

# Moving DUT from face-to-face to e-Assessment: Recommendations during Covid 19

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## PREAMBLE

It is important to note that academic regulations need to be altered, to allow academics to adapt assessments planned for 2020, to e-Assessments. This document suggests such adaptations, but does not deal with the regulations. Regarding regulations, a key issue seems, permission granted to lecturers, to continue online with summative assessments.

## ASSUMPTIONS

Recommendations are premised on the understanding that students (and staff) will not have equitable access to devices, connectivity or data. It also takes into account that a new official Learning Management System Moodle, was introduced in January 2020 and became unstable with increasing number of users. A stable version of Moodle only became available at the beginning of lock-down. Course development on Moodle has commenced on a large scale during lock-down and this needs to be taken into account as far as e-Learning and e-Assessment readiness is concerned. On the up-side, staff training did take place from June to December on a pilot Moodle server. DUT staff have had numerous opportunities to participate in e-Learning professional development and upskilling over twenty years.

In light of the aforementioned, these e-Assessment recommendations encourage the academic sector not to leave any students behind in the design of assessment tasks. This includes students with disabilities, that need to be considered in the design of assessments.

Therefore this document proposes that summative assessments are delayed for a reasonable period and that formative assessment is the initial focus for a reasonable period.

While formative assessment is being prioritised, continuous monitoring by lectures will be required to ensure students participation in the assessment tasks.

## ZERO-RATING

At present, feedback from lecturers and students indicate that zero-rating (by MTN and Telkom so far) of the DUT Moodle service, is not yet working effectively – it seems that a student still needs some data to access a zero-rated site (i.e. cannot get onto the site with zero data on a device); it also seems that the redirection from the DUT website through the MS Azure cloud, to the on-site DUT Moodle service, interferes with zero-rating.

## OVERALL RECOMMENDATIONS

Several credible global and national sources have stated that a crisis period is not a good time to introduce too many new ways of working with students – it is a time to provide familiarity -- to simplify, structure, and to compromise.

At the outset we wish to direct you to one of the most relevant resources that applies mostly to DUT's context – the DUT academic community is requested to take note of this document as the main recommendation (hereby attached):

T&L National Forum for the Enhancement of Teaching and Learning in Higher Education (Ireland). 2020. *Selecting Online Alternatives to Common Assessment Methods: Supporting those who Teach and Learn in the Context of Covid 19 Coronavirus*

In addition, please note the following:

## PRIORITY

Low-tech assessments should be prioritised – i.e. text-based and a-synchronous. Live-streaming is expensive and therefore not recommended in the short term for teaching or assessment.

## FORMATIVE ASSESSMENTS

If at all possible under the time challenges, lecturers are encouraged to conduct at least one formative assessment first:

1. to ensure that students are online;
2. to ensure they have a rehearsal opportunity -- to become familiar with assessment methods and its associated tools;
3. formative assessments are opportunities for feedback.

## SUMMATIVE ASSESSMENTS

For a shift from previously planned face to face summative assessment methods to e-Assessment, please visit the recommendations of the T&L National Forum for the Enhancement of Teaching and Learning in Higher Education (Ireland), previously referenced. Then note additional observations -- the biggest challenge with summative assessments online is authentication – how does one know it is the actual student on the other side? Here various controls exist, e.g. online proctoring (invigilation) systems that monitor exams by camera -- however, these are high-tech. On the low-tech side, Moodle assessment tools for example, have various settings to this end, that are not fool-proof, but will increase chances of reducing cheating:

[https://docs.moodle.org/36/en/Effective\\_quiz\\_practices#Quiz\\_security\\_and\\_cheating](https://docs.moodle.org/36/en/Effective_quiz_practices#Quiz_security_and_cheating)

## AUTHENTIC ASSESSMENTS

In addition to using *technical* means to authenticate a student's identity (to prevent cheating), authentic assessments are a *pedagogical* approach to encourage original work. When students are assessed from a distance, it is even more important not to test knowledge recall only. One can set questions in a way that tests higher order thinking; and tasks can be set that are related to the real world, requiring authentic problem-solving and critical thinking. Open book testing with a time limit, is also advised and has been used already by universities around the world during Corona lock-down.

27 Qualities of authentic formative assessments:

<https://wabisabilearning.com/blogs/assessment/27-qualities-authentic-formative-assessments>

## STRUCTURING OF ASSESSMENTS

While formative assessments is the preferred assessment approach, these assessments should be structured to assess increasing levels of knowledge acquisition and need not be restricted to low levels of assessing competencies. In this regard formative assessment may be structured using at least the first four levels of Bloom's Taxonomy (Remembering; Understanding; Applying; Analysing). This strategy will depend on the levels of a particular academic programme (e.g. 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> year) and on students' readiness and access to facilities, to engage in the online mode. For example, the design of multiple choice assessment can test competencies at the level of remembering information, or, could involve higher order cognitive assessment that assess application of knowledge.

## FEEDBACK and FEEDFORWARD

Engaging in e-Assessment might be new for some students. Therefore feedback on the assessment tasks will be important, as students acclimatise to this environment – see Moodle Quizzes example further down.

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Feedforward has become a best practice trend -- it is distinguishable from feedback, in that it points to what is to come – links what has happened with next topics -- by providing “teasers” and putting activities into context. While feedforwards can be casted in voice or video, do remember to keep it chunked to keep data costs down during streaming.

## ALIGNMENT WITH THE DUT ASSESSMENT POLICY

The assessment policy is a good reference point to promote principles of assessment *for* learning and *of* learning.

Therefore, even within a crisis, there is a need to

- align ourselves to a philosophy of student centeredness and reassess what this means within these circumstances;
- continue to explore and implement multiple assessment methods that promote students' problem-solving and critical thinking skills.

As an institution primarily offering professional programmes, there is an obligation that our assessment is indicative of assessing both the knowledge and attributes or dispositions that are considered legitimate within the profession while still promoting a critical stance.

In keeping with the policy, but within the current context:

- All assessments will be aligned to the learning outcomes as indicated in the study guide and module descriptors;
- All assessments should be formative in nature. This implies that assessments will be developmental in nature and provide opportunities for feedback and feedforward. These assessments will serve the main purpose of using assessments *for* learning by students, but may also serve as an indication to lecturers of students' levels *of* learning in the modules.
- The assessments should be structured to enable 'students' reflection on, and self-monitoring of the quality of their own work', thereby promoting self-directed learning;
- complete transparency should be provide to students which can be achieved through making explicit learning outcomes to be assessed, the assessment criteria, the feedback given, and information on how the feedback is to be used by assessors and students alike. In the current situation it is important also to engage students with the online assessment methods and make clear the expectations of students when engaging in these assessments;
- A new assessment plan should be developed including an assessment matrix for the programme and assessment strategies by the departmental or programme teams. The feasibility of strategies considered should be discussed with all departmental staff and CELT for input on appropriateness. Before finalisation these should be discussed with students. The needed resources should be made clear to students so they can provide feedback on accessibility to these resources;
- Issues of plagiarism must be transparent to students, not in a "tone" of punishment but rather in respect to what would be considered plagiarism, how this can be avoided etc.;
- The complexity of the assessment activities should be aligned to the level of the module within the programme. Exit level outcomes being assessed must promote interconnectedness of knowledge across different modules and be aligned to the purpose of the qualification, goals, themes and objectives of the programme and learning outcomes of the module;
- Students should be assessed using a range of strategies. Students should be allowed opportunities to discuss challenges with assessment methods and strategies pre and post assessments;
- Opportunity must be provided for reassessment after transparent and constructive feedback;
- Continuous monitoring of assessment tasks and completion by students should be undertaken by lecturers of the programme to ensure student participation and engagement in the module. Due dates for submission and/ or completion of assessments should be communicated to all students in advance.

## ASSESSMENT TECHNOLOGIES

For the current lock-down scenario, it is advised to conduct e-Assessments with familiar technologies and limit the number of technologies used – in our case we recommend taking advantage of the capabilities of the official learning management system, Moodle -- for the purpose of familiarity and streamlining across modules and programmes, and because Moodle is zero-rated by at least some service providers -- but if this is not possible, other technologies could be used, e.g. submission of work on WhatsApp. *However it must be noted that many universities have specified their official LMS, and limited and in cases even excluded, some social media platforms for assessment, to protect data integrity.*

Refer to the table for details of DUT's Moodle version's assessment capabilities.

### Moodle

TOOL	DETAILS
Assignment	<p>The assignment activity provides a space into which students can submit work for teachers to grade and give feedback on. It can also be used to remind students of 'real-world' assignments they need to complete offline, such as art work, and thus not require any digital content.</p> <p>It is possible to have students submit work as a group and you can also choose as a teacher to grade their work 'blind' in other words not to see the identities of those who have submitted assignments.</p> <p>Assignments can have deadlines and cut off dates - which you can also extend if necessary.</p> <p>Teachers may give feedback in various ways.</p>
Rubric	Rubrics are an advanced grading method used for criteria-based assessment. The rubric consists of a set of criteria plotted against levels of achievement.
Marking guide	A marking guide is an advanced grading method where a teacher enters a comment per criterion and a mark up to a maximum.
Quiz	<p>For effective quiz practices and creative use of quizzes, see <a href="https://docs.moodle.org/36/en/Effective_quiz_practices">https://docs.moodle.org/36/en/Effective_quiz_practices</a></p> <p>The Quiz activity module allows the teacher to design and build quizzes consisting of a large variety of <a href="#">Question types</a>, including multiple choice, true-false, short answer and drag and drop images and text. These questions are kept in the <a href="#">Question bank</a> and can be re-used in different quizzes.</p>
Choice	Choices can be useful as quick poll to stimulate thinking about a topic; to allow the class to vote on a direction for the course, or to gauge progress.
Feedback	The Feedback activity allows you to create and conduct surveys to collect feedback.
Forum	The forum activity allows students and teachers to exchange ideas by posting comments as part of a 'thread'. Files such as images and media maybe included in forum posts. The teacher can choose to rate forum posts and it is also possible to give students permission to rate each others' posts.
Workshop	Workshop is a powerful peer (and self) assessment activity.

## Best Practice Examples:

A **quiz** can test higher order thinking if a question requires analytical thinking rather than recall. Considered feedback can be built into a question and released immediately after completion of the question (formative) or set to be shown later (after marks are released -- summative), which will lead to the quiz being a learning experience.

A case study can be uploaded to a **Forum** -- students can be asked to discuss scenarios. A clearly constructed rubric available in advance, can guide students to achieve the desired outcomes. In addition, the lecturer can facilitate discussions by providing introductions, intermittent summaries and leading questions.

**Workshop:** Students submit their own work and then receive a number of submissions from other students which they must assess according to the teacher's specifications (i.e. peer review). Students may also assess their own work if the teacher requests this.

## Microsoft 365: Teams

Quizzes	<p>Microsoft Forms has a powerful in-built quizzes feature which includes self-grading and automatic feedback. This tool allows the teacher to quickly assess student progress and understanding by creating a quiz with questions that are required to be completed, and allows for the display of question hints.</p> <p>A quiz created in Microsoft Forms displays points earned by students points and allows the teacher to add feedback after the submission of the quiz enabling a more interactive learning experience.</p>
Assignments	<p>Microsoft Teams makes it possible for teachers to create authentic assignments, manage assignment timelines, provide instructions and attach useful read-only resources. It also includes the option to add a grading rubric.</p> <p>A short course on creating authentic assignments using Microsoft Forms is available at: <a href="https://education.microsoft.com/en-us/course/ac59d6bc/overview">https://education.microsoft.com/en-us/course/ac59d6bc/overview</a></p>
Feedback	<p>Written, audio or video feedback is possible in the Microsoft Teams Class Notebook and written feedback can be added to Microsoft Forms based Quizzes.</p>
Meetings	<p>When you are working remotely, Microsoft Teams makes it possible for teachers to create and host meetings as part of the virtual classroom. A set of guidelines and information for conducting meetings is available for: <a href="#">academics</a> and <a href="#">students</a></p>

## Note on Moodle VS Teams

e-Learning design principles apply, whether one uses Moodle or Teams.

**The advantage of Moodle:** It is a very structured/scaffolded environment that might suit the style of some lecturers and their students. Moodle was designed by teachers for teachers and in this open source community, there is a spirit of sharing and an emphasis on good practice. Constructivist teaching and learning principles are quite visible throughout the design of Moodle. The DUT Moodle site is zero-rated by some service providers.

**The advantage of Teams:** Teams is a 21<sup>st</sup> century product and might even be more in line with other tools students use in real life. It is multi-layered and the lecturer and student who are comfortable with contemporary App-based ways of working and living, will thrive in this environment. Teams forms part of the Microsoft Office 365 environment that is supported by DUT.

Other technologies

Google Tools; WhatsApp; etc.

## EXAMPLES OF AUTHENTIC ASSESSMENTS

Authentic assessments mirror real world problems or contexts, are cognitively complex and test higher-order thinking. Questions test critical thinking through sequential reasoning, particularly as the students advance through the levels.

**Discussions** are an easy way to get students to engage in collaborative learning and assessment. Pose a higher order thinking (HOT) question which will encourage critical thinking and encourage students to engage in a discussion. This can be graded on a number of levels – e.g. content, critical thinking, application of ideas, debate... A rubric can be developed to grade the discussion. One can also ask students to do particular activities within the discussion for example they have to answer one point, give a solution to another posting, give a link to further information relevant to one posting, ask a question in another posting and so on. This helps engage students in thinking about the discussion, actively participating and encourages further investigation (self-directed learning).

**Video (or article) reviews:** Giving a link to a video and asking students to submit a review based on a rubric you have developed – this can be on a number of levels: content, application of knowledge, critique of the activities (for example demonstrating a technique, students can critique the technique) and so on.

**Reflections** are an important skill required of professionals in order to continually improve on their practice. Reflections is a useful assessment strategy which is easy to use in the online environment. Models of reflection can be used to guide students and a marking rubric can be given as a guide to how this will be assessed. For more senior students it is important to bring in the concept of critical reflection and a socratic method of questioning can be introduced to deepen their reflection. Students need to be encouraged to deepen their understanding of the practice/content by referring to literature and the referencing of this literature should be included as an aspect in the marking rubric. Reflection topics can be give based on the students own practice, for example those who are working or have had WIL, or on an article or video you have asked them to read or watch. For more junior students you might want to give the reflection more structure by asking them questions which they can use to structure their reflection and as they progress through the years you give less structure.

<https://www.bing.com/videos/search?q=Critical+reflection&docid=608042462491903048&mid=C4C889D77E434AC20290C4C889D77E434AC20290&view=detail&FORM=VIRE>

<https://www.criticalthinking.org>

<https://www.bing.com/videos/search?q=Critical+reflective+writing&docid=608044652931974297&mid=679407FF73C71586E166679407FF73C71586E166&view=detail&FORM=VIRE>

<https://www.bing.com/videos/search?q=Critical+reflective+writing&docid=608044652931974297&mid=679407FF73C71586E166679407FF73C71586E166&view=detail&FORM=VIRE>



**Digital storytelling:** Students can be assigned topics relevant to the module discipline and asked to curate a story which they record on their phone either through video, voice or text and then upload into the online classroom. Students could be grouped into small teams and collaboratively work on a story or as individuals. Different topics could be given to each student or small group of students.

**Small group collaborative work** is a skill that all graduates need as this is a reflection on the real world of work. Assessment scoring needs to be thought through so that the individual's within the group can be assessed for their individual contribution as well as the overall submission.

**Peer review:** Students can be used to assess each other but one needs to cultivate a climate of safety and authenticity in the classroom. A culture of integrity is important in all online assessment and in the case of peer review important, in order for students to be objective in their peer evaluation.

**Double or triple jump assessment:** Start with an undefined statement which encourages students to ask questions to gather data from a case study which only the lecturer has. The lecturer answers just what is asked, students make notes and after a defined period of time to ask questions students write down an hypothesis, what further information they need, what they need to clarify in order to fill in the blanks and they are given time to do that – search the net, consult text books etc, and they then come back to the written aspect and revise their hypothesis, reason why and include the information they sought to improve their understanding of the case study. Each phase is given a period of time for example data gathering through questions 20 minutes, further information gathering on the net, text books etc 60 minutes and then final written aspect 30 minutes. This needs to be done synchronously and requires 2 lecturers to do the final evaluation. Agreement is reached on the students thought process – their ability to reason adequately even if the answer is incorrect, if they can justify why they hypothesised XYZ then marks can be awarded. Works well in health sciences where you might test clinical reasoning.

<http://www.tara.tcd.ie/handle/2262/60450>

**Learning contracts** are a useful way of engaging students in their own learning needs and taking responsibility for their learning. Students assess their competence against the learning objectives and develop a learning contract based on their own needs. They choose 3 or 4 learning objectives which they identify as their particular needs and develop a learning contract related to those needs. They then develop a portfolio of evidence related to these learning needs which is assessed against their own criteria.

<http://umsl.edu/~wilmarthp/most-03-2012/qualities-of-a-learning-contract.pdf>

<https://uwaterloo.ca/centre-for-teaching-excellence/teaching-resources/teaching-tips/tips-students/self-directed-learning/self-directed-learning-learning-contracts>

<https://sites.educ.ualberta.ca/staff/olenka.bilash/Best%20of%20Bilash/learning%20contracts.html>

Portfolios

Depending on the level of the modules and students preparedness, students could be asked with developing a portfolio of their learning in the modules. These can include the various assessment tasks and could include students' input using written, audio or video recordings.

<https://www2.uwstout.edu/content/profdev/rubrics/eportfoliorubric.html>

**Digital Reflective Journals** are a useful to enable students to monitor their own learning and can be used to enable communication with the lecturer of the module.

<https://uimagine.edu.au/csulx/strategies/reflective-journals.html>

## CONTACT CELT

Academics are encouraged to learn as much as possible from e-Assessment opportunities offered by CELT. Our training programmes offer entry points from different e-Learning systems into e-Assessments, but these programmes are aligned in terms of best practices:

- **Moodle for Academics** contact Marí Peté or Bwalya Lungu
- **Microsoft Teams for Academics** contact Gita Mistri
- **eLearning Training for students** contact Simon Ndlovu
- **Staff Development:** Nalini Chitanand; Siphon Zulu; Shubnam Rambharos; Shoba Rathilal

## UNIVERSITIES CONSULTED

Most universities were invited to comment. Substantial responses were received from US; UP and UJ and their feedback was considered for this report. A benchmarking database will be compiled separately.

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