing a localised curriculum.’](#) *The Curriculum Journal* 29:2.

87 Martin Johnson and Melissa Mouthaan (25th June 2021). [‘Decolonising the curriculum: the importance of teacher training and development.’](#) Runnymede Trust.

88 <https://www.ambition.org.uk/blog/designing-curriculum-bridge-attainment-gap/>

89 <https://www.theeducationpeople.org/our-expertise/equality-inclusion/embedding-identity-diversity-and-equality-into-policy-practice-and-the-curriculum/>

90 Practitioner workshops.

91 Nick Clegg et. al. (2017). [Commission on inequality in education](#). Social Market Foundation.

92 Geographical Association (2019). [‘Education inspection framework 2019: inspecting the substance of education. The Geographical Association’s response’](#).

93 Nick Clegg et. al. (2017). [Commission on inequality in education](#). Social Market Foundation.

94 Practitioner workshops.

96 Practitioner workshops.

97 Prue Huddleston (2020). [A Short History of Employer Engagement: Once More Round the Buoy or Set Fair for a Better Voyage?](#) London: Education and Employers.

98 Expert panel member.

99 Prue Huddleston (2020). [A Short History of Employer Engagement: Once More Round the Buoy or Set Fair for a Better Voyage?](#) London: Education and Employers

100 Howard Davies (2002). [A Review of Enterprise and the Economy](#). HM Treasury.

101 The 14-19 Diploma was abandoned in 2010; Prue Huddleston (2020). [A Short History of Employer Engagement: Once More Round the Buoy or Set Fair for a Better Voyage?](#) London: Education and Employers.

102 Prue Huddleston (2020). [A Short History of Employer Engagement: Once More Round the Buoy or Set Fair for a Better Voyage?](#) London: Education and Employers.

ENDNOTES

103 Alison Wolf (2011). [A Review of Vocational Education: The Wolf Report](#).

104 Department for Business, Innovation and Skills (2014). [Getting the Job Done: The Government’s Reform Plan for Vocational Qualifications](#). Executive Summary.

105 Department for Education (2021). [T Level Action Plan](#).

106 Department for Education (2021). [T Level Action Plan](#).

107 Department for Education (2021). [T Level Action Plan](#).

108 Practitioner workshops.

109 Expert panel member.

110 Practitioner workshops.

111 Employer interviews.

112 Prue Huddleston (2020). [A Short History of Employer Engagement: Once More Round the Buoy or Set Fair for a Better Voyage?](#) London: Education and Employers.

113 Practitioner workshops.

114 The Careers and Enterprise Company (2020), [Careers Education in England’s Schools and Colleges 2020: Working Together for Young People’s Futures](#).

115 Prue Huddleston (2020). [A Short History of Employer Engagement: Once More Round the Buoy or Set Fair for a Better Voyage?](#) London: Education and Employers.

116 Jenny Bimrose et al. (2014). [Understanding the Link Between Employers and Schools and the Role of the National Careers Service](#) , Department for Business Innovation and Skills.

117 Practitioner workshops.

118 Practitioner workshops.

119 Practitioner workshops.

120 Cathy Lewin et. al. (2019). [Using digital technology to improve learning: Evidence review](#). Education Endowment Foundation.

121 Two participants in the expert panels.

122 Three of four workshops.

123 Ken Spours et. al. (2018). [14–19 education and training in England: The concept of an extended upper secondary education phase revisited](#). Centre for Post-14 Education and Work UCL Institute of Education. UCL and the Edge Foundation.

124 Department for Education (2016). [Realising the potential for technology in education: A strategy for education providers and the technology industry](#).

125 <https://edtechdemo.ucst.uk>

126 Anthony Bravo and Scott Hayden (17th September 2020). [‘Pioneering digital approaches to raising English and Maths’ standards’](#). JISC News.

127 The Scottish Government (2016). [Enhancing learning through the use of digital technology: A digital learning and teaching strategy for Scotland](#).

128 Catherine Lough (26th March 2021). [‘It can be done: Making the digital leap to online exams.’](#). TES Online.

129 Practitioner workshops.

ENDNOTES

130 Three of four workshops.

131 Education Endowment Foundation (2020). [Remote learning: rapid evidence review](#).

132 Catherine Lough (6th September 2021). [‘Online lessons: 6 findings from the Oak National Academy.’](#) TES Online.

133 Amy Hollier (2021). [‘Embracing the opportunity of blended learning.’](#)

134 Eleanor Smith et. al. (2021). [‘Enhancing Vocational Training in the Post-COVID Era through Mobile Mixed Reality’](#). *Sustainability* 13.

135 Association of Colleges (2021). [Creating a post-Covid-19 EdTech strategy with no-one left behind](#).

136 Practitioner workshops.

137 Practitioner workshops.

138 Emma Howard et. al. (2021). [Learning during the pandemic: review of research from England](#). Ofqual Strategy, Risk, and Research Directorate.

139 Victoria Coleman (2021). [Digital divide in UK education during the COVID-19 pandemic: Literature review](#). Cambridge Assessment Research Report.

140 Megan Lucas et. al. (2020) [Schools’ responses to Covid-19: pupil engagement in remote learning](#). National Foundation for Educational Research (NFER).

141 Alison Andrew et. al. (2020). [Learning during lockdown: real-time data on children’s experiences during home learning](#). IFS Briefing Note BN288. Institute of Fiscal Studies (IFS).

142 Victoria Coleman (2021). [Digital divide in UK education during the COVID-19 pandemic: Literature review](#). Cambridge Assessment Research Report.

143 Department for Education (13 July 2021). [Guidance: Get help with technology during coronavirus \(COVID-19\)](#).

144 Victoria Coleman (2021). [Digital divide in UK education during the COVID-19 pandemic: Literature review](#). Cambridge Assessment Research Report.

145 Association of Colleges (2021). [College catch-up funding and remote education: AoC survey and policy proposal](#).

146 Practitioner workshops.

147 Association of Colleges (2021). [College catch-up funding and remote education: AoC survey and policy proposal](#).

148 Practitioner workshops.

149 Emma Howard et. al. (2021). [Learning during the pandemic: review of research from England](#). Ofqual Strategy, Risk, and Research Directorate.

150 Practitioner workshops.

151 Catherine Lough (6th September 2021). [‘Online lessons: 6 findings from the Oak National Academy.’](#) TES Online.

152 Practitioner workshops.

153 Catherine Lough (26th March 2021). [‘Exclusive: DfE wanted to move 2021 GCSE exams online’](#). TES Online.

154 Catherine Lough (31st March 2021). [‘Explained: What’s it like to sit a GCSE online?’](#). TES Online.

155 Catherine Lough (26th March 2021). [‘How long would it take to introduce online GCSE exams?’](#). TES Online.

ENDNOTES

156 Ofqual https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/943382/Barriers_to_online_111220.pdf

157 Emma Howard et. al. (2021). [Learning during the pandemic: review of research from England](#). Ofqual Strategy, Risk, and Research Directorate.

158 Practitioner workshops.

159 Pearson. [The future of qualifications and assessment for 14-19 year olds](#). Interim Report. Pearson UK.

160 Practitioner workshops.

161 Practitioner workshops.

162 Sue Timms et. Al. (2016). [‘Rethinking assessment in a digital age: Opportunities, challenges and risks’](#). *British Educational Research Journal* 42:3.

163 Victoria Crisp and David Shaw (2020). [‘Writing and reviewing assessment questions on-screen: issues and challenges’](#). *Research Matters* 30. Cambridge Assessments,

164 Rushda Khan and Stuart Shaw (2018). [‘To “Click” or to “Choose”? Investigating the language used in on-screen assessment’](#). *Research Matters* 26. Cambridge Assessments.

165 Catherine Lough (31st March 2021). [‘Revealed: How online GCSE trials have already begun’](#). TES Online.

166 Catherine Lough (31st Marche 2021). [‘Explained: What’s it like to sit a GCSE online?’](#). TES Online.

167 Tom Richmond (2021). [Re-assessing the future: Part 1 - how to move beyond GCSEs](#). EDSK.

168 European Commission (2019). [Digital education at school in Europe](#). Eurydice report.

169 Ellie Darlington (2017). [Other jurisdictions’ use of technology in Mathematics curricula](#). Cambridge Assessment Research Report.

170 European Commission (2019). [Digital education at school in Europe](#). Eurydice report.

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