



Technology in qualifications in the future

Summer 2021 roundtable events notes



Introduction

The pace of change and digitalisation within the qualification system is increasing and has accelerated during the Covid-19 pandemic. To better understand these changes, and what they might mean for the future of qualifications, Qualifications Wales has held a series of roundtable events to hear directly from awarding bodies.

Three sessions were held virtually, between April and June 2021, with representatives from a wide range of awarding bodies. Qualifications Wales is grateful to all who attended the sessions and to those who offered thoughtful and stimulating presentations during them, including colleagues from awarding bodies, learning providers and assessment platform holders.

These notes summarise what we heard during the sessions and offer us an extremely valuable insight into the benefits, challenges and opportunities that the digital evolution of qualifications presents.

The pace of change

We heard that the pace of digitalisation within the qualifications sector is increasing, and that the Covid-19 pandemic has accelerated it further. The pandemic in particular has:

- Broadened the implementation and availability of e-assessment features to a wider range of qualifications.
- Hastened the introduction of other planned digital assessment features, including on-demand testing and remote invigilation.

Our attendees also told us that momentum continues to grow, with new qualifications built to be delivered digitally and remotely assessed, with other paper-based assessments being withdrawn.

We also heard that awarding bodies are continually engaging with centres, including through surveys, to understand how they can be involved in digital change.

Encouragingly, we also heard about examples of large-scale digital transformation elsewhere in the world and we were encouraged to acknowledge the importance of tasking risks, trying new things and understanding that in this context inaction could be far less preferable.

Digital literacy skills

We heard that core and fundamental digital literacy skills, for candidates and for those facilitating assessments, will need to be ensured to allow widespread adoption of digitalisation within qualifications. These include:

- The skills needed to use software and digital technologies that are required to access assessment content.
- The appropriate use of required hardware, for example in locating cameras to capture recordings at the best angles to support assessment and to carry out pre-assessment checks to troubleshoot and ensure compatibility issues are negated.
- Ensuring that health and safety standards are maintained, such as when remote assessment is used in place of an in-person assessment observation and fewer individuals potentially being present.
- We heard that research has shown that teaching and learning do not always match learners' preparation for assessment, as time is sometimes spent having to learn how to prepare to offer handwritten responses, and that digitalisation of assessment may be an opportunity to address this.

- Conversely, we also heard that digitalising assessments could mean that the assessment of digital skills themselves could become a secondary outcome. Whether this would be preferable could depend upon the type of qualification and subject content.

Designing digital assessments

We heard about the opportunities provided by a move to digital assessments and the additional opportunities provided by on-screen and online platforms. They included:

- Recognising that digitalisation changes the nature of assessments and provides opportunities to assess skills in new ways.
- Opportunities to assess higher-order skills than knowledge recall, in particular in open-book assessments, where the focus of an assessment can be on the ways in which candidates engage with information to create new outcomes. We heard a view that accessing, recalling and relaying information is not a higher-order skill in our digital world.
- The use of item banking and tagging facilitates the generation of multiple test versions of equal challenge and the use of adaptive testing to reflect candidates' levels of ability, providing more detailed assessment judgements and feedback.
- Opportunities to review and simplify the language and reading demand of assessments.
- Enhancing the stimulus material that candidates can review and interact with during assessments, including formula editors and graphs.
- Permitting candidates to attempt recorded performance-based practical assessments more than once, submitting the preferred recording.

Overcoming the digital divide

Our attendees recognised that ensuring digital equality for learners and candidates is crucial, and initiatives have been used during the Covid-19 pandemic to bridge some of the divides. Digital divides can be identified in the technologies to which learners have access both at home and in the range of devices that are available in schools.

This means that introducing innovations with digital technology may cause issues for centres that have older equipment than others, for example, but the possibility of

minimum technical standards being established in centres could support awarding bodies to understand what can be delivered.

Automated features of digital technology were also identified as an area to monitor, particularly in assessments that offer paper-based or digital options, as they may disadvantage candidates who do not use newer technologies to complete their assessments.

Some digital assessment platforms used by awarding bodies, however, incorporated offline features, including the secure local storage of assessment evidence, that mitigate some connection issues that candidates or centres may experience.

Managing change

Our attendees reflected on some of the challenges that have arisen in delivering qualifications and assessments digitally and identified some actions to support future changes.

We heard that the speed of change seen in the sector since March 2020 has led to some change fatigue in centres, requiring awarding bodies to ensure that their communications are clear, set parameters and keep centres up to date. However, attendees recognised that the pandemic has stimulated change that might otherwise not have happened, and one key lesson has been to always find the most appropriate platform and arrangements for an assessment. A learning provider also told us that the move towards digital assessments has been positively received by learners and centre colleagues, with staff now seeking to understand whether there may be any implications on transitioning learners to more traditional assessments.

One assessment platform holder told us that stakeholders were concerned only a few years ago about the viability of its work on a national digital assessment program, though they believed it could benefit learners. In this case, supporting centres to identify the level of digital assessment which they could offer supported buy-in through choice, with thousands of on-screen assessments now having been delivered. Stakeholders in subject areas requiring specialist data entry, such as mathematics and science, had been more sceptical – and this was also identified by a learning provider in Wales as an additional issue to overcome in the design of formative digital assessments – underlining the need to adopt tailored approaches in each subject area. The use of trials and pilots was also implemented to learn lessons as the work scaled up.

We heard that the design of qualifications and curricula may wish to consider, based on the scale of change we are seeing in this area, whether digital skills need to be

further integrated within subject content, and that pedagogy may need to adapt as more varied forms of evidence become the outputs of digital assessments.

Optimistically, one learning provider observed that the sector seems to be moving into a second stage of integrating digital technologies in qualifications and assessment: candidates are learning and being assessed while not just *on* technology but in *using* technology. Another speaker reflected on an example of innovation that had been achieved in delivering secondary science as an example of collaboration between awarding bodies and centres that drove wider change.

Teaching, learning and engagement

We heard that the Covid-19 adaptations and remote invigilation of examinations has reduced anxiety for some learners as they approach their assessments and reduced issues for others in arriving at assessment centres on time. Platform holders also told us that their work on national digital assessment programs has brought improvements in learner engagement and one told us that over 90% of surveyed learners expressed a preference for digital assessments over paper-based ones.

One guest speaker implored attendees to ensure that as far as possible learning and assessment go hand in hand, giving learners the best chance to use the results of assessment as the basis for future improvement. One learning provider found that told us that the recent use of an e-learning and assessment package was warmly received by learners, who found that it reinforced their learning and complemented the reduced level of face-to-face learning (due to Covid-19 restrictions) well. Another learning provider posited that such packages may even have alerted the sector to the need to consider the best use of teaching contact time with learners, questioning whether teaching time might be best used to focus on the development of skills rather than delivering knowledge-based content which could be accessed independently by learners. Another provider noted the positive reception that a gamified assessment platform, which could also be accessed remotely, has been another positive way to engage learners in vocational subjects.

The benefits of combined learning and assessment platforms were also highlighted by learning providers and platform holders, for both formative and summative assessment purposes. The benefits included:

- Outcome records could be logged for review by learners;
- Platforms could be used to schedule flexible assessment opportunities;
- Shared access to logs by learners and teachers allows for enhanced feedback;
- They support hybrid and distance learning approaches;

- Some features of combined platforms allow for enhanced levels of assessment control.

Impact on subject content

Attendees told us that digital technologies may impact upon the subject content which can be covered in qualifications and assessed via digital means.

We heard from one provider that a digital simulation tool allowed all learners to access simulated automotive diagnostic equipment simultaneously, potentially mitigating manageability issues in providing simultaneous access to such equipment for a class or cohort of learners. The tool had been found to prepare learners well for practical assessments.

One awarding body also described a new qualification which allows learners at 14-16 to use simulation equipment to operate construction plant equipment. Though the simulation equipment represents an initial expense, it enables learners to develop knowledge and skills in a priority sector that would otherwise not be available to them at this stage. We heard that some employers are also working with centres to arrange access to the simulation equipment.

In other qualifications, Covid-19 adaptations allowed centres and candidates to use a wider range of software packages to support collaboration, which raised the possibility of an increased international dimension to such tasks. The pandemic was found to have increased both learner and teacher willingness to try new software packages and approaches. Providers and awarding bodies also remarked on the ability of shared access to documents allowing assessment evidence of collaboration to be generated, though noted it presented a challenge to awarding bodies to develop guidance to ensure that contributions were sufficiently visible. The pandemic had also shone a light on the utility of less common forms of assessment, for example 'vivas' or discussions, particularly in formative assessment.

The potential for candidates to engage with new forms of stimulus material was also acknowledged by learner providers and platform holders. We heard that the level of challenge for multiple-choice items can be significantly raised through the choice of stimulus material and the design of distractors. A centre also gave examples of the diverse range of uses for virtual reality that are currently being offered to learners, from carrying out medical procedures to taking part in jury service, which can be a rich basis for subsequent reflection and questioning.

Marking and feedback

Our attendees told us that digitalisation of assessments poses some challenges to those working in centres and for awarding bodies. We heard that there is ongoing work with centres to encourage the creation of original digital assessment evidence, rather than the secondary digitisation of assessment evidence. We also heard that the move to digital marking systems saw the loss of a small number of external assessors. However, there had been a net gain as the opportunities for flexible working provided by digital marking have been attractive to others. Enhancements to the security and safety of assessment evidence through digital marking were also noted.

Platform holders also told us about the opportunities provided by automated marking. In technical subjects such as mathematics, where there may typically be a more finite range of errors made by learners and candidates, feedback could be targeted to individual steps in responses when marking digital evidence and had been found to have a very high level of marking accuracy. This has meant that learners can receive almost instant feedback, enabling learners to move forward without delay.

The feedback generated by auto-marked assessment systems could also be used to support targeted development by:

- Flagging and recommending modules and packages which learners could use to support their development.
- Providing detailed assessment judgements and feedback reports to teachers to support their planning.

Platform holders told us that automated marking systems are being used in Wales, the UK and around the world to deliver summative and formative assessments opportunities, and that there is ongoing work to develop automated marking systems for subjects that require longer, text-based responses.

Flexible assessments

Attendees discussed the opportunities for flexible approaches to assessments that may be possible through an enhanced use of digital technologies.

One platform holder told us about its work in two international digital assessment programmes that began by offering optionality for centres and learners to access either paper-based or digital assessments. One has now moved to a solely digital model, with another maintaining the optionality but with a longer-term goal to adopt a 'digital first' approach and which has nonetheless delivered more than 160,000 digital assessments since its inception.

We heard that digital technologies have provided essential flexibility during the pandemic, including through remote invigilation, and that technologies could offer resilience for any future disruption too, for example by using digital platforms to capture ongoing assessment evidence that could be utilised in judging final outcomes or calculating grades. We also heard candidates' performance in formative assessments on an e-learning platform had a strong correlation with the outcomes of final, summative assessments, indicating the potential use of such assessment data.

Flexibility was also stressed as a necessary design consideration for supporting accessibility and inclusivity, including for learners with additional learning needs or of different ages and backgrounds, who may be more comfortable with creating some forms of evidence over others.

Accessibility

We heard that accessibility considerations are constantly changing as digital technologies develop, as 'normal ways of working' adapt and the range of tools that learners use in their day-to-day lives shifts. One learning provider reflected on some of the adaptations that candidates are permitted to use and encouraged attendees to permit the tools their learners employ, which are often software based rather than utilising specific hardware.

One awarding body contribution outlined the range of priorities for accessible digital assessment, which included seeking to align with the ways that learners work and improving outcomes for learners in minority groups, and had noted no significant differences between those in different groups that take digital assessments.

This contribution also noted that a key consideration in the design of assessments in vocational areas is often to reflect occupational competence, and it is important to maintain an understanding of how digital technologies and automation change the nature of competence and therefore of what qualifications seek to assess. Changes to the nature of work, including through the use of digital technologies in more occupational roles and in remote working, may also influence future discussions and perceptions about what access arrangements can be permitted.

We heard that accessibility is primarily about fairness, and technology can support fair access to qualifications and assessments, and one awarding body summarised that the challenge to all stakeholders in the sector is to make access as equitable as possible, through whatever schemes that means.