



Insights: Onscreen Assessment

Latest developments, findings,
and recommendations





Insights:
Onscreen
Assessment



1. Introduction

Expectations are changing across the UK's increasingly digital education system, and the assessment system should reflect this. As demonstrated by our first Onscreen Assessment Spotlight Paper, published in May 2022, there is a real appetite from teachers and learners to adopt onscreen assessment over the coming years. To paraphrase the Chair of Ofqual, the greater use of technology in GCSEs and A levels is quickly "coming down the track."

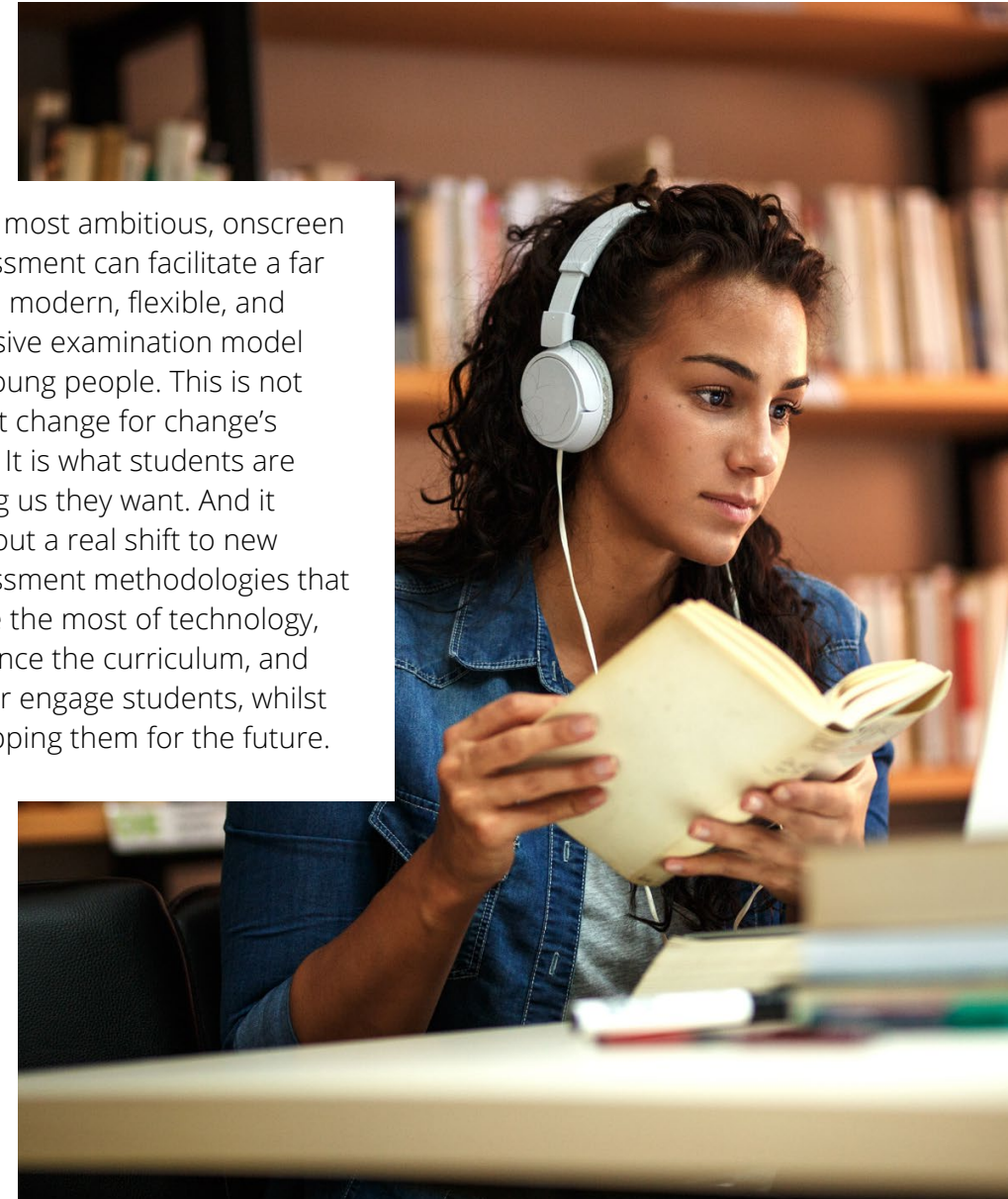
Onscreen Assessment is an exciting proposition. Students stand to gain from improved authenticity and validity of assessment, not to mention better preparation for the highly digital world we live in. Meanwhile, teachers could see a reduction in workload and administrative burden and would benefit from richer data insights into student progression.

Pearson continues to lead the way when it comes to onscreen assessment. In summer 2022, we successfully piloted live, onscreen, high stakes assessment in schools across the globe – and also delivered **Pearson Edexcel GCSE (9-1) Computer Science** online to thousands of students in England. From these experiences, we now have unique new insights about the opportunities and challenges that the sector collectively faces.

This paper seeks to articulate our findings – along with views from teachers, students, and education experts – in order to progress the ongoing debate around, and steady implementation of, onscreen assessment. The enclosed student testimonials are particularly powerful, along with opinion polling of over 7,000 teachers.

It is clear that revolution will not (and should not) happen overnight. The pace of change will be different for different qualifications, and we need to build a sustainable roadmap that takes incremental steps towards a more digital future. This will include real consideration of technological infrastructure, better of embedding digital skills into classroom learning and, ultimately, a willingness to move away from some of the conventions and constraints of traditional examinations.

At its most ambitious, onscreen assessment can facilitate a far more modern, flexible, and inclusive examination model for young people. This is not about change for change's sake. It is what students are telling us they want. And it is about a real shift to new assessment methodologies that make the most of technology, enhance the curriculum, and better engage students, whilst equipping them for the future.



2. Executive Summary

This report draws on Pearson's experiences in delivering onscreen assessment over summer 2022, direct reflections from teachers and students who participated in these pioneering studies, an expert roundtable, and extensive teacher opinion polling on student preparedness. We found that:

- Our successful delivery of high stakes onscreen assessment pilots for International GCSEs, as well as the onscreen element of Pearson Edexcel GCSE (9 -1) Computer Science in England, shows what can be achieved.
- There is a clear appetite from students and teachers to move towards onscreen assessment – especially amongst those with direct experience of this format.
- However, over half of secondary teachers feel the curriculum does not provide learners with the necessary digital skills to take onscreen exams.
- There are also systemic barriers rooted in both technological infrastructure and standard classroom practice that need to be brought up-to-date to allow onscreen assessment to proliferate.

59% of secondary teachers expect increased use of onscreen assessment ²

Recommendations:

To continue making steady progress on onscreen assessment, we recommend that Government, working with awarding bodies:

- Undertakes a comprehensive audit of the existing technological infrastructure in schools for delivering onscreen assessment.
- Gives full consideration of the regulatory barriers that schools face, such as the internet access ban which restricts the use of some types of device or the requirement that students sit exams simultaneously.
- Conduct a thorough examination of how the curriculum can better provide learners with the necessary digital skills to successfully participate in onscreen assessments.

For our part:

- Pearson will offer more high stakes onscreen assessments in 2023. This will include our International GCSE English Language & International GCSE English Literature qualifications.
- Pearson will explore greater use of onscreen formative assessment. This will include increasing the number of subjects available through our Mocks Service.
- Pearson will continue to work with experts on accessibility requirements for SEND students.
- Pearson will consider how to further integrate onscreen assessment and digital skills into learning products and services. We will build on our existing research and evidence base and share our findings with policy makers and regulators.



3. Onscreen Assessment in Action

Pearson Edexcel International GCSE (9–1) English Language

In 2022, Pearson became the first exam board to deliver onscreen International GCSE assessment, providing 600 students in Bahrain, UAE, Qatar, and Spain the opportunity to complete their final English Language exams onscreen.

Participating schools joined the pilot in September 2021, sitting their first onscreen mock exam in November. Most schools also then sat a second onscreen mock in February in the run-up to the final exams in May 2022.

These exams were delivered successfully – with all elements taking place, securely, onscreen. This included the provision of mock assessments through to the submission and marking of digital papers. There were no physical papers used during the process.

Senior examiners have used both statistical and qualitative analysis, including reviewing student responses across the two modes (onscreen and traditional), to understand the impact of onscreen assessment on learner outcomes. These sources of evidence demonstrated that the performance of students onscreen was comparable to those that sat the paper in a traditional style.

90% of students who took these exams said their school should offer onscreen assessment for International GCSE English in the future.³

Wayne Ridgeway, Head of Senior School at the British School of Bahrain, stated:

“I would be very happy to see more onscreen assessment in the future – this is the way students are going to work when they go on to universities for their higher education and beyond.”

Nigel Davis, Head of Secondary at The British School Al Khubairat (BSAK) commented:

“We believe that this is the future of exams, and the confidence that our students had as they left the exam hall this summer was palpable. Now that we have seen the results, we cannot be happier.”

Year 11 students:

“I would probably choose to take exams all on screen, as it did save a lot of time for me, and I found it very much to my advantage.”

“We’ve done most of our course online so I felt relieved knowing that we were going to type our answers.”

International GCSE English onscreen assessment functionality

When taking the assessment, students are able to use a number of tools and features, including:

- Marking the text - highlight functionality and the ability to underline
- Copy and paste quotes to the notepad
- A sticky note tool (which can be attached to specific questions)
- The ability to flag questions, so students can return to specific questions at a later stage
- Accessibility tools including colour filters. This provide options for different combinations according to learners’ needs – particularly useful for students with dyslexia

These tools mirror many of those used in class or for homework – helping build familiarity and confidence with the platform.

3. Onscreen Assessment in Action

Pearson Edexcel Mocks Service

The Pearson onscreen Mocks Service was introduced in February 2021, and includes the option to have all elements take place onscreen – from booking the assessment through to receiving the results and detailed analysis.

At present we offer GCSE and International GCSE mocks for English Language, English Literature and Mathematics. We have worked to ensure that the paper-based and onscreen mock examination experiences are as similar as possible. These mocks are marked to the same standard as high stakes exams by expert examiners.

In 2021, over 4000 students in the UK took an onscreen mock examination.

These onscreen assessments provide insights to teachers including individual and cohort analysis to help pinpoint students' strengths and areas for improvement, supporting targeted work in class, at home and when revising.

Within the Pearson onscreen exam platform, there is the option to see how the students interacted with the exam and how long was taken for each question. This enables the personalisation of support for improving topic knowledge and skills.

We have also introduced a sandbox environment which allows teachers to experience the online exam environment, by testing one of our International GCSE (9-1) English Language mock papers.

The feedback from teachers has been positive, welcoming this additional information on student performance and behaviour. This service has also reduced teacher workloads, as no teacher marking is required (this is undertaken by examiners), and scripts are collated in an intuitive way.

Pearson Edexcel GCSE (9-1) Computer Science

Summer 2022 saw the delivery of a 9-1 GCSE with an element of onscreen assessment – Computer Science. 50% of the assessment was delivered onscreen, with students' coding examined in a development environment, giving them an opportunity to demonstrate real-world skills.

Teaching for this course began back in 2020 and has prepared students for the practical, onscreen examination.⁴

This type of onscreen assessment differs from our onscreen International GCSEs and onscreen mocks as not all of the process is delivered onscreen. However, the successful delivery of this Computer Science GCSE (a high stakes assessment, with a significant onscreen element), represents another step on a pathway to further onscreen assessment and, perhaps, ultimately more high stakes assessment onscreen.



GCSE Computer Science student

"On-screen programming assessment seems like a really obvious thing to do. Given that computers are where you learn and practice coding, it makes sense that's also where you'd be assessed."

3. Onscreen Assessment in Action

SEND & Onscreen Assessment Study

In June 2021, Pearson conducted a small-scale study in collaboration with Assessment MicroAnalytics that explored the accessibility and user experience of a digital assessment platform used by secondary-aged learners with mild to moderate SEND (Special Educational Needs and Disabilities) conditions.

We found that digital assessments have the potential to significantly improve the accessibility and user experience of large scale examinations for a whole range of students. They will also help students and schools to avoid the lottery of inequitable access that is caused by inaccurately diagnosed SEND conditions, resource constraints and stigma.

Students taking part in the study expressed a strong preference for, and enjoyment of, the digital assessment in comparison to their experiences of paper-based examinations. They particularly liked:

- The ability to correct errors (i.e. deleting wording or fixing spelling mistakes) in ways that mean they can retain a clean working interface.
- The more attractive interactive, and multi-modal item designs.
- The availability of accessibility features such as adjustments to text size and colour.
- The ability to type instead of writing by hand.



In 2021, over
15.5%
of all pupils in England
received SEND support
of some kind.

This study shows that onscreen assessment can provide help students with SEND better opportunities to demonstrate their abilities. We must now continue to iterate platform and item design to best meet the diverse needs of learners with SEND.

4. Roundtable

In November 2022, Pearson held a roundtable on onscreen assessment. Bringing together educators, academics and industry experts, the session considered participants' thoughts on onscreen assessment, their experiences, and the opportunities and challenges onscreen assessment presents, through the lenses of technology, the system (e.g. end of year exam periods), and standards. Here is what was discussed:

Key themes

Students: Participants agreed there is a strong appetite for onscreen assessment from students, explaining that online is their "normal way of working" and "how they live". Those involved in the International GCSE pilots were able to describe students' eagerness to use digital tools and how this removed the stresses of traditional paper-based examinations, which they said had been exacerbated by learning via technology throughout the year.

Formative assessment: Introducing onscreen assessment at formative level will provide the space to innovate and will help build confidence in stakeholders and improve the summative transition, whilst providing a better learning and assessment experience for students.

SEND: Another positive theme of the discussion was the benefits for SEND learners, with one participant describing onscreen assessment's affordances for accessibility for students with SEND as "spectacular" and "highly valuable", adding that digital accessibility should be driving this agenda.

Role of parents & guardians: The importance of ensuring buy-in from parents and guardians as key stakeholders in their children's education was highlighted by a number of participants. Work undertaken by Qualification Wales in this respect was referenced positively.

Technology: Funding for technology was seen as the biggest issue, along with other issues related to digital infrastructure (such as internet bandwidth and computer numbers). This is not a new observation, but one participants felt central to the issue.

School leaders also cited a lack of access to consistent technology in schools - with some using PCs, others iPads. They also pointed out that some devices and software packages require internet access - which is not possible under current regulations.

There was an agreement that there needs to be a better understanding of the technology available to schools, building on the DfE's research around digital maturity ⁵, with awarding bodies sharing their knowledge of tech in schools.

4. Roundtable

System: The group felt that policy makers should not simply recreate what already exists, highlighting the opportunity to bring in creativity and innovation to examinations, particularly in more non-traditional subjects. However, the current regulatory system makes it difficult, in some places, to facilitate change. For example, all students have to simultaneously take exams in one sitting, which would be difficult onscreen given infrastructure limitations.

Operational considerations: Other operational challenges were discussed, including dealing with interruptions (such as power outages and fire alarms), as well as keeping track of papers and the need to keep answers secure if cohorts need to take the exams in batches due to IT limitations. The group concluded that it is important to remain realistic around the limitations of onscreen assessment at this stage.

Further research: In order to support policy makers, as well as the teaching profession, participants agreed the need for research into the impact of taking assessments onscreen as well as into the parity and validity of results from onscreen and paper assessments.

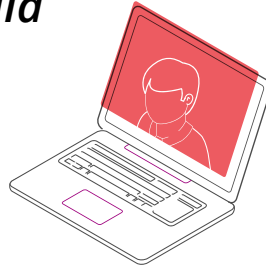
The overall picture from the roundtable discussion was positive, with stakeholders highlighting the benefits of onscreen assessment to different groups of learners, whilst providing thoughts regarding practical limitations, attitude-based barriers, and considerations for the policy making process. The appetite for onscreen assessment is certainly there, be it from students, teachers, or school leaders – but this discussion highlighted the many considerations involved and how an iterative approach is the sensible one.



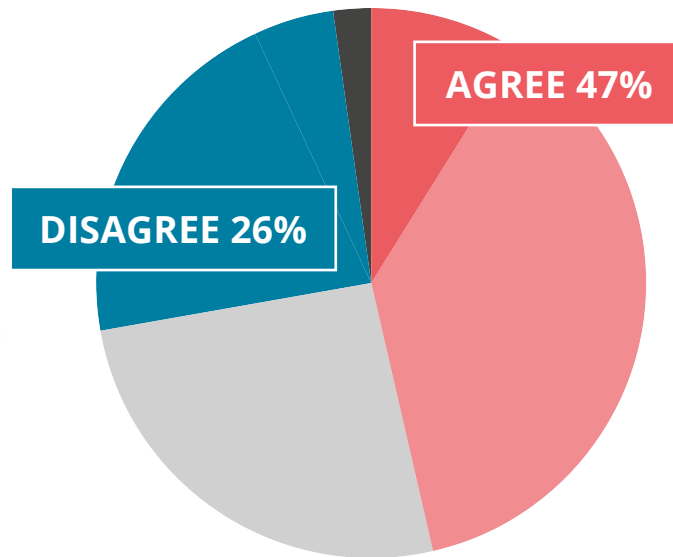
5. Polling

We polled over 5000 secondary school teachers, via Teacher Tapp, to understand their thoughts about students' preparedness for taking (high stakes) exams onscreen. Our roundtable discussion, and experience from the summer, suggested that young people are (for the most part) comfortable in a digital world, and would be able to make a smooth transition. Feedback from students who took onscreen assessments mentioned that typing was "easier than handwriting", and that the layout and tools were helpful when planning their answers. We wanted to test this with the wider teaching community, many of whom will not have had experience of onscreen assessment.

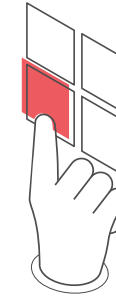
"My learners would be comfortable taking an on-screen exam"



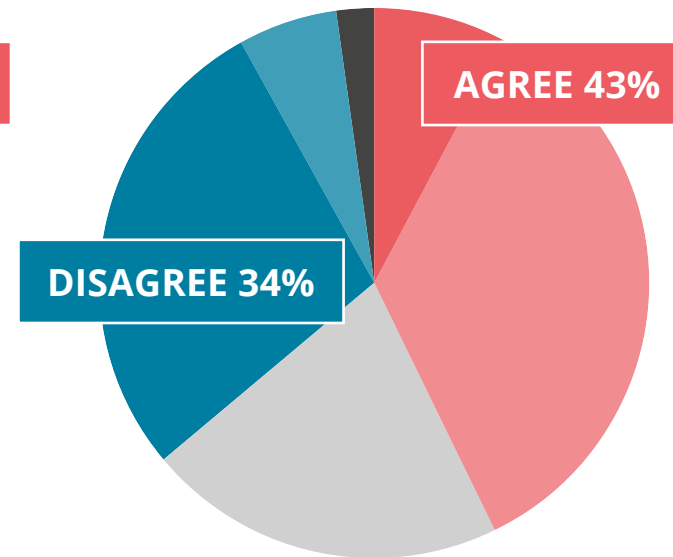
Strongly agree	9%
Agree	38%
Neither agree nor disagree	26%
Disagree	21%
Strongly disagree	5%
Not relevant / cannot answer	2%



"My learners possess the digital skills they need for onscreen testing"
(e.g. typing, manipulating text etc.)

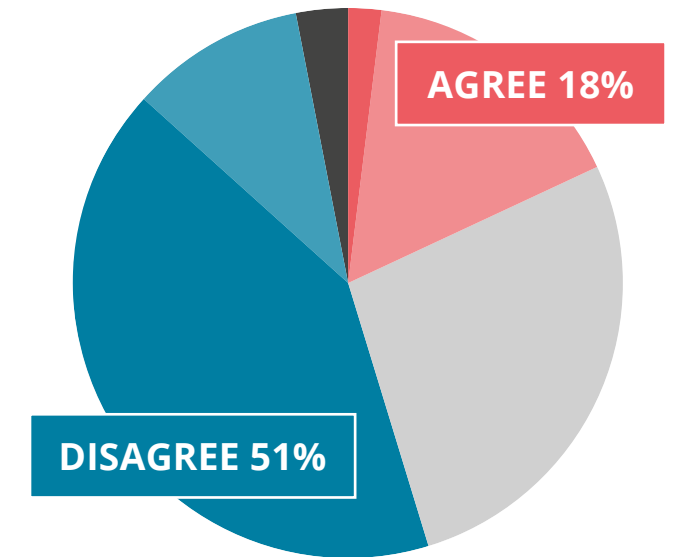


Strongly agree	8%
Agree	35%
Neither agree nor disagree	21%
Disagree	28%
Strongly disagree	6%
Not relevant / cannot answer	2%



"The curriculum provides learners with the digital skills they require to be confident taking an onscreen test"

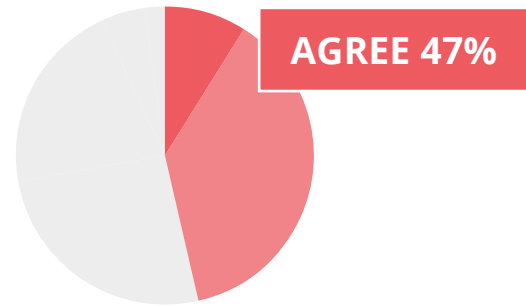
Strongly agree	2%
Agree	16%
Neither agree nor disagree	27%
Disagree	41%
Strongly disagree	10%
Not relevant / cannot answer	3%



Secondary school teachers (sample 5443)

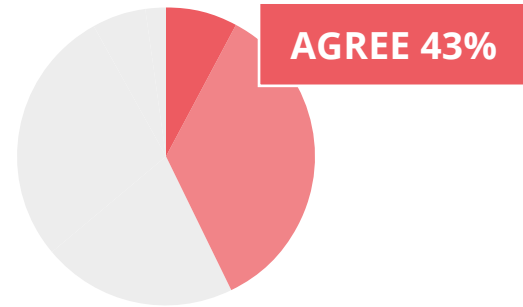
5. Polling

“My learners would be comfortable taking an onscreen exam”



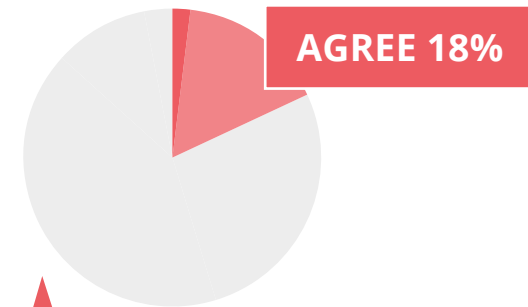
Less than half of secondary teachers felt their pupils would be comfortable taking an on-screen exam. However, this is almost twice as many as those who disagreed with the statement. As one might expect the older the pupil, the more comfortable with on-screen testing they are perceived to be.

“My learners possess the digital skills they need for onscreen testing”
(e.g. typing, manipulating text etc.)



A similar percentage (43%) felt their learners had the correct digital skills, whereas over a third believe those skills to be lacking.

“The curriculum provides learners with the digital skills they require to be confident taking an onscreen test”



Teachers felt that curriculum fails to prepare students for the future of assessment. Only a fifth of teachers (18%) agreed that the curriculum instils the digital skills needed for learners to be confident sitting an onscreen assessment – with over half believing it does not provide the necessary digital skills.

Across all three polling questions there are clear differences in the attitudes of teachers in private schools, most likely due to greater access to devices driving greater confidence. There is also greater positivity in schools with the most affluent intake (measured by free school meals ⁶), and in those schools that are academies, whether part of a MAT or a single entity.

Having a third of teachers believing their learners do not have the correct skills acts as a counter to the belief that onscreen assessment is a natural progression for the digital native generation. The truth is more nuanced and, as discussed as part of our November roundtable, access to devices and the internet is vital. Our experience with our international pilot shows that with the right materials, students are able to thrive and find onscreen testing a positive experience.

These findings regarding the curriculum are in line with the recent Pearson School Report which found that over half of teachers believe a “better digital curriculum” is needed to prepare pupils for an online world. And 77% feel that digital literacy should be formally incorporated into the curriculum over the next decade. ⁷

6. Recommendations

It is clear there is an appetite for more onscreen assessment, including for high stakes exams, from teachers and students. Our successful delivery over the summer of 2022, shows what can be done. Although all of those we have spoken to recognise the longstanding barriers that exist they also advocate a step-by-step approach, working alongside policy makers and regulators to continue the progress that is being made.

To support this, we recommend Government and regulators work with awarding organisations to:

Undertake a comprehensive audit of the existing technological infrastructure in schools for delivering onscreen assessment.

Give full consideration to the regulatory barriers that schools face, such as the internet access ban which restricts the use of some types of device or the requirement that students sit exams simultaneously.

Conduct a thorough examination of how the curriculum can better provide learners with the necessary digital skills to successfully participate in onscreen assessments.



7 Pearson next steps

Pearson will **offer more high stakes onscreen assessments in 2023**. This will include our International GCSE English Language & International GCSE English Literature qualifications.

Pearson will **explore greater use of onscreen formative assessment**. This will include increasing the number of subjects available through our Mocks Service.

Pearson will **continue to work with experts on accessibility requirements for SEND students**.

Pearson will consider **how to further integrate onscreen assessment and digital skills into learning products and services**. We will build on our existing research and evidence base and share our findings with policy makers and regulators.



8.

Acknowledgements & Methodology



Roundtable participants

Hayley White	Pearson (Chair)
Aimee Barr	Ark
Nick Cairns	King's College School, The British School of Madrid
Andrew Daly	Meriden Trust
Peter Doyle	BESA
Louise Lee	Oasis
Bryan Maddox	UEA
Mick Walker	Chartered Institute of Assessors
Mike Whittingham	Trentham Academy
Matt Wingfield	eAssessment Assoc.

Polling

Polling undertaken by Teacher Tapp on behalf of Pearson.

The questions were answered by

7,877 teachers

on 28/11/2022, with results weighted to reflect national teacher and school demographics.

Endnotes

- 1 Ian Bauckham CBE at the Schools and Academies Show 2022
<https://www.gov.uk/government/speeches/ian-bauckham-cbe-at-the-schools-and-academies-show-2022> (Accessed 9 December 2022)
- 2 Pearson, School Report, July 2022
<https://www.pearson.com/uk/educators/schools/issues/school-report.html> (Accessed 9 December 2022)
- 3 Pearson survey of those students who took the onscreen examinations (Summer 2022)
- 4 Pearson GCSE Computer Science
<https://qualifications.pearson.com/en/qualifications/edexcel-gcses/computer-science-2020.html> (Accessed 9 December 2022)
- 5 DfE, Education technology: exploring digital maturity in schools (March 2022)
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1061797/Exploring_digital_maturity_in_schools.pdf (Accessed 9 December 2022)
- 6 Free School Meal Quartiles: Q1 (affluent) vs. FSM Q4 (deprived)
- 7 Pearson, School Report, July 2022
<https://www.pearson.com/uk/educators/schools/issues/school-report.html> (Accessed 9 December 2022)





Insights: Onscreen Assessment

Pearson “Insight” papers consider emerging policy issues across education and skills, through our experience and that of sector professionals and experts. These form part of our “Spotlight” policy series.

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 <https://www.pearson.com/uk/news-and-policy/spotlight.html>

