

Principles for High-Quality Online Learning

1. Introduction

- 1.1 This document sets out NTU's principles for online learning. The thirteen principles align with [NTU's Learning and Teaching Planning Principles and Guidance](#) and the external [Quality Matters Higher Education Rubric for Course Design](#). They reflect:
 - a. Gaps in academic understanding of online learning highlighted through 1:1 workshops and Learning Room quality audits.
 - b. NTU's strategic vision for continued growth in flexible learning opportunities.
- 1.2 The online learning principles are designed to promote inclusive learning and support the wellbeing of both staff and students. Online learning should be structured, clearly labelled, delivered in a method that supports access from a variety of devices (including mobile), signpost available support, and promote meaningful interaction and community building.

2. Principles for High-Quality Online Learning

Principle 1: Online Learning is the most appropriate method of delivery when students require flexible access, interactivity with instant feedback at scale, delivered in bite-size chunks, and or/with choice over sequencing

- 2.1 Advanced HE defines flexible learning as "...empowering students by offering them choices in how, what, when, and where they learn: the pace, place, and mode of delivery."¹ Flexible learning is essential to allow students to combine work, study, and leisure around their specific needs. Advanced HE states that introducing flexibility into course delivery positively impacts recruitment, retention and progression, access and participation, and creates opportunities for learners of all ages, backgrounds, ethnicities, and nationalities.
- 2.2 For the 2021/22 academic year, the Vice-Chancellor's message to students is teaching will be in person, wherever this is the most appropriate method, and

¹ AdvancedHE Framework for Flexible Learning in Higher Education, 2016

within the constraints of any Government guidance. A value judgement is required by course and module teams on what delivery method is most suitable for each content item, activity, and assessment.

- 2.3 Online learning is the most appropriate mode of delivery when one or more of the following is required²:
- a. Anywhere, anytime access to learning on whatever internet-enabled device you have with you
 - b. Interactive lessons that offer instant feedback
 - c. Learning chunked into bite-size pieces
 - d. Lessons that can be taken in or out of sequence.

Principle 2: The student journey should be planned as learning engagement time rather than contact hours

- 2.4 Courses have traditionally defined direct contact teaching and learning methods as 'contact hours' and all other forms of learning as 'non-contact hours'. In flexible, online and highly blended learning, the division is not as clear. This way of learning provides a broader set of tools, removing barriers and shifting the definition to focus on the student journey.
- 2.5 In this context, course teams should think in terms of learning engagement time to describe the range of learning and teaching approaches that students experience on a flexible, online or highly blended learning module.
- 2.6 Learning engagement time is made up of two broad learning methods:
- a. Directed learning; and
 - b. Guided independent learning.
- 2.7 Full details with examples can be found in the [Redefining Contact Time Guide available on the Flexible Learning Support page](#). This change does not need to be updated in the Module specification but must be shared with students in the Module Information section of the NOW Learning Room.

Principle 3: Expectations about the timing and access of online content should be clearly stated

- 2.8 Online and highly blended learning will be a new experience for many students; they need to be instructed on how and when to access their learning content. Students who study around other commitments, such as work and childcare, require knowing when new content will be available, how long they will need to

² Blended, Using disruptive innovation to improve schools, Michael B. Hor & Heather Staker, 2015

commit to a particular activity, and any related deadlines to help them plan their time.

- 2.9 Clear expectations should be stated within a Learning Room, explaining when content will be available, timeframes for completion and contribution expectancies. It's essential to establish a routine of content release to help students form good habits for checking their Learning Room for updates. Habit-forming is a vital tool in guiding students towards behaviours that foster high levels of engagement with their learning³.

Principle 4: Core Library resource list items should be digital and hyperlinked when used in context

- 2.10 Core resources must be provided in digital format whenever possible. For some lists, this will require extensive reworking of list content. It is strongly advised that Resource Lists are reviewed with your [School Library contact](#) annually. Library contacts can assist course teams in finding electronic alternatives, either from LLR's extensive digital collections or, if necessary, by purchasing appropriately sourced and licenced content.
- 2.11 When referring to digital resources in Learning Room content, it is good practice to provide a hyperlink to that resource. Linking content encourages students to engage with the core materials in the context of their learning.

Principle 5: All "on-demand" (asynchronous) activity and resources should be accompanied by explicit instruction

- 2.12 Students should be supported with 'on-demand' online activities through a structured developmental process. This support or 'scaffolding' is an instructional strategy that moves students toward greater independence and understanding as they progress.
- 2.13 In providing this support, colleagues should aim to understand students' current abilities and the instructional strategies and practice opportunities that will help learners develop the necessary competence and confidence.
- 2.14 When working with less experienced online learners, using an established framework like Gilly Salmon's 5-Stage Model⁴ can make it easier to provide developmental support systematically.

Principle 6: Content should be written in the author's voice, with a strong narrative to engage learners

³ <https://resilienteducator.com/instructional-design/education-as-habit-formation/>

⁴ <https://www.gillysalmon.com/five-stage-model.html>

- 2.15 Writing for online readers should reflect how people engage with online content; this differs from how people engage with print media. The key writing conventions are as follows:
- a. Use plain, informal English: 'write as you speak'.
 - Use natural language to set a personal and engaging tone, keeping to first and second person where possible, e.g. "Why should you revise early?" rather than "What are the benefits of early revision?"
 - Explain any jargon or specialist terms on first use
 - Avoid culture-specific references. Learners' cultural backgrounds may differ; avoid language and examples which may exclude some students
 - b. Make text 'scannable'⁵:
 - Provide meaningful headings and subheadings
 - Use short paragraphs containing no more than 3 sentences
 - Use bulleted lists where possible
 - Highlight keywords (bold or italics, but not underlined since this suggests a hyperlink)
- 2.16 There should also be a clear narrative to set learning activities in a broader context and lead learners through the online material. It can be helpful, for example, to:
- a. Introduce and contextualise content and activities
 - b. Make explicit links to learning outcomes, assessment tasks or other parts of the curriculum
 - c. Incorporate review sections to:
 - Summarise and draw out key themes
 - Pose new questions or suggest further reading
 - Promote reflection and application

Principle 7: Community building should be integrated into the module design, and opportunities for active and collaborative online learning should be included

- 2.17 Addressing the missing 'human element', particularly the lack of personal connection, is critical for online, highly blended and flexible learning.
- 2.18 The 2020 NSS findings highlighted the importance of developing a sense of community in course delivery. Research by WONKHE⁶ conducted in October 2020 revealed that loneliness and an absence of a sense of community are strongly

⁵ <https://www.nngroup.com/articles/how-users-read-on-the-web/>

⁶ <https://wonkhe.com/blogs/anti-social-learning-the-costs-of-covid-restrictions-on-students/>

related to an increase in the number of students considering withdrawing from their current courses.

- 2.19 Those happy with their online learning experience praised the individual support they received from academic staff and the interaction with peers. These findings are corroborated by the suggestions made by students on how to improve their online experience, being focused mainly on "simple ideas centred around human connection". The Community of enquiry framework⁷ supports the idea that social presence plays an equal role in educational development as teaching and cognitive presence and should be used as a model for community building.
- 2.20 Therefore, it is important to design in opportunities for learners to form meaningful connections with each other, right from the start. Advice and guidance can be found in NTU's Creating a welcoming digital community guide⁸

Principle 8: Automated learning checks should be utilised for regular formative assessment and instant feedback

- 2.21 Regularly integrating short MCQ-based formative assessment, reinforced by weekly summary formative assessment, enhances student engagement and recall while preparing students for summative evaluation. Research has revealed several benefits to this type of formative assessment:
- Formative assessment after content consumption aids a deeper understanding of content.
 - Breaking up content consumption with MCQs helps students maintain concentration and enhances engagement
 - Continuous weekly low stakes e-assessment enhances student outcomes and has been associated by students with increased engagement
 - Automated knowledge checks allow academics to monitor student progress and identify problem areas without the need for extensive marking
 - Content-embedded assessment can increase student concentration and engagement with video content
- 2.22 Formative assessment using automated learning checks using H5P or the VLEs other assessment tools should be included to support all content delivered online.

Principle 9: Online content should be digitally inclusive and achieve an accessibility score of 90% or above through Blackboard Ally

- 2.23 [The UK's Public Sector Bodies \(Websites and Mobile Applications\) Accessibility Regulations 2018](#) requires that resources and systems used within the public

⁷ <https://journal.alt.ac.uk/index.php/rlt/article/view/2240>

⁸ https://www.ntu.ac.uk/_data/assets/pdf_file/0033/1285377/creating-a-welcoming-digital-community.pdf

sector, including education, be accessible to all users by design. The legislation requires that any content added to NOW or any software used with students meets accessibility standards.

- 2.24 At NTU, 15% of students disclose that they have a registered disability, learning impairment or suffer from a mental health condition. NTU's Student Services team estimates that this figure is likely to be more than twice that amount when accounting for students who choose not to disclose. In an average NTU module containing 55 students, up to 17 may require reasonable adjustments to resources.
- 2.25 Under accessibility legislation, reasonable adjustments must be made to teaching to account for students' additional learning needs. Specific advice can be found in the [NOW Accessibility Statement](#).
- 2.26 [Blackboard Ally](#) was introduced at NTU in July 2020 and provides academic staff with a tool that increases awareness of the compliance levels of their materials hosted on NOW and offers detailed insight and guidance on how to improve the accessibility of their content. Step-by-step instructions are available to fix most accessibility issues, whilst reports are available at the system and Learning Room level to identify common problems and resources that require attention.
- 2.27 An 'acceptable' Blackboard Ally score is 90%. This target should be achieved by the end of the modules third delivery week where possible.

Principle 10: Audio and video content should be created in chunks of no longer than 10 minutes and hosted in Panopto

- 2.28 Lectures and expository content should be designed as a sequence of ideas in small bite-sized chunks to maximise student engagement. Research from MIT⁹ suggests that student engagement decreases as videos lengthen and found that the optimal video length is 6 minutes or less, with students watching most of the way through these short videos. The research also found that student engagement dropped significantly with videos over 10 minutes in length. Student engagement can be increased for longer videos with very high-quality narrative, presentation style, quality and pace of visual aids, and the inclusion of talking-head video. Films are regularly over two hours but are entirely scripted, edited together with multiple takes, and have an average shot change every 2.5 seconds. Shorter, single-take videos are a more efficient and effective way to produce engaging content. [A brief guide is available to support the creation of higher quality video](#).
- 2.29 At a course and school level, sustainability can be achieved by creating videos that can be reused over time and across multiple modules. Reuse content may include subject-specific technology tutorials and introduction topic information. Avoiding reference to module-specific or timebound information will increase usability and save time in future academic years.

⁹ https://pg.ucsd.edu/publications/edX-MOOC-video-production-and-engagement_LAS-2014.pdf

Principle 11: A range of supported digital tools should be agreed at the course level to provide a consistent student experience across modules

- 2.30 Tools supported and approved by the Digital Technologies department should be used when creating activities for learning and assessment. All supported solutions have been through rigorous checks for compliance with current legislation, for long-term sustainability, and tested to ensure they do not undermine the integrity of course assessments.
- 2.31 Students' experience must be consistent across modules on their course, and they should not be asked to use various tools with similar functionality. Students should not be expected to sign up to use a tool as part of learning essential to their course of study.
- 2.32 If a software requirement cannot be met using the digital tools available, the [Flex Team](#) should be contacted in the first instance. NTU will not support the procurement of tools unless a business case can demonstrate that existing tools do not meet 80% or more of the required functionality. Once approved, all requested software is checked against legislative and sustainability requirements before purchase; alternative software must be found if any checks fail.

Principle 12: Online “live” (synchronous) sessions should include frequent activity changes and a break at least every 90 minutes

- 2.33 Shorter 'live' sessions are more likely to be inclusive, for example, meeting students' needs in different time zones or with additional commitments (part-time and apprenticeship students in particular). For any students that may be unwell, sharing equipment or unable to reach a computer at a given time – catching up on one hour is far more achievable than two or more hours. Short sessions also minimise the burden on staff, as managing long online sessions can involve complexities not usually present in a physical classroom. If a session does not go to plan for any reason, replacing or rearranging one hour of teaching will be far easier than three hours.
- 2.34 Students should be reminded to look away from the screen regularly. The 20-20-20 rule suggests that every 20 minutes spent looking at a screen, a person should look at something 20 feet away for 20 seconds¹⁰.
- 2.35 Around 10 minutes is considered a maximum attention span on a single activity by many studies. Students should be provided with a variety of activities and opportunities for interaction in each session to encourage engagement and help them see the benefit of attendance rather than watching a recording later¹¹. Tools are available within the MS Teams environment to help you manage variation, such

¹⁰ <https://www.teachthought.com/technology/the-20-20-20-rule-why-students-need-to-take-screen-breaks/>

¹¹ Race, Phil. The Lecturer's Toolkit : A Practical Guide to Assessment, Learning and Teaching, <http://ebookcentral.proquest.com/lib/ntuuk/detail.action?docID=5905035>

as Breakout rooms, Whiteboard and polls using Forms. External audience participation tools such as Vevox are also available.

Principle 13: Group sizes and student teacher ratios for online “live” sessions should facilitate an engaging and interactive experience

- 2.36 Group sizes for 'live' sessions should be selected that facilitate active and collaborative learning. Online "live" sessions should be used for discussion and collaboration activities, rather than lecture-style exposition, giving all students equal opportunity to participate. Live, online lectures should be avoided and replaced with pre-recorded, on-demand, "chunked" video or audio content. See Principle 10 for further guidance.
- 2.37 Large online group sizes can be appealing as they offer the opportunity to reduce the need to deliver a session multiple times. However, with large group sizes and low student teacher ratios, the opportunity for participation is reduced.
- 2.38 Larger group sizes can remain effective for a one-off live online event, such as guest speakers or regular Q&A events like those held monthly by the Vice-Chancellor. Online 1:1 and small group tutorials should be carried out in Teams as scheduled calendar events or through Microsoft Bookings to make sure the live auto-captioning is available to students that need it.

Appendix 1. Summary of Online Learning Principles

Principle No.	Headline
1	Online Learning is the most appropriate method of delivery when students require flexible access, interactivity with instant feedback at scale, delivered in bite-size chunks, and/or with choice over sequencing
2	The student journey should be planned as learning engagement time rather than contact hours
3	Expectations about the timing and access of online content should be clearly stated
4	Core Library resource list items should be digital and hyperlinked when used in context
5	All "on-demand" (asynchronous) activity and resources should be accompanied by explicit instruction
6	Content should be written in the author's voice, with a strong narrative to engage learners
7	Community building should be integrated into the module design, and opportunities for active and collaborative online learning should be included
8	Automated learning checks should be utilised for regular formative assessment and instant feedback
9	Online content should be digitally inclusive and should achieve an accessibility score of 90% or above through Blackboard Ally
10	Audio and video content should be created in chunks of no longer than 10 minutes and hosted in Panopto
11	A range of supported digital tools should be agreed at the course level to provide a consistent student experience across modules
12	Online "live" (synchronous) sessions should include frequent activity changes and a break at least every 90 minutes
13	Group sizes and student teacher ratios for online "live" sessions should facilitate an engaging and interactive experience

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