#### University of Glasgow

#### Inclusive Online Assessment Working Group - Final Report (October 2021)

#### 1. Introduction

The Inclusive Online Assessment Working Group (WG) was established in the context of the rapid development of online examinations during 2020 in response to the Covid-19 pandemic and the University's proposals to consider implementation of a universal design for assessment in the future. Concerns were raised in the numerically-based disciplines regarding the potential withdrawal of shorter timed exams and the WG provided a forum to consider further arrangements for timed exams, both in the short-term and longer term, and to consider potential opportunities for the development of inclusive assessment within quantitative disciplines. An interim report was submitted in June 2021 with recommendations for online assessment arrangements during 2021-22 along with proposed criteria for when exams could be held on campus rather than online (when the circumstances of the pandemic permitted this) – see Appendix A.

This report sets out the concluding work of the WG which has reviewed inclusive assessment methods that are currently used in some areas or could potentially be developed in order to widen the use of inclusive assessment across the University. This relates to the WG's activity in meeting Objective 3 of its remit.

#### Objective 3

Highlight opportunities for developing online assessment practices within quantitative disciplines that would merit further investigation and potential educational development within the University of Glasgow.

As previously reported to EdPSC, the WG has identified a number of barriers or challenges in adopting a full-scale shift in assessment practice, some of which apply specifically to the academic disciplines which have quantitatively-based elements or other unique characteristics which impact on assessment design and delivery (such as Modern Languages). The WG has attempted to take a constructive approach by noting these challenges along with potential solutions to them. It is therefore hoped that this report and its recommendations will support the development of inclusive assessment across the University and can be fed into the development work aligned to the Learning & Teaching Strategy implementation which includes significant resource investment to support the development of inclusive assessment.

#### 2. Definition

The WG has agreed on the following understanding of inclusive assessment in taking forward its work:

Inclusive assessment means that all students have the same opportunities to learn through assessment and are treated fairly and equitably throughout the assessment process. Inclusive assessment: respects the diversity of students, enables all students to take part and fulfil their potential, regardless of their backgrounds or (dis)abilities, and removes any barriers that prevent students from undertaking assessment successfully. It helps to reduce the attainment gap between different groups of students, such as those based on ethnicity,

(dis)ability, and/or gender, or their social and cultural capital and it can also support students' wellbeing by reducing unnecessary anxiety and stress (whilst recognising that some amount of stress is normal).

#### 3. Recommendations

Following a detailed consideration of current assessment practice and potential development, the WG recommends that:

- 1. Assessment practices are further developed in quantitative disciplines to increase inclusivity while maintaining fairness of assessments and academic standards and integrity.
- 2. Development of assessment takes account of the Pillars of the Learning & Teaching Strategy.
- 3. A programmatic<sup>1</sup> approach to the development of assessment is taken, noting that this approach increases inclusivity by diversifying the range and styles of assessments that students experience across a degree programme.
- 4. Schools are supported in the development and delivery of inclusive assessment, and the challenges surrounding the revision of assessment formats and design must be recognised.
- 5. Schools should be encouraged to work towards change, for example by taking an incremental approach where new assessment approaches can be trialled on a small-scale basis leading to a wider programmatic evaluation of assessment.
- 6. The issue of high-stake assessments is tackled and that this can be addressed by increasing the range of types of assessments offered to students within programmes, thereby improving inclusivity.
- 7. It should be recognised that in some contexts unseen examinations invigilated on campus are an appropriate method of assessment and these should therefore be retained as part of a wider range of assessment provision within programmes<sup>2</sup>.

#### 4. Current position with the development of online assessment

The WG noted current initiatives with alternative and inclusive assessment practice that were already in place. Some had evolved from the adjustments required by the Covid-19 pandemic whereas others had been introduced earlier.

The School of Chemistry has converted all Level 1 paper-based MCQs run through Teleform to online Moodle quizzes, which have been very successful and would be retained, and all Level 1 exams will continue to be online. It was noted that a lot of effort had been needed at the outset in setting up question banks but there were many benefits and once running, the system was sustainable. This format of exam allowed students to have flexible start times for sitting exams in a 24 hour period and allowed a broader palette of questions to be used than those available in Teleform.

The WG noted that the School of Mathematics & Statistics had been reviewing and developing assessment approaches for the last 10 years and practice had evolved over this time. Many courses now ran assessments in a more continuous way with assessment broken down into very small chunks week on week and allowing students some choice of

<sup>&</sup>lt;sup>1</sup> The Learning & Teaching Strategy articulates programmatic curriculum design and assessment as "clarifying where learning builds on prior study, how assessment operates across core courses, and where key discipline-specific and transferrable skills are developed and demonstrated".

<sup>&</sup>lt;sup>2</sup> Objective 4 of the WG was to set out criteria under which examinations should be held on campus \_ See recommendation 3 of the WG's First Report (Appendix A).

when to take these. With this design students were found to be less likely to take time out of active learning to prepare for the bigger class tests, which had been an unintended consequence of introducing class tests to move away from high stakes end of course exams. Online formats for assessment had been found to give students a quick efficient way of getting feedback. Groupwork has also been incorporated into some assessment. Student feedback has been mainly positive although there have been some concerns about over-assessment and the stress of performing across a high volume of tests. The WG considered this to indicate the complexity of assessment design, and that no single solution was perfect but some approaches could be more optimal and inclusive in some contexts.

Some areas found that student motivation dropped significantly if assessments were formative and attracted no marks towards the final course outcome. In response the School of Mathematics & Statistics had adopted an approach of making more assessments count a small amount, but in an effort to address concerns of over-assessment allowed (for example) the best 6 out of 8 scores count. The School considers the approach which has been developed to have positive outcomes in terms of student engagement and participation, and the achievement of the learning outcomes designed for the programme. Staff also valued the chance to get an early snapshot of student performance. The WG noted that the issue of students not engaging with formative assessment stresses the need to develop assessment literacy early on in a student's career to help students understand why they are being asked to complete formative tasks.

Other subjects also reported use of these approaches on a small scale and in the earlier years of UG study. New courses were also seen as an opportunity for development for example to offer a broader mix in the format of assessments.

Given the large-scale switch to online teaching and assessment required to manage the Covid-19 pandemic, Schools rapidly developed online assessments including formal examinations. However, as previously documented, a number of concerns have been raised regarding the arrangements for online examinations. Revised arrangements will be in place for the next online exam diet in December 2021 to address these issues. Other arrangements are recommended for future diets when some on-campus examinations may be possible including the criteria (see Recommendation 3 in the June Report of the WG – Appendix A) put forward by the WG for identifying when exams should be held on campus.

The WG supports an approach of broadening the range of assessments offered to students as this would allow: a reduction in high stakes assessment; improved inclusivity given that different formats of assessment suit different students; more scope for meaningful assessment that reflects 'real-life' activity and application beyond university. The WG considers that this approach allows the continuation of on campus invigilated exams as part of a range of assessments offered to students across entire degree programmes.

#### 5. Potential areas for development

In considering different assessments, the WG focussed on the paper *Methods of Assessment* shared by Kim Davis (Academic & Digital Design Adviser) and also a presentation on *Alternative Assessment* from Kim. The paper and presentation are provided in Appendices B and C.

The Methods of Assessment paper includes a glossary of almost 70 assessment formats. Members considered that a number of these were already in use in some areas or were features within current assessment design – for example graphs and diagrams are often included in timed exams. The WG noted that in some cases staff lack knowledge on how to deliver these assessment methods in their own subject area. Support in implementing other forms of assessment would therefore be beneficial. This could be for example in the form of additional technology in place, or to cover increase in time / cost requirements of more academics or marking assistants. It was also noted that the level of support required for delivery of some methods of assessment would vary depending on cohort numbers.

The WG agreed that the glossary was useful for highlighting potential methods that could be developed and could support colleagues in thinking creatively about introducing different assessment methods. Appendix D sets out the items from the glossary arranged in an order giving prominence to those that the WG considered more popular and noting how the various assessment methods supported the development of knowledge and understanding, and the application of knowledge and understanding to analysis in quantitative disciplines. It was also acknowledged that there would be other methods of assessments used in certain academic disciplines, so this list was not exhaustive, and colleagues should be encouraged to use any form of assessment that is inclusive.

#### 6. Challenges to taking forward development and potential solutions

The WG recognises there are complex challenges associated with revising assessment design which require careful management. For instance, in relation to the principle of broadening the range of assessment the WG notes that the potential implications for offering more forms of assessment include: increased assessment load on students; high volume of staff resource needed for designing and running different forms of assessment. There is concern that given current high workloads associated with delivery of learning and teaching in the context of the evolving pandemic, and with increased student numbers, capacity for development may be limited, and therefore challenges may be seen as a barrier to taking forward change. Table 1 therefore sets out potential barriers identified by the WG and notes possible solutions which could facilitate the development work required to support the University in its aim of increasing its provision of inclusive assessment.

Development of Inclusive Assessment		
Barriers/Challenges	Possible Solutions/Recommendations	
Increasing student numbers - especially in higher levels of study where focus is on assessment of more complex cognitive skills	Learning from experience in areas that have experienced large increases in student numbers (e.g. in Maths & Stats new structures for collecting and marking exams – all staff using tablets; assessing students in groups – members of staff circulate around the groups – covering larger numbers of students)	
Marking load – certain forms of alternative assessment are more intensive in terms of marking and feedback or may require more academic time/expertise to deliver	As above: learn from experience of other subjects which have introduced alternative assessment	
	Review organisation of staff marking teams including GTA marking allocations in context of alternative assessment	
	Develop central infrastructure to facilitate delivery of different assessment types	

#### Table 1

Potential assessment overload for students	This is a key point that must be factored into any planning and development
There is a tension between reducing high stakes assessment and avoiding assessment overload for students, and a	A balance has to be struck to ensure that the number of assessments set for students is not excessive
'down-time' between multiple assessment points.	A programmatic approach to assessment would facilitate and allow an overview of assessment load
	Consideration of a University-wide mid- semester break
Preparing students for new and varying assessment approaches	Students need to feel familiar/comfortable with assessment formats
	Central support could be provided by Student Learning & Development (SLD) or at College level to develop resources in consultation with relevant subject disciplines such as:
	<ul> <li>Guidance for students on UoG assessment approaches</li> <li>Generic (e.g. applicable on a suite of courses/programmes) formative assessment designed to support students in tackling new/unfamiliar assessment methods</li> <li>Writing Skills support that takes account of different writing styles needed for formats of written assessment</li> <li>Training in groupwork skills, particularly for international students</li> <li>Provision of samples of well done assessments</li> </ul>
Local learning and teaching structures – some Schools operate a common structure across all courses, so any changes would involve large teams with limited options to try out/trial on small	Review structures: look for ways to create opportunity for piloting new methods to support the development of offering a variety of assessment methods to students
scale	Improved central systems to support assessment processing avoiding reliance on local manual systems. E.g. delivery of a tool to combine grades for assessment components
	Review resource allocation structures to allow more flexibility at School level to respond to immediate and short-term demands (rather than fitting into a budgeting annual cycle)

	Integration with the course approval process: identify assessment design objectives/ principles that Schools will be required to consider when courses are updated or new courses introduced
Singular workload and reliance on individual academics who design, champion, implement, and deliver new forms of assessment in a particular course. If that individual moves to another role, there is a risk of losing the know-how	Administrative and (especially for technology-based/online assessments) technical support to provide training, expertise, and "implementation as a service" E.g. support for more complex assessment set up in Moodle. Systems/technical support should be at local level but developed and co-ordinated centrally and should be designed to strike an appropriate balance of input between academic and administrative staff in managing assessment (avoiding academic time being taken on administrative tasks)
	Improve central infrastructure to facilitate delivery of different assessment types e.g. access to statistical software for students who are off campus; availability of hardware for simulations; expanding range of institutional licences for online tools supporting assessment; workspaces for practicals
	Review local organisational structures to support team development of assessment.
Professional Body/Accreditation requirements e.g. imposing limits on the proportion of coursework that can be used in final year assessments	Co-ordinated dialogue with professional bodies at University/College/School level to explain the University's changing approach to assessment and promote the benefits of these changes – pedagogically and to provide reassurance on academic standards
Regulatory constraints and associated systems – e.g. Course aggregation procedures (challenges where minimum grade threshold is set for one component of assessment), exam arrangements	Dialogue with Senate Office to identify issues and allow policy review in light of changing approaches to assessment
Development of authentic assessment is challenging in some subject areas – such as those with less professional regulation where industry/employment/practical application contexts are very variable	Outreach work with targeted external sectors to gain an understanding of common principles that could be applied to authentic assessment in specified disciplines

The WG hopes that the recommendations in this report can support the University's activity in developing inclusive assessment practice across the institution. The summary of challenges or barriers to taking forward the development of inclusive assessment, and potential solutions to these, could also support development by informing action planning and implementation work associated with delivery of the Learning & Teaching Strategy and the WCG Assessment & Feedback Transformation Project.

University of Glasgow

#### Education Policy & Strategy Committee – Wednesday 21 June 2021

#### Inclusive Online Assessment Working Group - Preliminary Report Cover Sheet

#### Ms Helen Butcher, Clerk of IOAWG

#### **Brief Description of the Paper**

Following the agreed establishment of the Inclusive Online Assessment Working Group (IOAWG) at the last meeting of EdPSC, the working group has had six meetings and has drawn up its preliminary report and recommendations for EdPSC. This initial phase of work has focussed on the most urgent aspect of IOAWG's work – arrangements for examinations in 2021-22, particularly for the exam diet in December 2021. The working group will continue to work over the summer and into next session and will turn its focus to considering opportunities for developing inclusive online assessment practices within quantitative and other relevant disciplines that would merit further investigation and potential educational development within the University.

#### **Action Requested**

EdPSC is asked to **consider for approval**:

- 1. Recommendations 1,2 and 3 put forward by the Working Group for the short-term arrangements for online exams, and on campus exams (where these may be possible).
- 2. Recommendation 4 relating to exam adjustments for disabled students.

EdPSC is also invited to **consider** the further points relating to:

- i) the length of time students take to complete 24 hour exams, and where additional time is provided in timed exams;
- ii) communication and training to enhance student understanding and preparation for online exams;
- iii) the procedure for the application of the recommended criteria for timed exams and exams on campus (if approved).

Finally, EdPSC is invited to **note** the further work planned by the Working Group.

#### Recommended Person/s responsible for taking the action(s) forward

The Senate Office will co-ordinate any required actions.

#### **Resource Implications (where appropriate)**

The Working Group has identified a potential resource implication relating to Recommendation 1.

#### Timescale for Implementation (where appropriate)

As described in the report.

#### Equality Implications (where appropriate)

There are positive equality implications around the development of accessible assessment practice. In terms of the proposed arrangements for timed online assessments in December 2021, there are various considerations regarding disabled students, and students from diverse backgrounds which are explored in the paper. The Equality Impact Assessment in place for the assessment arrangements for the current academic year will be reviewed in relation to the proposed changes to the arrangements for next session.

University of Glasgow

#### Education Policy & Strategy Committee – Wednesday 21 June 2021

#### Inclusive Online Assessment Working Group - Preliminary Report

#### Dr Nic Labrosse, Convener of IOAWG

#### Introduction and Context

The WG has made three initial recommendations for the consideration of EdPSC relating to:

- i) the format for fixed time online exams in December 2021;
- ii) proposed criteria for when fixed-time online exams are required; and,
- iii) proposed criteria for when exams should be held on campus under invigilated conditions, should this be possible.

The recommendations relate to exams for quantitative subjects and other academic disciplines, such as those that require application of knowledge to practical or technical tasks in a timely way (for example exams in Modern Languages). The recommendations are based on Objectives 1, 2 and 4 of the WG's remit (see appendix 1). The WG understands that the online assessment arrangements introduced in March 2020 will be continued, or adapted, in many subject areas and agrees that the changes brought about by the Covid-19 pandemic should be reviewed with a view to optimising online assessment where it works for staff and students.

Recommendation 1 is set as a proposal for the **short term**, taking account of the current context where planning and preparation for next AY is taking place under the constraints of the ongoing pandemic, which primarily involve uncertainty over the extent to which there will be social distancing restrictions, or more severe constraints, in the coming months. At the same time, it is felt important to move beyond the emergency measures that were introduced in March 2020, given that some planning and preparation is possible, and that there has been a full academic session of online teaching and assessment. The WG accepts that there is no ideal solution in the current circumstances, and members remain live to the limitations of Recommendation 1 for the December exams in terms of inclusive assessment, particularly in terms of accommodation for students whose home arrangements/circumstances hamper their access to quiet uninterrupted study space.

Recommendation 1 is made on the understanding that the University's planning for the December 2021 exam diet needs to be for online exams off campus. However, the WG wishes to stress the desire for there to be provision for on-campus exams when the restrictions around the pandemic allow; and it is hoped that this may be possible in the spring and summer diets in 2022. It is understood that not all online exams would return to the on-campus format, and Recommendation 3 sets out proposed criteria for determining which exams should be held on campus. The WG will consider the design of these exams with a view to improving inclusivity.

The WG fully supports the development of more inclusive assessment and will take forward its work on this (Objective 3) in the coming months. Members have identified the need for a deeper discussion on the meaning and application of inclusive assessment in the quantitative academic subjects. The WG also notes that formal exams are part of a range of assessments offered to students, and the respective merits of different forms of assessment in terms of inclusivity will be discussed.

The WG has referred to the University's Accessible and Inclusive Learning Policy and the transformation activity in the development of programmatic and inclusive assessment arising from the Learning & Teaching Strategy in the development of the recommendations now presented to EdPSC, and these will also inform the ongoing work in developing inclusive assessment.

#### **Recommendation 1:**

For the December 2021 exam diet, which will offer online remote exams, where timed exams are considered necessary these should be in the following format:

- Time allocation: normal time duration, plus an appropriate download/upload time window where required\*. Disabled students registered with the Disability Service will have additional time as recommended in their Needs Assessment.
- Start time: either a fixed start time; or, to offer flexibility for different time zones flexible/multiple start time(s) within a 24 hour window, but only if academic integrity and resource implications make this realistic\*\*.
- Online proctoring: not recommended as standard, but may be implemented locally where required by professional/accrediting bodies.

\*Some online formats, such as Moodle Quizzes, do not require any download or upload activity from students, however where this is required Schools should set an appropriate window of time to allow students to complete the necessary actions. 30 minutes is suggested as a minimum where the volume and number of files is not large, (e.g. fewer than 5 files), but this should be extended to 45 or 60 minutes where a larger volume of material is involved. There will need to be clear communication to students explaining the reasons/criteria for the additional time window that has been set and guidance on how to use this appropriately at the end of the exam, along with reminders of the penalty for late submission if the upload is not completed within the exam period.

\*\*The WG strongly supports measures to ensure that students in international time zones are not required to take exams at unsocial hours. However, the WG notes that making such accommodation could be extremely resource intensive, for example in the production of multiple papers to be offered at different start times, with implications on academic and support-staff workloads. Therefore, a clear resource commitment is required from the University to support students taking timed exams in international time zones.

NB: Recommendation 1 aims to address concerns from subject disciplines about the operation of fixed-time exams: it does not preclude the continuation of other online examination formats that have been operating successfully in many areas of the University, such as open 24-hour exams.

#### **Considerations**

In reaching agreement to present this recommendation, the WG had extensive discussion that considered a number of factors, including inclusive assessment; student wellbeing; academic integrity; and assessment design. Members brought to the discussion their own experiences as students, academics, and support specialists; and wider student views were also conveyed from the student representatives. Some data from Schools and a range of articles and other resources on inclusive assessment were also circulated to the WG.

#### Inclusive Assessment

Dr Amanda Sykes gave an overview of inclusive assessment to the WG. It was noted that inclusive assessment means that all students have equitable opportunities to learn through assessment and are treated fairly throughout the assessment process. It respects the

diversity of students and enables them to fulfil their potential, removing any barriers that prevent students from undertaking assessments successfully.

The WG was also advised that inclusive assessment has potential to close the attainment gap between different groups and provides accessibility to assessment to students from various backgrounds and to those with disabilities or long-term illness. The use of certain types of inclusive assessment practices also means that students who might otherwise require a short amount of additional time for an exam would not have to attend a Needs Assessment through the Disability Service to access this. The extended time introduced for all students taking online exams since March 2020 in the 24 hours format was therefore seen as a real benefit to many students from diverse backgrounds.

In considering inclusive assessment and the benefits it could present to students, the WG also warned against overgeneralisation, noting that there were many variations in the contexts in which different students were operating, where forms of assessment considered to be accessible for many may not be optimal in all cases. As an illustration it was noted that students with caring responsibilities with young children may have different perspectives on optimal arrangements – one such student may prefer to attend a short timed exam on campus, which would allow them to remove themselves from their responsibilities at home where they are able to do so; whereas another may have barriers in terms of travelling to campus and therefore might find additional time in a remote online exam more beneficial. The WG was also made aware of the concerns of students requiring extra time who felt they would not have been treated fairly if they had not been entitled to additional time with respect to students who do not require extra time during timed (double time) exams.

#### Student Wellbeing

The WG was aware that there was widespread anecdotal evidence from both staff and students that students were taking excessive time to complete exams both in the 24 hour and double time format. Student representatives reported feedback from students voicing a high degree of concern at the length of time being spent on exams and a lack of confidence that less time was enough. This raised significant concern about assessment overload and student wellbeing.

More generally there was concern about impact on student wellbeing in relation to the introduction of alternative assessment methods in moving to a number of formats of online assessment. It was felt that this was a lot for students to cope with, especially as there had been changes to these arrangements. The need to ensure students were supported with a good level of information and appropriate preparation for new assessment methods was emphasised, and was considered to apply across all areas of the University.

#### Academic Integrity

There was significant concern about academic integrity in the context of the current arrangements, which many WG members felt created an environment that made cheating easy and also difficult to detect. For some there was a sense that these conditions almost invited illicit practices and therefore raised ethical questions around putting students in this position. The WG was advised of a notable increase in the number of referrals to the Student Code of Conduct relating to academic misconduct in the current academic year. There are early indications that these are mainly related to online assessments – both in-course exams and exams taken at the formal University exam diets, and are predominantly in subject areas requiring numerical or statistical exercises. Referrals included clear evidence of students sharing exam answers (through online platforms and also private social media groups), or seeking help on 'homework help' web sites. Markers were picking up patterns that indicated collusion or plagiarism, such as the same wrong answer being submitted by multiple students, or answers not based on what had been taught. Results profiles had shown

improved grades in many of the quantitative based disciplines, some more markedly than others, where exams had moved online. While it was acknowledged that a number of variables were associated with the change in assessment and the grade movement could not be attributed to any particular factor, it still added to concerns that there were significant risks around academic integrity given the increased opportunities for collusion and access to answers from external sources.

Deep concerns were reported from many schools at the prospect of continuing with these arrangements in the longer term in quantitative subjects and for other specialist areas such as language assessments. The combination of allowing longer time for exam completion and an unsupervised environment was of particular concern.

#### Assessment Design

The WG agreed that more substantial work was now needed, post-emergency, to review the design of online assessment in order to address various issues including: the need to design out plagiarism; and the mis-match between design of current assessments and the longer time students were routinely taking to complete them. Members reported that some redesign had been implemented with positive outcomes in terms of the assessment process, although these new approaches had been found to create much higher marking loads. The challenges of redesign were considered to be significant in the current context where assessments were both open book and allowed longer time, particularly in some areas of quantitative subjects, for instance where the students' ability to perform certain algebraic derivations must be assessed and where extended additional time makes it easier for the solutions to be found online. It was suggested that an inclusive approach of providing longer time to all students could be considered where exams were held on campus under controlled conditions.

There was also support for introducing a broader range of assessment formats to provide balance and to give students the opportunity to benefit from the different features of various formats that might impact variably on students depending on their individual circumstances/preferences. However, it was also acknowledged that in certain contexts more traditional exam formats are more appropriate than other assessment methods, including online exams.

In managing the transition to different assessment approaches, including the recent largescale introduction of online exams, it was agreed that staff need to be live to the key principles in assessment practice at the University, and to ensure that the marking guidance in the Code of Assessment is followed with grades being awarded on the basis of meeting the criteria set in the grade descriptors.

In light of the considerations noted above, the WG felt, on balance, that there was an immediate priority to address the two prime concerns noted above in considering the most appropriate arrangements for online exams:

- i) academic integrity; and,
- ii) students taking longer in exams than their design intended.

Alongside this, it was agreed that work should continue on the development of inclusive assessment in the longer term.

The WG considered a range of potential options for online exams in December 2021 for quantitative type exams (see appendix 2). Option 9 was identified as the preferred basis for the recommended format for these exams. Option 10 had also been considered, and WG members agreed that ideally, there should be some accommodation for students who did not have adequate facilities (such as access to quiet uninterrupted study space). However,

offering additional time to take remote online exams for such students was not considered viable as there was no means to assess their domestic facilities, and it was anticipated that allowing self-selection would lead to large numbers of students requesting additional time. The only potential solution that could be identified was to offer facilities on campus where self-selected students could take their exam(s) in the same time period as the rest of the cohort.

**Recommendation 2:** Proposed criteria for deeming a timed exam to be necessary and unsuited to a 24-hour timeframe.

The view of the working group is that timing reduces opportunity for collusion, use of cheat sites, or internet trawling for similar solved problems. Timing also supports a focus on developing independent thinking by reducing the time available for consulting external resources to inform answers. It is proposed that a fixed-time format (with either a fixed or flexible start time) should be permitted for online exams in any of the following cases:

- 1. Where the assessment involves demonstrating independent ability to recall/reproduce knowledge and to show competence in applying that knowledge to certain practical or technical meaningful tasks in a timely way.
- 2. Where questions tend to be objective and good answers are necessarily similar.
- 3. Where the exam questions cannot be randomised across the cohort of students taking the exam.
- 4. Where an antiplagiarism software cannot be used (e.g. with diagrams or mathematical derivations).
- 5. Where future assessments set by professional or statutory bodies will involve timelimited assessments to ensure attainment of professional competency or standards.

**Recommendation 3:** Proposed criteria for determining whether a timed exam might be hosted on campus and under what arrangements (for when the University is in a position to run on-campus exams).

Where it is established that the full cohort of students has access to the relevant University campus and that the course documentation stipulates the requirement for some on campus activity for the completion of the intended learning outcomes, the WG proposes that exams should be hosted on campus in any of the following cases:

- 1. Where open-book conditions undermine the authenticity of an assessment that is associated with specific learning outcomes, eg. the capacity to recall/reproduce knowledge and/or show competence in applying that knowledge without recourse to external resources.
- 2. Where required by professional/statutory bodies.
- 3. As a preparatory exercise for senior level exams to ensure that students in earlier years of study have the opportunity to build experience in taking this format of exam.

#### Further recommendations/points to highlight to EdPSC

In addition to the above recommendations, the following points are drawn to the attention of EdPSC:

#### A further Recommendation – Recommendation 4

In considering the principles around exam adjustments for disabled students, the WG **recommends** that if additional time is to be provided specifically for disabled students, this should be based on their individual Needs Assessment rather than a blanket additional time period being applied to all disabled students.

For short-window assessments, when adding additional time for disabled students, best practice would be to allocate the time specified within their Disability Report following a Needs Assessment with the Disability Service. To be registered with the Disability Service, students are already required to disclose, present supporting evidence and be assessed by a Disability Adviser as requiring this support. Therefore, the individual adjustments recommended should be observed, rather than a standard time, which may not suit the needs of all disabled students. This applies to both online and on-campus assessments.

#### Points to Note

- 1. The WG suggests that the concerns noted around students taking longer to complete exams when extra time was provided (24 hours or double time) should be considered more widely as these could be impacting on other subject disciplines.
- 2. The WG identified the need to develop clear communications and training for students to enhance understanding and preparation for online exams in their various formats, including: explanations around exam types and the length of download/upload windows, which may vary between exams; exam preparation (such as provision of sample questions or sample solutions); time taken during exams, avoiding late submission.
- 3. It is noted that for Recommendations 2 & 3 there would need to be agreement on how the application of the criteria for timed exams and exams on campus would be implemented procedurally. Initial discussion with the VP (Learning & Teaching) has led to the suggestion that this activity should take place at School level and no formal reporting would be required. However, the expectation would be that a considered and measured approach is taken by Schools. Registry would be required to monitor activity and to report any significant fluctuations, for example a significant increase in timed exams compared to the numbers in Spring 2021 would not be expected.

#### Further Work

Following feedback from EdPSC on its preliminary recommendations (1-3 above), the WG will continue its work, focussing on the following:

- 1. In-depth work on Objective 3 to look at the possibilities for development of inclusive assessment for quantitative-type assessments, taking the opportunity to re-think assessment and consider alternatives to traditional exams.
- 2. Consideration of various issues around fixed timed exams:
  - Flexibility is required for Spring 2022 while on campus exams may be possible, this is currently unknown, and capacity is unknown as social distancing requirements are not yet set. Contingency planning is therefore required if exams are scheduled to take place on campus, which would allow a switch to online assessments at short notice if required.
  - Considerations around a "mixed economy" of online and on-campus assessments e.g. resits in August 2022 would cover some resits of exams taken online in December 2021, so the feasibility of offering these on campus must be considered. There may also be situations where students are not available to get to on-campus exams if there are some remote learners in the cohort or students are self-isolating.
  - Considerations around the link between exam design and exam format, and possible approaches which may make switching between formats more achievable for instance, running open book exams on campus to keep parity with online format.

- Accommodation of students taking online fixed start time exams in different timezones.
- The operation of Good Cause to seek waivers for penalties for late submission of online exams, noting that the special arrangements currently in place (relaxed rules on evidence) may not be operating in 2021-22, and student representatives remain concerned that there are barriers to students submitting GC claims.

#### Appendix 1 – Inclusive Online Assessment Working Group: Objectives

The following objectives are set out in the WG's remit.

- 1. determine how the University should proceed with online assessment, in particular online examinations, for quantitative subjects during Session 2021/22 in order to ensure integrity in assessment and to maintain academic standards whilst also taking account of the need for fairness to students;
- 2. propose a set of criteria for deeming a timed exam to be necessary and unsuited to either a 24-hour timeframe or timed within a 24-hour window;
- 3. highlight opportunities for developing online assessment practices within quantitative disciplines that would merit further investigation and potential educational development within the University of Glasgow; and
- 4. set out the criteria for determining whether a timed exam might be hosted oncampus and under what arrangements, were that to be proposed at some point during 2021-22.

### Appendix 2 – Summary of Options considered for Online Exam Arrangements in December 2021

Option	CURRENT FORMATS
1	Seen Exam - 24 hours to Submit. Exam paper is released before the 24 hour submission window opens. All students have the full 24 hour window to upload answers
2	Open Exams within 24hours. All students have 24 hour period to take the exam.
3	Timed Exam within 24 hours – one paper downloaded, all students have double set exam timeto upload it, plus 1 hour for students registered with Disability Service
4	Timed Exams - Fixed Start time. All students have double set exam time, plus 1 hour for students registered with Disability Service (No proctoring)
5	Medical School Local arrangements: Timed Exams - Fixed Start time. Normal time and online proctoring through Zoom breakout rooms
	OTHER FORMATS TO CONSIDER
6	Normal time + 30 mins download/upload - With online Proctoring Disabled students have additional time - fixed amount
7	Normal time + 30 mins download/upload - With online Proctoring Disabled students have additional time - as per recommended provision following Needs Assessment
8	Normal time + 30 mins download/upload - No online Proctoring Disabled students have additional time - fixed amount
9	Normal time + 30 mins download/upload - No online Proctoring Disabled students have additional time - as per recommended provision following Needs Assessment
10	Options 6-9 above PLUS provision to allow students without access to quiet study space to register for extra time
11	Normal time within 24 h - Disabled students have additional time - fixed amount
12	Normal time within 24 h - Disabled students have additional time - as per recommended provision following Needs Assessment

#### Appendix 3 – Membership of Working Group

Convener	Dr Nic Labrosse
Academic & Digital Development	Dr Kim Davis
Adam Smith Business School	Dr Marco Avarucci
Chemistry	Dr Hans Senn
Computing Science	Dr Joe Maguire
Engineering	Dr Kevin Worrall
Mathematics & Statistics	Professor Tara Brendle
MVLS Professional Schools	Professor John Paul Leach
Physics & Astronomy	Professor Aidan Robson
Senate Office (& Clerk)	Helen Butcher
SMLC	Dr Eanna O'Ceallachain
SRC VP Education	Grigoris Kokkinidis
SRC VP Student Support	Ella McCabe
SRC School Representative	Katie Fish
Student Learning Development	Dr Micky Ross
Student Wellbeing & Inclusion	Danny Gallacher (alternate – Clare Craig)
World-Changing Glasgow Transformation	Dr Amanda Sykes

#### Methods of Assessment

#### Introduction

As a University we are committed to continually enhance our teaching and assessment practices based on evidence of effectiveness for learning. This means supporting the development and introduction of assessment that is meaningful, allows students to build their understanding across their programme of study, and enables them to demonstrate their understanding and skills as well as their knowledge. We are also strongly encouraging the use of smaller pieces of summative assessment that build towards larger ones and/or formative assessment to enable students to practice the skills they will be expected to demonstrate in larger pieces of summative assessment. One outcome of this evolution in our assessment practices will be a reduced reliance on some of our current approaches where there is not a good pedagogical reason for continuing to use them.

#### Meaningful Assessment:

Meaningful assessment is a form of assessment which involves students conducting 'real world' tasks in meaningful contexts. It is often presented as a continuum; at one end are work-based assessments completed in (usually) simulated 'real world' settings, and at the other end is an applied question in a 'traditional' exam.

One way to think about meaningful assessment is to consider what we want our students to be able to do with the knowledge/skills they gain from our teaching, and what they would likely do with that/those knowledge/skills in a workplace? We can then use an assessment that will enable them to demonstrate similar knowledge/skills so that they are emulating what they will do later, rather than using assessment to only test their recall.

#### Specifically, consider the following questions to enable you to create meaningful assessment:

- Why are you teaching your students this 'content'?
- What is it you want them to know/learn/understand/be able to do?
- How could they prove to you they 'get it'?
- How would they show you in a work-environment that they are using this knowledge/understanding?
- How does this course and this assessment fit into the programme of your students' learning, build on their current skills, and prepare them for future assessments?

The answers to these questions will help you to think about assessments you might use.

#### Adapting Assessments for Your Context:

The table that follows provides examples of methods of assessment you might want to consider using with your students for formative<sup>1</sup> or summative<sup>2</sup> assessment, or both. They are arranged alphabetically. When reading through this list, please consider which of these methods will allow your students to demonstrate the Intended Learning Outcomes for your course and how you might use formative (or small pieces of summative) assessment to support your students' development should you choose to use one of these other methods. The method you choose *will* need to be

<sup>&</sup>lt;sup>1</sup>Formative assessment is work students do that helps them prepare for a summative piece of assessment. It should allow them the opportunity to demonstrate the required skills / knowledge that they will need for their summative assessment. Formative assessment is a 'no stakes' piece of work that allows students to reflect on their learning. It may be graded but the grade will not be used to calculate part or all of the final grade for the course.

<sup>&</sup>lt;sup>2</sup> Summative assessment is work that is graded, contains feedback on learning and contributes to the final grade for the course and in so doing, towards the progression threshold or degree outcome.

adapted for your context (subject/requirements/students' experience/etc). The following examples hopefully show how a small change in emphasis can result in more meaningful assessment and test different skills.

#### Examples of adaptation:

- 1. <u>Dentistry (D)</u>: The original assessment was to write a researched and referenced *essay* about a new toothpaste. The adapted and more meaningful assessment was to write a researched and referenced *information leaflet* about a new toothpaste for the general public.
- 2. <u>English Language and Linguistics (EL&L)</u>: The original assessment was to *critique* an act of parliament (AoP). The adapted and more meaningful assessment was to *write* an AoP.

Whilst both these examples might, at first, appear simplistic, the changes create assessments that test more than *can you research and write something* (D) or *can you critique something* (EL&L). Instead they become *can you research a topic and then communicate your research to a specific audience* (D) and *can you use your understanding of a well-written AoP to create your own* (EL&L). These changes test a student's ability to *apply* what they have learned in a more 'real world' situation, so creating more meaningful assessment.

It is also worth noting, that formative assessment does not necessarily need to mimic the summative assessment, but it does need to create opportunities to demonstrate key aspects assessed in the summative work. For example, if the summative piece of work is an essay, the formative work does not need to be a similar essay but could rather be a smaller, focused task, such as an annotated bibliography, allowing students to demonstrate the research needed for a piece of written work, or a practice introduction giving students the opportunity to learn how to create introductions appropriate for the subject and level.

#### Assessment Types

Assessment	What does the student do?	What is this useful for/how can this be used?
Abstract	Students write an abstract of a research paper/article within a specified word limit e.g. 300–500 words.	Allows students to demonstrate understanding of a topic, ability to summarise, and practice the skill of good abstract writing.
Advertisement	Students write an advert for a role that they might fill, or that might need filled within a project team	Allows students to consider the skills they need to develop, or that are needed for a particular project/type of work
Annotated bibliographies	Students produce a list of texts, primary sources and internet sites on specified or agreed topics to a particular referencing convention. They annotate these with a commentary, which could include an evaluation of what they have read.	Allows students to demonstrate breadth/depth of reading, understanding of relevant texts, and ability to research.
Articles for different audiences	Students are asked to write on a particular topic(s) to an agreed length in a specific style e.g. a journal, newspaper or leaflet.	Allows students to demonstrate ability to communicate with different audiences and shows how well they understand the topic.
Assessment stations (aka OSCEs)	Most often used in Med/Vet/Dentistry, students move around a series of testing stations being assessed on a number of skills, each for a fixed period of time.	Allows students to demonstrate a wide range of practical skills and knowledge.
Blog	Students are required to keep an individual blog.	Allows students to record progress, write for other audiences, make links to other relevant websites etc.
Brochure	Students are asked to write on a particular topic(s) to an agreed length for a specific audience	Allows students to demonstrate ability to communicate with different audiences and shows how well they understand the topic.
Budget with rationale	Students are asked to create a budget and justify it (note: this could also be a costed business case). Allows students to consider the cost of a project/lab/case work/trip etc etc	Allows students to show their understanding of the costings required for any project and justify why those finances are required.
Case study/analysis	Students are required to work through a case study to identify the problem(s) and to offer potential solutions	Useful for assessing students' understanding and for encouraging students to see links between theory and practice. Note: case studies could be provided in advance of a time- constrained assessment.

Chart, graph, visual aid	Students produce a visual representation of data.	Tests a number of skills: understanding of data, understanding useful/correct visual representation of data, understanding of audience who the visual representation is for.
Client report for an agency	Students produce a report on a topic/subject/project/etc for an outside agency	Students demonstrate their ability to communicate the 'important' information to a fictitious client.
Concept maps/cognitive map/web/diagram	Students map out their understanding of (or research about) a particular concept. This can be used as a precursor to a larger piece of work (e.g. as formative work for summative work later)	This is a useful to provide feedback to students on their work and to staff on students' understanding of the topic.
Create something	Students make or design something, e.g. podcast, prototype, video clip, webpage etc.	Tests students' design/creativity skills and understanding of a brief, of any technical aspects of a 'build' etc
Debate	Students argue different sides in a debate on a specified topic.	Demonstrates research into a topic, ability to argue a case/point, ability to listen to others and counter an argument
Definition	Students create definitions of words/concepts.	Demonstrates understanding. Can also be used as part of group work where a shared glossary is created, and students edit each other's work
Description of a process	Students describe how something works.	Allows students to show that they understand the process
Diagram, table	Students produce a visual representation of data.	Tests a number of skills: understanding of data, understanding useful/correct visual representation of data, understanding of audience who the visual representation is for.
Dialogue	Creating or engaging in dialogue	Allows students to show their understanding and, if the dialogue is aimed a specific audience, their ability to translate their knowledge for that audience
Draft	Students write a draft of a piece of work	This is a great way to support students and check their understanding of both the topic ad the criteria for a piece of assessed work.
Executive summary	Students write a summary of a report, either as a draft of the report, or of an actual report	Students demonstrate ability to summarise the most important points, or 'message' for a specified audience

Fill in the blank test	Students fill in blanks in statements	Demonstrates knowledge of key words/concepts/definitions
Flowchart	Students create flowcharts of processes relevant to the subject/discipline	Demonstrates understanding of how the processes to achieve a proscribed outcome might be achieved
Funding bid	Students create relevant funding bids, sometimes using actual funding bid forms, sometimes a simplified version	Allows students to practice funding applications
Group discussion	Students take part in discussions about a specific topic, often with preparation. Discussion may, however, be to work out what students already know about a topic to then lead to further work/research.	Allows students to practice making verbal arguments or explain concepts/theories
Instructional manual	Students create instruction manuals for another audience – maybe other students, or an outside audience	Demonstrates communication appropriate to the audience which requires solid understanding of a topic/theory/concept
"Introduction" to an essay or report (rather than the full report)	Students can write either just an introduction or are only graded on the introduction as part of the report	Allows students to demonstrate ability to concisely explain the background to a theory/topic/subject/concept
Laboratory reports	Students are required to write a report for a laboratory exercise.	Demonstrates understanding of steps/processes undertaken during experimentation and interpretation of results.
Learning logs	These are lists of activities and outcomes which students check off during a period of learning. For example, students could be asked to indicate competencies which they have practised to a specific level during a work placement.	Allows students to show they have completed tasks required of them and may include reflection on those tasks.
Letter to the editor	Students write a letter to the editor of a newspaper/journal/magazine in relation to a current story or paper	Demonstrates construction of an argument supporting or challenging a current 'story'.
'Live' exercise	Students are provided with an initial dossier of papers to read, prioritise and work on, with a variety of tasks and new information given at intervals throughout the period the exercise runs.	This is usually a problem-solving exercise and often enables multidisciplinary teams (either across years, or across subject specialisms) to work together to achieve an outcome.
Matching test	Students match items. Often used with diagrams and series of labels, or with matched statements. Matching can be simple or complex.	Students show that they know elements of (for example) structures, or requirements. May also include relevance of matched items

Matarials and matheds plan	Students draft a plan for the materials and methods they will	Domonstratos planning for practical work
Materials and methods plan	use, or would use, in a practical setting	Demonstrates planning for practical work
Mathematical problem	Students solve mathematical problems	Demonstrating ability with formulae, mathematical processes etc.
Media profile	Students are asked to use pictures or headlines from newspapers and magazines to illustrate the public perception/profile of a particular aspect of the subject. They can also write responses.	Students analyse the public perception of a topic/theory/project etc. Useful for considering accuracy of reporting (fake news) etc.
Memo	Students write a short piece explaining a concept/theory etc	Students demonstrate ability to summarise, communicate essential points and show that they understand these.
"Micro-theme" (a tight, coherent essay typed on a 5x 8 note card)	Students write a very short piece explaining a concept/theory etc	Students demonstrate ability to summarise, communicate essential points and show that they understand these.
Mini-practical	This involves a series of mini practical sessions. Can be conducted under timed conditions.	Creates the potential for assessing a wide range of practical, analytical and interpretative skills
Multimedia or slide presentation	Students create a presentation about a concept/theory/project etc	Demonstrates communication skills and understanding of key points of concept/theory/project etc
Multiple-choice test	Can be useful for diagnostic, formative assessment, in addition to summative assessment.	Well-designed questions can assess more than factual recall of information.
Narrative	Students write a narrative piece about a concept/theory/project etc	Demonstrates ability to create a narrative and to write for a specific audience
News or feature story	Students write a news/feature about a concept/theory/project etc	Demonstrates ability to write in style and for a specific audience
Notes on reading	Students write short notes on a reading covering key elements of that reading, usually for a specific purpose.	Demonstrates ability to summarise, to identify key points and to create useful notes
Observation	Students are observed whilst undertaking some form of 'performance'. This is commonly used in teaching classroom practice and laboratory work.	Students demonstrate proficiency with practical skills
Online discussion boards	Students are assessed on the basis of their contributions to an online discussion for example, with their peers; this could be hosted on a virtual learning environment (VLE).	Students demonstrate engagement with the topic and with their peers

Open book exams	Students have the opportunity to use any or specified resources to help them answer set questions under time constraints.	Removes the over-reliance on memory and recall and models the way that professionals manage information.
Oral report/presentation	Students are asked to give an oral presentation on a particular topic for a specified length of time and could also be asked to prepare associated handout(s).	Can usefully be combined with self- and peer- assessment. Demonstrates communication skills and ability to summarise
Outline	Students prepare an outline, or plan, for any forthcoming piece of work.	Demonstrates ability to summarise and to show thinking/structure
Part-written practical reports	Lab sheets given to students provide some of the write-up in full but leave sections such as error analysis, theoretical explanation etc. for the students to complete.	Supported way to introduce students to new concepts or to remind students of steps/stages in a practical whilst testing their ability with the work.
Patchwork texts	Students write a number of small pieces of work ('patches'), which they then have to later 'stitch' together in a reflective commentary. The patches and the tasks upon which they are based are discrete and complete entities in their own right.	Allows students to show that they understand each element and so enhances understanding of the content as a whole. Spreads assessment across a course rather than relying on high stakes assessment
Performance	Students are required to give some form of performance, e.g. concert, play, dance, poem, choreography etc.	Demonstrates ability in that aspect of performance
Personal letter	Often instigated as a letter to next year's students, or to their peers.	Supports students to reflect on what they do, or do not, understand.
Plan for conducting a project	Students write a project plan before undertaking the work	Ensures students know what they need to do to complete the project. Provides opportunity for support/feedback, particularly for students who are less confident
Portfolios / e-Portfolios	Students provide evidence for their achievement of learning outcomes; these commonly incorporate a reflective commentary.	Allows students and staff to keep track of completed work and to reflect on, or provide support for, achievements throughout a course.
Poster	Students are asked to produce a poster (either 'real size or as a PowerPoint file) on a particular topic.	Can be used individually or in groups to assess a range of activities
Problem sheets	Students complete problem sheets, e.g. on a weekly basis.	This can be a useful way of providing students with regular formative feedback on their work and/or involving elements of self- and peer assessment

Question banks	Students are assessed on their ability to produce a certain number of questions on a topic. This helps students to recognise what they do and do not understand about a topic. PeerWise is one piece of software used for this at the University of Glasgow ( <u>https://peerwise.cs.auckland.ac.nz/</u> )	Ensures students understand the topic they write the question about. Can be useful for students for revision too.
Reflective diaries	Students record their learning over a period of time, with an additional reflective commentary which could support the development of an action plan.	Reflection can support a student to understand how well they are meeting the learning outcomes and what they need to do to improve
Regulations, laws, rules	Students identify and (perhaps) comment on the relevant regulations (etc). Or they write their own.	Enables students to understand the context/framework relevant to them.
Research project	Students undertake a research project individually, or in groups.	Students can demonstrate practical, analytical and/or interpretative skills as well as knowledge and understanding.
Research proposal	Students write a proposal for a research project. This may include a proposal for funding	Ensures students know what they need to do to complete the research. Also provides opportunity for support/feedback, particularly for students who are less confident
Review of exhibit	Students review an exhibit for a specific purpose. It could be (for example) the history of the object, or the science or a critique of the exhibit, or how the exhibit is used.	Can be used in many ways, dependent upon the purpose. Tests ability to communicate, to create an argument, to think and write about a subject form a different perspective etc
Review of website/journal article	Students write an account or make an oral presentation reviewing a website/article (or similar).	Can include an evaluative element to demonstrate depth of reading and level of understanding in concise formats
Role play	This is traditionally a 'performance' done in pairs/as a group. However, students could write or give a presentation taking on a particular role, e.g. a journal reviewer/editor, consultant, art critic etc.	Encourages students to see things from a different perspective and to argue/discuss from that role.
Seen exams	Students are provided with the questions to be answered in a time-constrained context in advance. Alternatively, the examination topics may be released in advance, but the specific questions are unseen until the exam.	Removes some of the anxiety of unseen exams and the ability to simply reply on recall, enabling preparation.

Selective or sampling report	Students are asked to either write specific sections of a report (e.g. methods section) or write practical reports in full but know in advance which elements of the report will be assessed	Allows students to develop skills in one area of report writing at a time.
Short answer questions	Students answer question with short written responses.	Useful to assess a wide range of knowledge/skills across a module. Often recall-based which, occasionally, may be essential in some subject areas.
Simulations	Text or virtual computer-based simulations are provided for students who are then required to answer questions, resolve problems, perform tasks and take actions etc. according to changing circumstances within the simulation.	Useful for assessing a wide range of skills, knowledge and competencies.
Statement of assumptions	Students write the assumptions they need to make, or the assumptions they are making, before continuing with a piece of work.	Supports students to consider how they think about a concept/theory/project etc and to help them to understand how assumptions can impact on a successful outcome.
Wiki	Students create a wiki, usually in groups, to explain concepts	Creating a wiki page requires understanding of the topic and of how to communicate that understanding to an audience.

Sources:

The HEA: <u>https://s3.eu-west-2.amazonaws.com/assets.creode.advancehe-document-manager/documents/hea/private/different-forms-assessment\_0\_1568037200.pdf</u>

The University of Reading <a href="https://www.reading.ac.uk/engageinassessment/different-ways-to-assess/eia-different-assessment-methods.aspx">https://www.reading.ac.uk/engageinassessment/different-ways-to-assess/eia-different-assessment-methods.aspx</a>

Appendix C

INTERNAL AND CONFIDENTIAL TO THE UNIVERSITY OF GLASGOW



### Alternative Assessment Methods

### Identifying What Types of Assessment Will Meet Instructor Needs for Assessing Student Learning

- To develop creative assessments of students' learning, think about the specific skills and knowledge that need to be assessed. (from the Center for Innovative Teaching and Learning, IU Bloomington).
- 1. Do you want to assess student acquisition of specific content knowledge, or their ability to apply that knowledge to new situations (or both)?
- 2. Do you want to assess a product that students produce, or the process they went through to produce it, or both?
- 3. Do you want to assess any of the following? a. writing ability b. speaking skills c. creativity d. use of information technology e. organization/expression of content in a visual component (example: concept map) f. ability for students to work in a group or team g. learner performance in a time-constrained assessment situation?

### Potential Issues

- The role of written examinations
- Formative vs summative assessment
- Programme-level assessment how to do this concretely if that is the way forward
- What a portfolio of assessment might mean concretely in our disciplines
- How to view this from 1st year up to MSci and also PGT level
- How to be inclusive EDI issues
- Balance between on-campus and online assessment
- Integrity of assessment
- Who is the assessed student if assessment is not under controlled conditions (I've been at a meeting recently where it was mentioned that in North America they are extremely cautious about our ability to guarantee that the student is who they say when assessed remotely)
- How to make changes? There is discussion in the sector about doing massive changes in one go vs small changes over a few years, with pros and cons for both sides. Is there a University view?
- Should we separate teaching modules, and assessment modules? Some unis have started to implement zero-credit teaching modules, with assessment modules carrying the credits. Holistic assessment in modular structures? Do we need a "synoptic module" that assesses across the other modules?



### The role of written examinations

- This should not be the 'go-to' assessment
  - There are courses where the written exam is appropriate, when the skills being assessed are that of assessment of learning, or the class size (a cohort of 500 students) makes other forms of assessment difficult.
- If an exam is being used, break it up into sections that can be done in smaller parts throughout the semester, with each one building on the skills that have been taught up to the point of the exam

### Formative vs summative assessment

Formative assessment allows the students a chance to practice the skills important for the summative task in a low stakes environment and receive feedback. This helps build assessment and feedback literacy.

- Can be a small task
- Utilize peer assessment
  - Benefit is two-fold: reduces workload on staff, and allows students to be part of the process

• Not all summative assessment needs a formative element. If you are using MCQs in a low stakes exam, as long as you explain the expectations, you would not need a formative assessment

# Programme-level assessment – how to do this concretely if that is the way forward

- This is going to look different for each programme, but it can be done using TESTA or some curriculum blueprinting and mapping and some dedicated time and space by the programme team to implement it.
- This process can take up to an academic year to sort through and implement, but once completed, runs smoothly with light touch maintenance
- Talk to me if you are ready to move forward with it, or want some more information on how it could work for your programme.

# What a portfolio of assessment might mean concretely in our disciplines

- A variety of assessment methods, as well as reducing high stakes assessment means that the disciplines are open to assessing their students in the most meaningful ways
- This also means that inclusivity and equality of opportunity for students to demonstrate their learning has been considered

### Patchwork Assessment

Carefully design the patches to link to the intended learning outcomes and articulate the skills you anticipate students will develop (e.g. synthesis, creative thinking, criticality). Brief students clearly about this.

Universal design principles readily apply:-

- Takes account of the different ways students learn and are able to express their learning in various ways;
- Fosters continuous development and application over time;
- Allows for diversity: enables students to meet relevant learning outcomes in a format of their own choosing, according to their own perceived areas of strength;
- Always owned by the student, who selects, critiques and justifies the work, making it an authentic and (inclusive) approach to assessment.
- Allows for creativity and gradual development final 'stitching' patch encourages students to integrate their understanding of the whole module, or integrated across programme of study.
  - Highly amenable to digital production, which enables sharing, discussion, peer review and developmental feedback processes to be threaded throughout.
  - Flexible and evolving process which is responsive to change.
  - Provides vehicle in which to extend personal, professional and theoretical boundaries process can valuably be used to disturb assumptions about knowledge and how it can be applied to a real-life context/issue.
  - Draws on personal knowledge, therefore harder to farm out to essay mills.
  - Feedback, reflection and development of evaluative judgment/metacognition are integral to the design (see Ghandi, 2016).

### Find the Error/Flaw

 Students receive calculations or problem-solving questions that have already been solved but contain an error or flaw. Ask students to identify (and possibly correct) the error.

- Use this form of assessment if you want students to:
  - Demonstrate their ability to find errors in sets of data, problem solving questions, or arguments



### How to view this from 1st year up to MSci and PGT level

- We need to remember that some of our first-year students have never sat a formal exam and are quite anxious and nervous about this on top of the other anxieties of starting their university degree.
- Scaffold the support and vary the assessment methods throughout the programme to help ease pressure on individual courses.
- Assessment and Feedback literacy needs to be built into the programme, and why a programmatic approach would be beneficial for the students and staff.



### How to be inclusive – EDI issues

- The varied assessment methods and ways for students to demonstrate their skills will help move toward a more inclusive environment for students
- Moving away from timed exams and high stakes assessments
- Formative assessment options that allow students to practice their skills before the summative assessment
- Following the University's accessibility guidelines



# Balance between on-campus and online assessment

- This is going to be based on University policy around people being on campus
- If there are a variety of assessment methods though and move from just exams, then this will help make it possible for people to complete the assessments off campus.
  - There is an inclusion and accessibility issue to consider here if you are going back to on-campus assessments.



### Integrity of assessment

- Create questions that require higher order thinking. Instead of having students respond to questions that can be answered by a simple web search or even by finding the answers in their textbooks, create questions that are on the analysis, synthesis, and evaluation levels (Bloom, 2006). It will be more challenging to ask a friend or "Google" the answer when the questions require students to explain, analyze, infer, create, compose, evaluate, and authentically demonstrate their mastery of course content.
- Use varied question types. Refrain from having an exam with all multiple choice or true and false questions and include open-ended questions. It is more difficult for students to give the same response as their friends verbatim for open-ended questions, and students would be forced to explain their responses using specific details and supporting narratives that are unique to their own understanding of the course materials.
- Meaningful assessments will also help the integrity of the assessment. When students can make connections to real-world tasks, it is easier for them to engage with the assessment task.



### Self-assessment and retrospective learning

- Self-assessment is not only a mean to know how good a student performs in a class, but is an opportunity for the student to learn to judge objectively his/her skills and knowledge. Questions to ask for a self-assessment include:
  - What I've learned?
  - What worked well? What did I enjoy?
  - What didn't work well? What did I find challenging?
  - What could be done differently to aid the learning process?

### Potential Issues

- Who is the assessed student if assessment is not under controlled conditions (I've been at a meeting recently where it was mentioned that in North America they are extremely cautious about our ability to guarantee that the student is who they say when assessed remotely)
- How to make changes? There is discussion in the sector about doing massive changes in one go vs small changes over a few years, with pros and cons for both sides. Is there a University view?
- Should we separate teaching modules, and assessment modules? Some unis have started to implement zero-credit teaching modules, with assessment modules carrying the credits. Holistic assessment in modular structures? Do we need a "synoptic module" that assesses across the other modules?



### **Case Studies**

- Case studies can be multidisciplinary and provide opportunities for students to apply concepts, research and evaluate other sources of information, work in groups, and present their ideas. Cases can be simple and short to long and complex.
- A quality case study has the following characteristics:
  - there is no one clear answer or solution
  - has sufficient information to promote a thorough analysis
  - requires the student to think critically and analytically to recommend potential solutions

### Problem-Based Learning

 In PBL, learners are tasked with exploring solutions to a problem that derives from real-world situations with as authentic as possible real-world limitations and structures. With time to build content knowledge and discipline-specific skills towards solving the problem, learners make judgments, interpret, and synthesize information in meaningful ways. Given the appropriate support structures and a complex enough problem, PBL learning is more representative of authentic learning and can be highly engaging for students.



## Example: (STEM/Biology):

Biology students are tasked with answering the question, "What is the biology of love?" Over the course of the semester, they will need to analyse how various behaviours and biological functions play a role in reproduction of various species. There are 3 subjects (mating habits, reproductive habits, and biochemistry) that students may sign up for in groups. The end goal of each group: create a wiki that can act as a resource for other biology students who are learning about reproduction functions. These groups will remain consistent for the semester; students will interact in group assigned forums and they will present to each other in peer-reviewed assignments (using a rubric provided by the instructor). The forums can be graded based on quick reviews of student participation level and/or through faculty evaluation of the quality of posts. To ensure students stay on task, there is a weekly quiz that automatically grades students on course content. Students are required to contribute to their own group wiki and they must submit a contribution to at least one other group's wiki that makes a connection between their wiki and the others'. For the final, students need to draw upon the class wikis to submit either a mechanistic (proximate) or functional (mechanistic) explanation of the biology of love.



## Example: Engineering

Engineers are given a series of cases over the semester that become increasingly more complex as the course progresses. The first case requires them to submit a technical report that outlines chemical reactions in a manufacturing process. The second case requires them to prepare a presentation for a civic board concerned about the possible dangers of the construction of a nearby plastics factory. The presentation must make clear references to technical analysis of data provided to students. The third case is an interview with a petroleum company wherein students are required to outline a component of a manufacturing system in which they demonstrate their understanding of a subunit's processes and governing protocols for production and control. Each case builds from new content introduced in the course. Later cases depend on the knowledge and skills learned from prior cases. Using the tools in Moodle, students learn, practice and, submit their materials for grading. To add increased authenticity, students could make presentations of their work to industry representatives.



Assessment	What does the student do?	What is this useful for/how can this be used?	Supports Development of Knowledge and Understanding	Supports Development of the Application of Knowledge and Understanding to Analysis
Multiple-choice test	Can be useful for diagnostic, formative assessment, in addition to summative assessment.	Well-designed questions can assess more than factual recall of information.	Y	
Short answer questions	Students answer question with short written responses.	Useful to assess a wide range of knowledge/skills across a module. Often recall-based which, occasionally, may be essential in some subject areas.	Y	
Multimedia or slide presentation	Students create a presentation about a concept/theory/project etc	Demonstrates communication skills and understanding of key points of concept/theory/project etc		Y
Open book exams	Students have the opportunity to use any or specified resources to help them answer set questions under time constraints.	Removes the over-reliance on memory and recall and models the way that professionals manage information.		Y
Oral report/presentation	Students are asked to give an oral presentation on a particular topic for a specified length of time and could also be asked to prepare associated handout(s).	Can usefully be combined with self- and peer-assessment. Demonstrates communication skills and ability to summarise		Y
Question banks	Students are assessed on their ability to produce a certain number of questions on a topic. This helps students to recognise what they do and do not understand about a topic. PeerWise is one piece of software used for this at the University of Glasgow (https://peerwise.cs.auckland.ac.nz/)	Ensures students understand the topic they write the question about. Can be useful for students for revision too.	Y	
Research project	Students undertake a research project individually, or in groups.	Students can demonstrate practical, analytical and/or interpretative skills as well as knowledge and understanding.	Y	Y
Case study/analysis	Students are required to work through a case study to identify the problem(s) and to offer potential solutions	Useful for assessing students' understanding and for encouraging students to see links between theory and practice. Note: case studies could be provided in advance of a time-constrained assessment.		Y
Chart, graph, visual aid	Students produce a visual representation of data.	Tests a number of skills: understanding of data, understanding useful/correct visual representation of data, understanding of audience who the visual representation is for.	Y	
Description of a process	Students describe how something works.	Allows students to show that they understand the process	Y	
Diagram, table	Students produce a visual representation of data.	Tests a number of skills: understanding of data, understanding useful/correct visual representation of data, understanding of audience who the visual representation is for.	Y	
Mathematical problem	Students solve mathematical problems	Demonstrating ability with formulae, mathematical processes etc.	Y	Y
Poster	Students are asked to produce a poster (either 'real size or as a PowerPoint file) on a particular topic.	Can be used individually or in groups to assess a range of activities		Y
Problem sheets	Students complete problem sheets, e.g. on a weekly basis.	This can be a useful way of providing students with regular formative feedback on their work and/or involving elements of self- and peer assessment		Y
Research proposal	Students write a proposal for a research project. This may include a proposal for funding	Ensures students know what they need to do to complete the research Also provides opportunity for support/feedback, particularly for students who are less confident	Y	Y
Review of website/journal article	Students write an account or make an oral presentation reviewing a website/article (or similar).	Can include an evaluative element to demonstrate depth of reading and level of understanding in concise formats	Y	Y
Draft	Students write a draft of a piece of work	This is a great way to support students and check their understanding of both the topic ad the criteria for a piece of assessed work.	Y	
Flowchart	Students create flowcharts of processes relevant to the subject/discipline	Demonstrates understanding of how the processes to achieve a proscribed outcome might be achieved	Y	
Laboratory reports	Students are required to write a report for a laboratory exercise.	Demonstrates understanding of steps/processes undertaken during	Y	Y

Assessment	What does the student do?	What is this useful for/how can this be used?	Supports Development of Knowledge and Understanding	Supports Development of the Application of Knowledge and Understanding to Analysis
'Live' exercise	Students are provided with an initial dossier of papers to read, prioritise and work on, with a variety of tasks and new information given at intervals throughout the period the exercise runs.	This is usually a problem-solving exercise and often enables multidisciplinary teams (either across years, or across subject specialisms) to work together to achieve an outcome.		Y
Outline	Students prepare an outline, or plan, for any forthcoming piece of work.	Demonstrates ability to summarise and to show thinking/structure	Y	
Plan for conducting a project	Students write a project plan before undertaking the work	Ensures students know what they need to do to complete the project. Provides opportunity for support/feedback, particularly for students who are less confident		Y
Simulations	Text or virtual computer-based simulations are provided for students who are then required to answer questions, resolve problems, perform tasks and take actions etc. according to changing circumstances within the simulation.	Useful for assessing a wide range of skills, knowledge and competencies.		
Wiki	Students create a wiki, usually in groups, to explain concepts	Creating a wiki page requires understanding of the topic and of how to communicate that understanding to an audience.	Y	Y
Abstract	Students write an abstract of a research paper/article within a specified word limit e.g. 300–500 words.	Allows students to demonstrate understanding of a topic, ability to summarise, and practice the skill of good abstract writing.	Y	
Articles for different audiences	Students are asked to write on a particular topic(s) to an agreed length in a specific style e.g. a journal, newspaper or leaflet.	Allows students to demonstrate ability to communicate with different audiences and shows how well they understand the topic.		
Concept maps/cognitive map/web/diagram	Students map out their understanding of (or research about) a particular concept. This can be used as a precursor to a larger piece of work (e.g. as formative work for summative work later)	This is a useful to provide feedback to students on their work and to staff on students' understanding of the topic.		
Create something	Students make or design something, e.g. podcast, prototype, video clip, webpage etc.	Tests students' design/creativity skills and understanding of a brief, of any technical aspects of a 'build' etc		
Definition	Students create definitions of words/concepts.	Demonstrates understanding. Can also be used as part of group work where a shared glossary is created, and students edit each other's work	Y	
Executive summary	Students write a summary of a report, either as a draft of the report, or of an actual report	Students demonstrate ability to summarise the most important points, or 'message' for a specified audience	Y	
Group discussion	Students take part in discussions about a specific topic, often with preparation. Discussion may, however, be to work out what students already know about a topic to then lead to further work/research.	Allows students to practice making verbal arguments or explain concepts/theories	Y	Y
Learning logs	These are lists of activities and outcomes which students check off during a period of learning. For example, students could be asked to indicate competencies which they have practised to a specific level during a work placement.	Allows students to show they have completed tasks required of them and may include reflection on those tasks.		
Matching test	Students match items. Often used with diagrams and series of labels, or with matched statements. Matching can be simple or complex.	Students show that they know elements of (for example) structures, or requirements. May also include relevance of matched items	Y	
Materials and methods plan	Students draft a plan for the materials and methods they will use, or would use, in a practical setting	Demonstrates planning for practical work	Y	
Brochure	Students are asked to write on a particular topic(s) to an agreed length for a specific audience	Allows students to demonstrate ability to communicate with different audiences and shows how well they understand the topic.		
Client report for an agency	Students produce a report on a topic/subject/project/etc for an outside agency	Students demonstrate their ability to communicate the 'important' information to a fictitious client.		
Fill in the blank test	Students fill in blanks in statements	Demonstrates knowledge of key words/concepts/definitions	Y	
Instructional manual	Students create instruction manuals for another audience – maybe other students, or an outside audience	Demonstrates communication appropriate to the audience which requires solid understanding of a topic/theory/concept	Ν	

Assessment	What does the student do?	What is this useful for/how can this be used?	Supports Development of Knowledge and Understanding	Supports Development of the Application of Knowledge and Understanding to Analysis
"Introduction" to an essay or report (rather than the full report)	Students can write either just an introduction or are only graded on the introduction as part of the report	Allows students to demonstrate ability to concisely explain the background to a theory/topic/subject/concept	Y	
Mini-practical	This involves a series of mini practical sessions. Can be conducted under timed conditions.	Creates the potential for assessing a wide range of practical, analytical and interpretative skills		
Notes on reading	Students write short notes on a reading covering key elements of that reading, usually for a specific purpose.	Demonstrates ability to summarise, to identify key points and to create useful notes		
Observation	Students are observed whilst undertaking some form of 'performance'. This is commonly used in teaching classroom practice and laboratory work.	Students demonstrate proficiency with practical skills		
Online discussion boards	Students are assessed on the basis of their contributions to an online discussion for example, with their peers; this could be hosted on a virtual learning environment (VLE).	Students demonstrate engagement with the topic and with their peers		
Part-written practical reports	Lab sheets given to students provide some of the write-up in full but leave sections such as error analysis, theoretical explanation etc. for the students to complete.	Supported way to introduce students to new concepts or to remind students of steps/stages in a practical whilst testing their ability with the work.		Y
Reflective diaries	Students record their learning over a period of time, with an additional reflective commentary which could support the development of an action plan.	Reflection can support a student to understand how well they are meeting the learning outcomes and what they need to do to improve		
Review of exhibit	Students review an exhibit for a specific purpose. It could be (for example) the history of the object, or the science or a critique of the exhibit, or how the exhibit is used.	Can be used in many ways, dependent upon the purpose. Tests ability to communicate, to create an argument, to think and write about a subject form a different perspective etc		
Seen exams	Students are provided with the questions to be answered in a time- constrained context in advance. Alternatively, the examination topics may be released in advance, but the specific questions are unseen until the exam.	Removes some of the anxiety of unseen exams and the ability to simply reply on recall, enabling preparation.		
Selective or sampling report	Students are asked to either write specific sections of a report (e.g. methods section) or write practical reports in full but know in advance which elements of the report will be assessed	Allows students to develop skills in one area of report writing at a time.		
Statement of assumptions	Students write the assumptions they need to make, or the assumptions they are making, before continuing with a piece of work.	Supports students to consider how they think about a concept/theory/project etc and to help them to understand how assumptions can impact on a successful outcome.		
Annotated bibliographies	Students produce a list of texts, primary sources and internet sites on specified or agreed topics to a particular referencing convention. They annotate these with a commentary, which could include an evaluation of what they have read.	Allows students to demonstrate breadth/depth of reading, understanding of relevant texts, and ability to research.		
Assessment stations (aka OSCEs)	Most often used in Med/Vet/Dentistry, students move around a series of testing stations being assessed on a number of skills, each for a fixed period of time.	Allows students to demonstrate a wide range of practical skills and knowledge.		
Blog	Students are required to keep an individual blog.	Allows students to record progress, write for other audiences, make links to other relevant websites etc.		
Budget with rationale	Students are asked to create a budget and justify it (note: this could also be a costed business case). Allows students to consider the cost of a project/lab/case work/trip etc etc	Allows students to show their understanding of the costings required for any project and justify why those finances are required.		
Debate	Students argue different sides in a debate on a specified topic.	Demonstrates research into a topic, ability to argue a case/point, ability to listen to others and counter an argument		
Dialogue	Creating or engaging in dialogue	Allows students to show their understanding and, if the dialogue is aimed a specific audience, their ability to translate their knowledge for that audience		

Assessment	What does the student do?	What is this useful for/how can this be used?	Supports Development of Knowledge and Understanding	Supports Development of the Application of Knowledge and Understanding to Analysis
Funding bid	Students create relevant funding bids, sometimes using actual funding bid forms, sometimes a simplified version	Allows students to practice funding applications	N	
Letter to the editor	Students write a letter to the editor of a newspaper/journal/magazine in relation to a current story or paper	Demonstrates construction of an argument supporting or challenging a current 'story'.		
"Micro-theme" (a tight, coherent essay typed on a 5x 8 note card)	Students write a very short piece explaining a concept/theory etc	Students demonstrate ability to summarise, communicate essential points and show that they understand these.		
News or feature story	Students write a news/feature about a concept/theory/project etc	Demonstrates ability to write in style and for a specific audience		
Personal letter	Often instigated as a letter to next year's students, or to their peers.	Supports students to reflect on what they do, or do not, understand.		
Portfolios / e-Portfolios	Students provide evidence for their achievement of learning outcomes; these commonly incorporate a reflective commentary.	Allows students and staff to keep track of completed work and to reflect on, or provide support for, achievements throughout acourse.		
Role play	This is traditionally a 'performance' done in pairs/as a group. However, students could write or give a presentation taking on a particular role, e.g. a journal reviewer/editor, consultant, art critic etc.	Encourages students to see things from a different perspective and to argue/discuss from that role.		
Advertisement	Students write an advert for a role that they might fill, or that might need filled within a project team	Allows students to consider the skills they need to develop, or that are needed for a particular project/type of work		
Media profile	Students are asked to use pictures or headlines from newspapers and magazines to illustrate the public perception/profile of a particular aspect of the subject. They can also write responses.	Students analyse the public perception of a topic/theory/project etc. Useful for considering accuracy of reporting (fake news) etc.		
Memo	Students write a short piece explaining a concept/theory etc	Students demonstrate ability to summarise, communicate essential points and show that they understand these.		
Narrative	Students write a narrative piece about a concept/theory/project etc	Demonstrates ability to create a narrative and to write for a specific audience		
Patchwork texts	Students write a number of small pieces of work ('patches'), which they then have to later 'stitch' together in a reflective commentary. The patches and the tasks upon which they are based are discrete and complete entities in their own right.	Allows students to show that they understand each element and so enhances understanding of the content as a whole. Spreads assessment across a course rather than relying on high stakes assessment		
Performance	Students are required to give some form of performance, e.g. concert, play, dance, poem, choreography etc.	Demonstrates ability in that aspect of performance		
Regulations, laws, rules	Students identify and (perhaps) comment on the relevant regulations (etc). Or they write their own.	Enables students to understand the context/framework relevant to them.		