**[[1]](#footnote-1)Testing Times? Could COVID-19-19 be our TINA\* opportunity to enhance assessment?**

Richard Fuller, Viktoria Joynes, Jon Cooper, Katharine Boursicot, Trudie Roberts

Key practice points

**1** Whilst disruption across education/assessment systems is significant globally, application of a ‘what, why, when, what’ framework drawn from theory-good practice can help colleagues make wise choices that will benefit their assessments

**2** Questioning the ‘how’ of assessment allows us to rethink key challenges in assessment, including cheating, technology and adapting existing assessment tools

**3** Understanding our response to the COVID-19 crisis presents real opportunities to develop our assessments further, focusing on a compassionate, collegiate model of practice that should actively include our learners

Notes on Contributors

***Richard Fuller***, MA, MBChB, FRCP(Lon), FRCP(Edin), FAcadMed is a Stroke Physician, Professor of Medical Education and Deputy Dean of the School of Medicine, University of Liverpool, UK

***Viktoria Joynes***, BA (Hons), MSc, PhD is a Senior Lecturer in Medical Education, and the Director of Studies for the MBChB programme at the University of Liverpool, UK.

***Jon Cooper***, MBChB, FRCP, FAcadMed is a Consultant Physician in Stroke and Geriatric Medicine, Honorary Associate Professor and Postgraduate Dean, Health Education England Working Across Yorkshire and the Humber, UK

***Katharine Boursicot*** BSc, MBBS, MRCOG, MAHPE, NTF, SFHEA is the Associate Dean for Assessment and Progression, Duke-National University of Singapore Medical School, Singapore

**Trudie Roberts,** BSc, MBChB, PhD, FRCP, FRCP(Glas), NTF, FAMEE is a Physician and Professor of Medical Education at the University of Leeds and Past President of AMEE

**Introduction**

The global disruption caused by the COVID-19-19 pandemic has impacted every sector in society. Education has been affected at all levels, from kindergarten to Continuing Professional Development, as institutions cope with closure, social distancing and challenging decisions about how to continue teaching.

Assessments at school education and University levels have been particularly impacted, with the UK seeing major changes resulting in abrupt cancellations of high school, pre-University national testing, graduating assessments and professional examinations (UK Government, 2020). Within health professions education (HPE), this disruption has been particularly complex as many learners and faculty occupy dual roles as healthcare practitioners in clinical practice in addition to their teaching and learning roles.

At the undergraduate level, teaching and assessment in campus settings have been affected with many faculty members being expected to return to focus only on clinical practice, with others being expected to rapidly redesign programmes and courses. In postgraduate training, similar issues with supervisors have also led to considerable disruption in many workplaces and national examinations.

What has been the impact of these changes on our established approaches to assessment? Social distancing requirements mean that most of our traditional ways of testing (exam halls for knowledge tests, Objective Structured Clinical Examinations (OSCEs) for practical skills) are no longer feasible or appropriate for large cohorts. For clinical performance assessments, such as the OSCE, further complicating factors include difficulties in recruiting examiners (who are predominantly clinicians and focused solely on clinical activity), as well as clear safety issues, particularly where patient volunteers are used. Whilst workplace-based assessments (WBA) may be considered as an alternative format, particularly in postgraduate assessment, clinicians and their supervisors may struggle to engage with this at times of significantly increased clinical workload.

As part of a wider series reviewing the impact of COVID-19 in HPE (AMEE, 2020), this paper focuses on some critical questions in assessment at a time of unprecedented global crisis. What decisions and factors should we consider in our approaches to assessment in reacting to this challenge? What solutions and good practice can be shared?

Recognising that we may not return to ‘business as usual’, how can we take advantage of the maxim ‘Never let a good crisis go to waste’? How can short term crisis management engender opportunities for long term improvements in assessment practice?

**Making sense of some critical questions in assessment**

*Rethinking the ‘why and who’ of assessment*

The cornerstone of any assessment decision rests around its purpose, and a clear alignment to curricula and programmes of study (Norcini et al, 2018). Understanding a more contextualised approach to ‘why’ we are assessing in HPE (e.g. graduation into competent practice, learner development, curriculum evaluation), allows us to examine ‘who’ we are assessing and their stage of study (new medical students, graduates, clinicians in practice). This enables better understanding of the short- and long-term consequences of decisions taken around assessment.

In the current context, for students at an early stage in curricula and training programmes, opportunities to assess differently/later should be explored, as there should be no immediate impact on progression. This is particularly the case where there are ample opportunities to assess for progression at a later stage of training. If the purpose of the assessment is to make a licensing/graduation level decision or promotion to the next training grade, retention of high stakes assessment decisions will obviously be essential. It is important the ‘why’ of assessment recognises its value in the evaluation of training programmes, particularly those that are yet to reach maturity. This also means a need to accept that students at different stages of training on the same course may be assessed differently, from each other, and from cohorts that have come before.

*Rethinking the ‘when’ – keeping assessment compassionate*

A natural extension to the ‘why and who’ is the ‘when’ of assessment. The tendency to look for a ‘replacement’ solution for a licensing level assessment must be balanced against the challenges of delivery of assessment, and decision making on outcomes at a time of relative chaos, and poses the question how defensible will these decisions be?

Understanding some of the intentional and unintentional consequences can often support decision making in these circumstances. A short notice ‘replacement’ assessment is likely to be at risk of error as faculty and institutions grapple with a rapid learning curve for new systems and processes, alongside the wider challenges noted in the introduction. Test takers similarly have prepared for assessments that may not take place in the intended format. All will have faced wider personal disruption – and so it is essential that changes to assessment are accompanied by a review of rules and processes (e.g. around mitigation, appeals and the number of permitted attempts).

The ongoing drive to refocus our thinking from assessment tools to systems presents opportunities to ask, ‘do I need to assess now?’. This presents opportunities to either defer assessments to later in the programme, or even cancel assessments that might be absorbed into assessment at a later stage. A critical component of this decision requires us to understand what data we hold about students, and to what extent (e.g. a further single best answer knowledge) assessment adds value to what is already known.

More programmatic approaches to assessment (van der Vleuten, 2016) have overcome much of this reliance of high stakes testing, by designing assessment systems that make use of multiple assessments across a course, each regarded as a low stakes ‘data point’, which are reviewed as a holistic whole to make high stakes data ‘decisions’. Using this pre-existing data provides really exciting opportunities to look at assessment being both ‘*personalised and programmatic*’. However, it is noteworthy that these systems succeed through good design and planning – whereas a sudden decision to (mis)use existing formative assessment data (designed for a different purpose) to make high stakes decisions is an approach that can be difficult to defend. Where assessments have not been designed to base progression decisions on previously, using them to do so also risks unsettling an entire cohort of students whose trust in ‘why’ they are doing an assessment may not be easily re-won, leading to years of unnecessary challenge over assessment outcomes.

Whilst immediate decisions may need to be made in the current context, more holistic considerations of assessment burden at this point will support a compassionate approach to assessment – for faculty, learners and institutions.

*Rethinking the ‘what’ – an opportunity to think about assessment design?*

Recent evolutions in testing design also pose opportunities to deliver assessment differently in this time of disruption. The application of adaptive, cumulative or sequential testing approaches (Homer, Fuller & Pell, 2018; Collares & Cecilio-Fernandes, 2019) can be of value in maximising efficient use of resources with established assessment tools, particularly where considerations of safety and social distancing are paramount. Returning to what might be regarded as previously traditional assessment formats (e.g. structured orals and case based ‘patient management problems’) can also yield benefits when coupled with modern practices of scoring design and standard setting (McKinley & Norcini, 2014). However, all of these opportunities must be balanced against the challenges of introducing methods of high stakes assessment where faculty and learners may be unfamiliar with format (Jervis & Brown, 2020)

Whilst suddenly changing the format of high stakes assessments may be challenging, COVID-19 brings a real opportunity to explore different assessment for learning (AfL) designs. As low stakes assessments focused on providing actionable feedback to learners, they can also be of significant value in generating data to inform faculty and curriculum planners where students are struggling with particular concepts, particularly when teaching delivery may have been disrupted. (Sambell, McDowell & Montgomery, 2012).

When rethinking assessment design and format, HPE can learn from wider education about the merits of ‘takeaway tests’ or open book examinations (Bengtsson, 2019). The latter should not be confused with a time constrained, online test (e.g. using closed book style questions), but reflects assessment that can test higher order thinking, knowledge utilisation and problem-solving skills. Well-designed open book tests use questions that are not easily answerable by an internet search engine and lend themselves well to the use of (clinical) cases and problems. Concerns about cheating are understandable, but in an assessment for learning format, why not pose them as group assignments? Modern healthcare delivery is rarely undertaken by an individual, so designing open book tests for groups brings engagement, creativity and most of all, authenticity when coupled with the modern day open book – the smart device.

*Rethinking the ‘how’*

Whilst we hope the ‘what, why, how, when’ framework to support a critical review of assessment during the disruption can be of use in itself, our aim is to accompany this with practical tips, exemplars and to signpost resources to support the wider assessment community. During the AMEE COVID-19 webinar series (link), one of the most frequent questions from colleagues around the globe has been ‘how do I do….?’ However, for many colleagues, this often expressed alternatively through barriers or challenges. A common refrain relates to online assessment and the risk of cheating, as reasons why we cannot and should not, assess online.

As part of ‘rethinking the how’, the authors have created a series of responses to some of these common myths and misconceptions, and challenges surrounding increasing the use of technology in assessment:

1. **Everyone has a device, so switching to online testing that can be done at home is simple**

The majority of learners in most contexts within higher education have access to at least one type of device or another to support online learning (e.g. smartphone, tablet, laptop or desktop computer). Such a fact has been used to support the development of Bring Your Own Device (BYOD) policies in higher education (Sundgren, 2017). However, to assume this simply translates into assessment practices is to ignore some important issues around equity, and lessons learned from the field of technology enhanced learning.

Device ownership does not always imply a device that is up to date or suitable on which to run an online assessment. This is associated with an ‘equity gap’: some learners will have access to the latest technology, others will be surviving on second-hand or loaned devices, or even sharing equipment with siblings, parents and housemates (Pynos, 2016). Connectivity issues are common, not all Wi-Fi access is equal (or consistent) and this has major implications when considering an online test format. Even then, access to a device and reasonably stable WiFi does not guarantee a learner has guaranteed access to a suitable space to undertake an online assessment. Shared spaces and likelihood of interruption from children or other cared-for family members are likely to disproportionately be issues for less-advantaged learners, and those from the widening participation backgrounds institutions have fought for so long to include in their cohort (Patterson and Price, 2017). These issues are further complicated in professional and postgraduate education spheres, where device availability, connectivity and the clinical environment all pose additional challenges.

Understanding what students have access to what (device, connectivity and suitable space) and contingency plans for those who cannot (e.g. socially distanced spaces on campus to undertake the assessment online (are all key considerations for this “simple” switch. Without these considerations, assessments risk introducing error due to non-cognitive issues, and an attainment gap.

1. **Online testing simply means more opportunities to cheat**

There are many definitions of cheating in the literature but for clarity and simplicity the one used here is by Harper (2006). Cheating is *‘breaking the rules to get ahead’*. Studies in both the US and the UK have shown that significant proportions of medical students have either participated in cheating activities or would consider doing so. Sierles et al. (1980) found 58% of medical students reported cheating at least once. Rennie and Crosbie (2001), in a study of Dundee medical students, found only although only 2% admitted to copying however 58% admitted to plagiarism and Dyrbye et al. (2010) reported that although only 1.5% students admitted to cheating in exams 43% confessed to falsifying clinical findings. Does a switch to online assessment mean that dishonest assessment behaviours would be any more prevalent than those that we have already encountered?

Whilst a growing number of current knowledge assessments already use online technology for their delivery, many large-scale assessments (e.g. national licensing exams or university courses), still rely on specifically tailored accommodation where candidates’ identities can be checked, with invigilation or proctoring of the exam by Faculty or specifically employed staff. Any switch to online assessment in candidates’ own homes clearly means these examination centres cannot be used.

Assessments which use a candidate’s own equipment, in a remote/scattered environment are much more challenging to invigilate, leading to increased concern that this situation will facilitate a surge of cheating activity. This concern appears based on anecdotal assumptions that students taking online assessments at home using their own equipment are more likely to engage in cheating than students sitting tests in traditional on-campus assessment situations. Although very little has been written about this, a paper in 2014 by Beck did not find evidence of increased academic dishonesty.

Despite this lack of evidence there, has been an explosion of software systems designed to detect student cheating. These include audio & video monitoring via conferencing software or other proctoring programmes, recording photo and fingerprint identification of examinees, asking examinees to demonstrate they are alone by providing panoramic views of their environment using technology to lockdown their computers and even using programmes to monitor students eye movements. What message are we communicating about our students with these procedures?

In the case of undergraduate medical school assessments, candidates will often be students that the Faculty not only admitted to study medicine, but also have come to know over several years. The use of such draconian measures signals to students that we do not trust them to be honest. Is this the right impression we wish to imply, given that frequently one month after these graduating assessments we will be trusting then with patient care? Is Faculty’s role to merely catch and punish cheating students or is it to support students through their studies so that ultimately, they can be confident that by working hard they will be successful without having to resort to deception? Is it also to get students to understand that if they cheat and graduate with incomplete knowledge or skills they will be prone to experience anxiety and stress when they are working in the clinical environment and are more likely to cause harm to patients and burnout to themselves?

No-one believes that students want to be less than extremely competent doctors. Faculty should take the opportunity to spend their time in devising authentic assessments that require a higher order intellectual ability than the simple factual recall that Dr Google can supply. Schools need to develop a culture which ensures students understand the importance of medical ethics and moral philosophy and the effects or poor professionalism on patient trust and supports the very able students they have admitted to be ultimately successful.

The return on investment of such actions will surely be better value than continuing financial outlay on increasingly complex technology to spy on students.

1. **Online testing may be problematic, but surely it is impossible to run high stakes clinical assessment or assess in a busy clinical workplace!**

From an academic and best practice perspective, tests of clinical, communication and practical skills cannot be replaced by formats which do not require an examiner to observe the student or trainee’s performance (i.e. simply replacing the OSCE with knowledge tests or oral examinations/vivas). If the examination is critical (for example timely graduation), it is possible to conduct an OSCE with best infection prevention measures in place (Boursicot et al, 2020).

With more stringent ‘social distancing’ requirements, it may be possible to place the examiners on another site, with video-linkage to the student/trainee performing clinical tasks (e.g. testing practical skills with manikins). This has the advantage of allowing clinical faculty to examine, whilst remaining at their site of work, and observe and score electronically. The use of remote observation and scoring is not new to the OSCE, and video has been successfully used by others to examine differences in assessor stringency (Yeates et al, 2019). A more complex, but equally interesting opportunity sees examiners, candidates and simulated patients distanced from each other (e.g. at home or work), with consultation type stations conducted entirely online, observed and scored electronically by an examiner using commercially available systems. In this setting, Faculty reported that they could observe the interactions sufficiently well to be able to make fair and robust judgement about student performance (Boursicot et al, 2020). Students reported that once they were confident that their internet connections were stable, they could take histories from the SPs quite comfortably. The SPs reported that they felt safer at home, while still being able to interact with the students, as they were all familiar with video-calls in their daily lives. Similar approaches have been used for bespoke high stakes postgraduate examination, e.g. supporting trainee progression when the UK Royal College of General Practitioners’ Clinical Skills Assessment exam was cancelled (RCGP, 2020).

With this innovative approach, we see a new conceptualisation of OSCE formats, harnessing the best of technology enhanced assessment and healthcare, reflecting an authentic representation of current and future healthcare professional-patient interactions. Advancing the use of this technology lends weight to authentic assessment of newer skills of telemedicine and remote consultations, both at undergraduate (Waseh, 2019) and postgraduate levels of practice, e.g. within stroke medicine or dermatology (Lee and Nambudiri, 2019).

Assessment in busy clinical workplaces has been further challenged, not only by higher volumes of clinical work as a result of COVID-19-19 infections, but also by the restrictions on placed on how clinical teams interact. Different shift patterns, redeployment to cover service and the changes to team structures have affected many clinicians, but present real opportunities to engage with workplace assessment (WBA). The COVID-19 crisis means we are **all** learning: about an entirely novel disease and how we continue to deliver high quality healthcare and education alongside it. New skills are being acquired by all practitioners, and effective use of workplace-based assessment presents an ideal opportunity to capture feedback and consolidate this learning.

Whilst ‘bedside’ WBA formats (e.g. mini CEX) may be more challenging to deliver due to infection prevention guidance and the use of PPE (Personal Protective Equipment), alternative WBA formats such as Case Based Discussion can take place later, away from patient facing areas, or even be conducted online. Recording evidence and feedback for more complex skills (e.g. leadership and handover/handoff) can be undertaken using pre-established formats, with adjusted requirements that have taken the impact of clinical care into account due to COVID-19 (RCPCH, 2020). Even if numbers of WBA episodes are reduced, collating evidence of learning is vital to continue to monitor student/trainee development and provide support. Whilst sophisticated e-portfolios are available for use with built in WBA forms, simple open source applications can also be accessed to help collate WBA episodes for later review (e.g. <https://apps.apple.com/gb/app/student-passport/id1177957912>)

1. **So, should we bother investing in online assessment at all during COVID-19?**

Given the huge challenges posed for learning and healthcare and the arguments raised in this paper, should we be considering investing in technology supported assessment at all?

Investing in new technological systems at any time is a challenging, but the decision to take the plunge now perhaps feels for many educators even more of a risk. As global and national economies contract, the predicted impact on education budgets (Thomas, 2020) is likely to make institutions more financially risk-averse, with a focus on health budgets over education. Investment in apparently expensive technology may therefore feel like an odd choice at this time.

However, investment today represents not just an opportunity to deal with assessment disruption (and innovate alongside) but also to future-proof our courses from further, unanticipated disruption, not least further potential ‘peaks’ of COVID-19 infection, or another as yet unknown world-wide disruption. New systems might be “expensive”, but this typically reflects staff capacity, time and expertise, rather than simple monetary costs. Adopting technology to support assessment need not be expensive as resource constraint, particularly in the right environment, can be a key stimulus to creativity and entrepreneurial thinking (Rosso, 2014). Investment does not necessarily imply the need to buy new technologies, but to make better use of those already available to us in our institutions. This investment - the learning gained from using new systems – for both staff and students, will potentially continue to be useful long beyond the current crisis period.

There is a real opportunity to return to the principles of good assessment, working through the purpose, intention and scope and apply these to the use of technology. When considering what technologies we want to utilise in assessment, we often only look to our own sphere of practice. In health professional education, our focus has tended to be on offline and high stakes testing; in other educational spheres, a large body of successful work focuses on the benefits technology can bring to AfL (Nicol, 2009; Deeley, 2018). Increasingly, this ranges from the simple (e.g. quizzes and response systems) to more engaging activity for individuals and groups including student generated YouTube clips to demonstrate understanding of clinical and scientific concepts.

How then should we focus on investing our time for realistic implementation technologically driven AFL? Creating assessments that allow learners to have both ownership (of assessment) and opportunity (diversity in how the task is approached) is one way of making assessment more fun and social. This approach is not a ‘light touch’, instead requiring deeper application of concepts and creativity from our learners. For example, student generated photos, voice tags and media clips can be used as ‘evidence’ of engagement with assessment, while peer or assessor commentary can be done on shared documents (e.g. Google docs) or shared online spaces (e.g. Padlet). Co-creating alternative assessments with learners through a process of discussion will help educators understand what works for learners in their context and can be coupled with rich feedback (Treasure-Jones and Joynes, 2018). Possibilities here might be ways for students to access “testlets” or create open book questions for each other to answer.

Providing activity and engagement in a time of disruption in a way that generates assessment resource is positive for learners and the institution alike.

**TINA moments and a brave new world for assessment?**

With widespread disruption likely to exist for at least the medium term, can we regard this as our TINA (There Is No Alternative) moment for assessment in HPE? Many of the consequences of our approaches to ‘why, who, what, when and how’ of assessment (and the use of technology) will produce important results, both through success and failure. Collecting evidence of both intended and unintended consequences of assessment change, and the views of learners, faculty, patients and institutions will be vital. From a learner perspective, this is likely to manifest as a request that new ways of successful assessment are retained and developed, leading to a further series of critical questions about whether we ‘fail or scale’ these new approaches.

However, we recognise that all educators continue to be faced with the wider challenges highlighted in the introduction to this paper, and with so much change, it can be tempting to take a more conservative view and wait to return to ‘business as usual’. Distinguishing short-term crisis response measures from developments with longer term potential for enhancement can be a useful strategy for making sense of this change:



Applying this model of understanding crisis response (RSA, 2020) to assessment allows us to recognise opportunities for assessment innovation going forward. Are large examination halls now obsolete and should we ‘let go’ of this approach to assessment? What factors do we need to consider when we restart routine assessment (e.g. changes to blueprints due to missed clinical placements)? What temporary approaches should end? Importantly, what areas of assessment represent a real turning point and possibility of change (e.g. re-conceptualising cheating, the online OSCE, technology driven AFL)?

How then should we cope with an assessment future that feels like it is changing daily?

**Communication** is essential for all stakeholders. Providing clear information, and importantly explanation and reasoning, can help learners and colleagues understand the ‘why, when and how’ for assessment at your institution, particularly when others may be approaching this differently. Working with national education bodies and professional regulators is also vital to recruit support for short term crisis management, and longer-term innovation.

**Flexibility** in decision making will continue to be essential as we move forward. Things can, and will change, and agile thinking and planning (including from regulators) will be essential, particularly for countries where ‘local lockdown’ is being explored for more isolated future waves of infection in local communities, schools and healthcare providers. We shouldn’t be afraid of admitting that we need to move to Plan C – or Z!

**Collegiality** is more important than ever in our community of educators, not just within HPE, but drawing on resources, skills, literature and advice from wider higher and professional education spheres. The recent Ottawa Consensus statements provide a useful compendium of resources, including the latest draft guidance for technology enhanced assessment (via [**https://tinyurl.com/sjww5z8**](https://tinyurl.com/sjww5z8)**).**  However, collegiality should not be restricted to faculty and institutions, but presents a real opportunity to partner with our students and trainees

**Compassion** should be a driving philosophy in our engagement with staff, students, patients and our communities. We should be alert to changing priorities, roles, burdens and the impact of COVID-19 on all as we all balance education within professional and personal lives. Should part of our TINA moment for assessment be one that changes a culture that for too long has been adversarial and hierarchical, and embrace a different approach to how we all work together?

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1. TINA – There Is No Alternative [↑](#footnote-ref-1)