Hybrid Learning Field Guide

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Introduction

The University of Pretoria (UP) offers students an environment that is intended to support the academic use of digital technologies, whether online or on campus. It is committed to digital initiatives that enhance educational opportunities and foster success for students.

As part of this commitment to both an accessible and quality 21st century learning experience, the University has developed a hybrid learning strategy where students can attend lectures, practical sessions and tutorials online.

E-learning, situated within the Department for Educational Innovation (DEI), is responsible for institutionalising UP's hybrid strategy and approach. To do this, E-Learning has developed "the Umbrella Application (App)" – a holistic hybrid course guide that combines UP's hybrid strategy with learnings about the use of digital for teaching and insights from the #feesmustfall campaign.

The Umbrella App consists of eight different dimensions, namely:

1. **Assessment**
2. **Teaching and learning strategies**
3. **Learning activities**
4. **Content**
5. **Communication**
6. **Administration**
7. **Design**
8. **Support strategies**

These dimensions have been arranged into an eight-panelled shape that resembles an open umbrella.

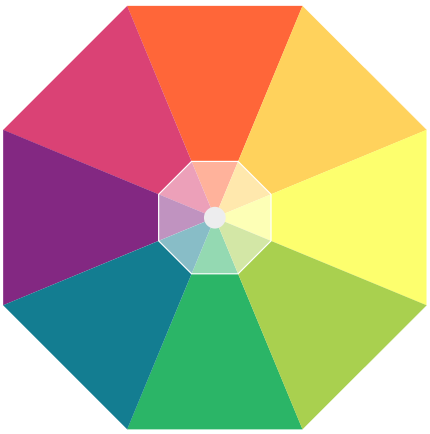

Figure 1: The eight-panel umbrella shape.

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The Umbrella App

The Umbrella App is intended to be used informally as a guide for the enhancement and development of high-quality hybrid courses. Academic staff are invited to consider the Umbrella App as a guide to the wide range of hybrid practices that can be used to build or improve a blended course.

Each of the panels contain a series of statements that guide lecturers through the general good principles, classroom practice as well as online tools or practices to evaluate their hybrid teaching. After working through the app's eight dimensions and identifying the types of implementation, a picture of the width and depth of hybrid adoption, in the form of coloured panels set into the umbrella, will emerge.

The Umbrella App should focus the course creator's attention on good pedagogical, design and technology practices that can be used when creating a hybrid course.

The Umbrella App uses the eight dimensions as a structure for its users to:

- record existing practices;
- self-identify features of their course within the eight categories; and
- create a record of the current practices to be used as benchmarks for future reference.

The Hybrid Learning Field Guide

The Hybrid Learning Field Guide complements the Umbrella App. Firstly, it identifies a variety of digital education practices commonly found in tertiary hybrid or blended learning environments. Next, it arranges them across the eight dimensions, followed by a selection of bite-sized suggestions to support professional development.

The "field" for which the guide is created is the higher education hybrid class. Most of the "objects" for study are to be found at the nexus of seat and screen time. The guide offers course designers and developers a starting point, ideas to consider, practical activities to try and checklists for implementation. The guide is arranged around the eight dimensions introduced in the Umbrella App and offers a buffet of other digital education practices which reinforce each panel.

The Hybrid Learning Field Guide appears in an electronic format (ePub or PDF).
Readers should NOT pay attention to the field guide if they:

- are looking for a magic formula for hybrid/blended learning;
- are satisfied with their present use of digital technologies for teaching;
- can't identify barriers that could hamper the unchecked use of technology;
- are looking for a frictionless and automated approach to hybrid/blended learning.

Understanding the need for the App and field guide

"Digital disruption" is a term used to describe the significant shifts that occur in markets or societies when advances in technology displace an established way of doing things. Since 2015, higher education in South Africa had to contend with a form of digital disruption, which was triggered by the #feesmustfall campaign.

The disruption, in this case, was as a result of a student-led protest to stop increases in fees, National Student Financial Aid Scheme (NSFAS) failures and decreased government funding.

An unintended consequence of the shutdowns was the amplification of attention on digital as a means to address a crisis. Multiple campuses across South Africa became inaccessible to both students and staff. This resulted in a rapid shift to a "digital mode" as a means to mitigate against the isolating effects of the #feesmustfall shut down.

Many students (especially those from historically privileged institutions) were able to use "survival technologies" to enable their learning, on and off campus. Protesting students were able to piggy-back off campus Wi-Fi and use their social media accounts to leverage national attention for their cause.

On some South African campuses, ed-tech platforms (like the Learning Management System (LMS) and messaging services (such as WhatsApp) were adopted in tandem by both students and their lecturers. Classes took place remotely. Assignments were submitted, marked and returned electronically.

Important notices were distributed via networked groups or social media; discussions were held on instant messaging; and tests were completed on a home PC, instead of large exam halls. Where students had their own device, or with meaningful access to mobile phones, computers and data, the academic process continued virtually uninterrupted. On less prominent campuses, lectures were cancelled, teaching and learning halted and the academic year shut down.

Research into the effects of the #feesmustfall movement has led to a greater awareness of other constraints facing those who use the digital environment to teach or learn.

Among lecturers, the following constraints have been highlighted in South African research:

- Digital literacy of lecturers;
- Lack of familiarity of the range of LMS features;
- Limited off-campus access to devices and technology and connectivity; and
- Lack of awareness of the time needed to develop online learning and assessment material.

Among students the following constraints have been highlighted:

- Uneven access to devices and costs of connectivity off-campus;
- Low levels of agency and independence; and
- High levels of stress (and sometimes trauma) that accompanied the sudden shift to digital.

#Feesmustfall: A digital disruption

The teaching and learning programme at UP was interrupted by the #feesmustfall campaign. The readiness of the academy, its staff and students, to pivot suddenly into an online mode of teaching and learning was tested.

This digital disruption differed from the typical technologically centered solutions or innovations. Academics and students were not seduced by digital with its exaggerated and unfounded promises. This "disruption" was not about digital gadgetry. For many it was about moving worried, stressed and angry students through the academic year and helping them complete their degrees.

Technology has repeatedly made promises about the possibility of an alternate route to higher education and further studies. The events of 2015 magnified the possibilities and pitfalls of using technology to enable learning within a higher education setting. Digital, within the #feesmustfall context, offered students the means to access their courses and complete their academic year. Conversely, technology also offered protestors and activists a quick way to mobilise support, organise events across campuses and draw attention to their cause.

The #feesmustfall crisis facilitated unexpected and dramatic shifts in established practices in classrooms and lecture halls. For some, the use of technology to address the immediate crisis also had longer term benefits and ongoing positive effects.

But for others, the use of technology in these circumstances became associated with conflicting emotions and positions. This left students and staff bewildered, stressed and uncertain about their roles and expected behaviour.

From a digital perspective, the #feesmustfall protests unintentionally created a pivot. This disruption:

- initiated an increased awareness of the technology variability of students;
- facilitated unexpected opportunities to leverage technology for teaching and learning;
- highlighted the need to extend staff members digital education competency levels; and
- offered new opportunities to institutionalise digital education quality improvement measures.

#Feesmustfall forced academics to deploy digital resources in a manner that make sense for students within their unique particular contexts. But this crisis management approach to using digital to address an access problem, should not be confused with hybrid learning.

A pivot towards hybrid learning

Digital education has been a growing feature of higher education provision at the University of Pretoria for the past 20 years. UP lecturers have successfully been using digital technologies to augment, boost or extend their classes, units, modules, courses and programmes.

Until 2015, many of these impact stories remained unheard, or not experienced, by most members of the academy in South Africa.

#Feesmustfall exposed hybrid learning as a realistic and promising approach for students and lecturers to teach and learn.

Readers who use the Umbrella App or page through the field guide will find summaries of expertise, good practices and evidence-based research from academics and practitioners, many with years of implementation experience. Importantly, the sudden pivot towards hybrid learning was more than an emergency measure to contain the immediate crisis initiated by #feesmustfall.

This pivot towards a digital modality is a part of societies broader aspirations and the landscape wherein hybrid learning is operationalised. If South Africa is to build upon the individual and institutional learning from

#feesmustfall, we need to focus on students' digital learning experience, the needs that were highlighted through this crisis and what academics and universities (like UP) can do to address these issues on and off campus in a sustainable manner.

Since the protests, there has been an acknowledgment about the need for the continued improvement of digital capabilities and competencies among academic staff. Also highlighted is a crucial need for guidance in course design, delivery and support.

To this end, the Umbrella App and field guide provides an aligned approach that brings together the broader technical and support functions needed for hybrid learning to be operationalised at scale.

Table 1: Field guide dimensions analysis.

	Goal	Barrier	Tactic
Assessment	To create opportunities for students to distil what they know, what they don't know and what they don't know they don't know. To foster an approach to assessment among students that completes the loop. Assessments that are not only about an event, but a process that allows them to monitor their own progress.	***"You've only got one chance"*** A high stakes marks driven mindset to course content. ***"Is this in the test?"*** a mindset among students where their approach to learning is only marks driven.	Incorporate diagnostic, formative and summative e-assessment practices and offer students a range of different reference points; encouraging students to use this information to assist them to self-regulate.
Teaching and learning strategies	To move students beyond the tyranny of simply knowing content to a place where they can practice active, enquiry, and authentic types of learning that is fit for purpose. Learning that also involves soft skills that can contribute towards their development of 21st century skills and competencies.	***"A deficit of attention"*** Unregulated use of connected devices that introduce barriers and distractions and interfere with concentrated effort. ***"Are we finished yet?"*** Students are not present or "in the flow" and attention is distributed and not focussed on tasks at hand.	Adopt an approach to curriculum planning that prioritises learning outcomes and meaningful learning activities e.g. flipped classroom or backwards design, and not only the mastery of a body of knowledge. Use technology in a manner that allows students to either show what they know, come to a point where they know what they need to understand, or link what they are learning within a broader context.
Learning activities	To scale and structure participatory learning activities that can be used among a cohort of students on and off campus. These activities should go beyond shallow learning and prompt higher order thinking and lead students towards the development of a deeper understanding.	***"Settle down and listen"*** A content focussed conception of education where there is a tendency towards transmission of information. ***"Is it downloadable?"*** Students tend towards passive learning and technology can reinforce this passivity.	Appreciate the scope and range of evidence-based learning activities available and recognise what works in small or large classes; in face-to-face or online settings; and the time and effort necessary to ensure its success.
Content	To introduce students to readily available resources and tools at their disposal that can assist with information overload. To allow them to manage the wealth of resources available while forging a learning pathway that makes sense to them.	***"The information superhighway"*** Limited use of filtering mechanisms or curation techniques to help students distinguish between essential and ancillary information. ***"It's a lot. My brain hurts"*** Students become overwhelmed as their working memory becomes overloaded.	Apply available tools and knowledge management techniques to assist students to re-arrange, structure and manage subject content. Promote the re-use and remixing of open education resources so that materials can be adapted and contextualised if necessary.

	Goal	Barrier	Tactic
Communication	To encourage regular communication and participation among all students. To enable, attend to and understand the range of voices.	***"Speak up please"*** Verbal/synchronous/real time communication is prized above other forms of communication. ***"I'll stay under the radar"*** Students who prefer asynchronous and considered communication, protect themselves from embarrassment or exposure by withdrawing.	Foster the use of modes of communication that encourage the development of an environment where presence and care is valued. Where students' roles and responsibilities within this classroom community are clear and their participation is welcome and rewarded.
Administration	For students to use technology in a way that mitigate risks and makes them resilient while managing many academic pressures. Students who have developed agency, can meet their academic and life responsibilities and adhere to university expectations.	***"Sink or swim"*** The heroic behaviours of online students are celebrated while little attempt is made to address counterproductive behaviours (disengagement, procrastination) that can be detrimental to success. ***"I didn't know about it"*** Limited appreciation or understanding of joint responsibilities within the learning contract.	Identify suitable self-regulatory behaviours, develop and re-enforce the growth of these skills with metacognitive tasks.
Design	For all students to be able to view and access key digital elements used within a course without undue hindrance or be equipped to take steps to address these issues.	***"As good as it gets"*** Campus-based courses remain the gold standard by which all other courses are measured and judged. ***"Click where"*** Uneven digital literacies among students and staff mean that some find it more difficult to navigate through the technical/ usability challenges that accompany a system.	Understand the principles of Universal Instructional Design and apply these principals into their hybrid courses to make digital resources accessible to all who access them, from whatever location and on whatever device.
Support	For appropriate direction (self/ data directed) that can address the diversity of academic and social needs of students in a timely manner.	***"Pointing fingers"*** There is often an unawareness of the need for assistance and/ or ignorance of the services available. This means that support is too little and/or too late. ***"I do not belong here"*** Technology offers access but it can also re-enforce perceptions of isolation and marginalisation.	Use technology in an intentional manner that supports access to the broader set of campus services. Cater for the diverse range of "at risk" students that are enrolled in a course, whether they are on or off campus.

The field guide creates a narrative around these barriers, goals and strategies. It's user-friendly design means readers can dip into it, take what is relevant and useful, and apply it in their course or consult the DEI for further assistance.

Some of the elements featured in the guide might fit across multiple dimensions. We intend to provoke thought and inspiration among those who want to take their hybrid learning approach up a notch.

Unfurling the umbrella

There are several ways to “unfurl the umbrella”. There is no one size fits all approach to the development and improvement of a hybrid course. The Umbrella App and field guide introduce a framework to build upon the sudden pivot towards digital and hybrid learning.

Importantly, before you open your computer, log on to the LMS and use the Umbrella App to self-assess your current digital practices. Before refreshing your course site with ideas from the field guide, we suggest you write down in capital letters what you hope your students will achieve by the end of the course.

The articulation of learner outcomes is the first step towards developing, evolving or using a hybrid course.

Scenario
You have been asked, as quickly as possible, to produce a hybrid course and you haven’t done this before. Your first reaction is to take what you normally would do in a classroom, split it in half and put the one half online. Combine readings, lecture notes and tutorials in a discussion forum and then carry on with lectures.

Simple? Not really. A hybrid course entails more than just replacing seat time with screen time. Linking the two parallel tracks is necessary so that the online and class-based elements relate and complement each other.

Learning outcomes

Learning outcomes are statements that indicate what a student will know, value or be able to do by the end of your course. They are:

Assessable

Written from the student perspective

Focused on what students can expect to achieve.

When students fail to understand the underlying purpose of technology use, they often confuse technology skills with the appropriate use of technology for intellectual development.

Learning outcomes should clarify the intended use of technology for students. This is especially important among those who have just matriculated and have limited experience of the different teaching approaches used in higher education.

It is likely that recently matriculated students from such a background would typically expect technology to be associated with didactic teaching and the delivery and acquisition of information, followed by the final exam. Picture the student(s) in the context of the course that you are blending, for example:

- Who are your students now and where would you like them to be by the end of the course?
- What is the profile of your students: year level, prior knowledge, age, distribution, technology skills etc?
- What major pieces of information will they need to have covered?
- What learning materials will they take forward with them into their future life or career?
- What technologies and media will be needed to support their learning?

Foregrounding students while writing down learning outcomes can add clarity to the elements you intend to include in a hybrid course. If outcomes are articulated clearly, then learning activities can be designed in a way that align with the outcomes. The assessments test the ongoing acquisition of learning materials, while course technologies support all the above.

Process to design a hybrid module

Steps to follow:

1. Choose a **unit outcome and its assessment criteria** that you plan to address.
2. Based on Bloom's Taxonomy Level, **select verbs** for the outcome and assessment criteria.
3. Choose an appropriate **teaching and learning strategy/method** that will help students reach outcomes.
4. Write down a **general description of the flow of the activities** students will have to complete to reach outcomes.
5. **Now decide how you will use the different environments** (classroom, contact practical sessions, paper resources, LMS and other technologies) to address the following components of this part of the course:
   a. assessment and feedback;
   b. learning activities to assist students to engage with the concepts;
   c. content (learning resources);
   d. administration; and
   e. support.

   To ensure you choose the correct mode, it is important to think about the VALUE that each of the environments/modes bring to the learning of students.
6. **Calculate the notional hours it would take an average student to master the required content to achieve the outcome.** This includes contact time, online time, self-study, preparation time for assessments and assignments, time on field trips, rehearsal time, and test/examination sitting time, among others.
7. Use the plan you created through these steps to **populate your study guide**, create the necessary resources and structure your learning environments.

It is easy to be impressed by shiny technologies: to believe that this app or tool will change the classroom, transform teaching or create an engaging learning experience.

However, it is crucial that outcomes must precede the use of technologies or gadgets. Setting outcomes, not choosing technologies, is where the course development process begins.

Who determines your use of digital to achieve course outcomes?

There are many who have a stake in a hybrid course. Hearing and balancing these many voices and their implicit and explicit messages about how to go about improving hybrid learning is a balancing act.

Admin might want to show how technology improves the enrolment process. A mature student would prefer the flexibility associated with an online course. Parents who believe that the use of emerging technologies shows that students are ready for an uncertain future. An HOD might want to improve departmental communications with in-course announcements and notifications.

Librarians might like to see improved usage stats and links between courses and journals. An "at risk" student, expecting and receiving re-enforcement via supplementary materials. Publishers see digital storage and dissemination as a means to share learning resources more efficiently. A professional body, expecting CPD expertise to be available from the experts.

Postgraduate lecturers might see digital as a means for enabling new means of communication and dialogue in their class. Quality committees may see the opportunity to quality-assure and standardise assessment.

In the field guide we have highlighted some of the more obvious and loud voices who have a stake in hybrid learning. Then we have alluded to how digital technologies or media selected from a range of activities and approaches might address, adapt to, or adopt these stakeholders' needs and concerns.

The guide will:

- introduce the broader concepts and challenges associated with the eight panels and some of the concerns and experiences within these areas;
- refer to different ideas and practices that might be used to develop this dimension. These practices are drawn from a wide, but not exhaustive, range of classroom and online sources;
- offer directions to explore further resources that can assist with further quality improvement efforts.

We hope that after using the Umbrella App, reading the field guide and recognising the degree of implementation in a course, that academics will grow in confidence and become more willing to explore the many opportunities that digital can offer their students.

Panel 1: Assessment

The "assessment driven" student

"Is this in the test?"

We are all familiar with students who will put in additional effort when they know that "this is for marks". We recognise their logic. Assessment, rather than teaching, is a key influence on students' learning.

Continuous assessment is when there is regular and purposeful use of assessments. E-assessment makes such assessments lecturer and student friendly. Multiple assessment points can act as measures which will allow the student (and not only the lecturer) to ascertain their own levels of understanding during the course.

A regular low stakes e-assessment approach can assist students to distil what they know, what they don't know and what they don't know they don't know.

Voice 1: One chance

I spend the semester teaching students about my subject. I tell them they have one chance to show me what they have learned. I explain to them that in a real-life job you don't get a second change if you don't deliver. If you miss a deadline, you get a warning letter. If you fail, you get fired. That's how life goes. I'm teaching for the real world. Too many tests are a waste of my time.

Voice 2: A feedback loop

Assessment is not only for the institution's certification needs. Assessment can be a learning tool. I've used e-assessment to create firmer foundations in my subject. These assessments have been varied and include pre-course diagnostic assessment, self-assessment, peer feedback, as well as high stakes assessment. In my experience, e-assessment offers students a non-judgemental place to make mistakes, refer to exemplars, try again and judge what is required. We need to move beyond the focus on high stakes measures of achievement.

Assessment challenge

A hybrid course can reframe the ways assessment is used

For some, the word "assessment" conjures up a stressful reaction, memories of long hours studying, or getting a final good or bad result in an exam. These are familiar notions of assessment, but they do not capture the wide range of possibilities associated with e-assessment and how it could drive excellence in a number of ways.

An online quiz about a reading can assist a lecturer or facilitator to see if the text has been read beforehand and allow for personalised feedback. An interactive problem completed remotely could determine whether a concept has been understood and then link the student back to targeted support. A set of self-reflective journal entries that attest to current-level skills can show progress over time. Interactive group assignments that require collaboration offers induction possibilities, while structured peer feedback offers insights that are specific and timely. These are the types of assessments that allow for feedback and contribute towards the development of learning.

Assessment for learning: a formative or developmental approach about topic(s) to which the student can relate and use to direct future learning. This kind of e-assessment takes place during the learning programme, rather than at the end (summative), or beginning (diagnostic), and can be used repeatedly.

Assessment of learning: a final assessment of a student's achievement, ultimately leading to a formal qualification or certification of a skill. This kind of e-assessment is generally undertaken at the end of a course or programme. It is used to make a judgment about the candidate's overall achievement of learning outcomes.

REMEMBER, e-assessments are often quickly marked, but can require time to write, encode and moderate. They need to be moderated and will require some technical aptitude.

To begin: E-assessment instructions

E-assessments have two main elements. The instrument (where the evidence of understanding is collected) and the instructions (the steps to follow when using the instrument). It's very easy to neglect the latter.

For the student to understand the intended use of the instrument, these points should be addressed:

- **Purpose** – why the e-assessment is being used e.g. diagnostic, formative etc.
- **Procedures** – what steps are involved. Since a technology is involved, remember to build in a practice opportunity.
- **Logistics** – where and when the e-assessment will take place and the time available to complete.
- **Standards** – how will the e-assessment be marked, evaluated and graded.
- **Other** – what other e-assessment considerations should students keep in mind (extra-credit opportunities, re-writes accepted etc.).

Case studies

You will be discussing, analysing and writing cases studies during the course (face-to-face and online). Case studies provide a realistic view, challenge and solution of a particular situation.

Case discussion: Every week, I will post a video case study to the discussion board. Before the contact session, I expect you to watch it, prepare your response and contribute towards the discussion of a solution on the appropriate topic. In class, there will be a short low-stakes quiz, where you will articulate your own response to this case. The quiz is designed for you and is intended to check for comprehension and prompt recall.

Case analysis: During the semester, I will expect you to choose a minimum of five cases to analyse. Submitted analyses will be marked according to the rubric posted alongside each case. In class, you will be called upon to make connections between content being taught and your own analysis of a case. Excellent contributions will be rewarded.

Logistics: Students' contributions towards case discussions on the discussion board will be noted prior to class. Quality posts will be responded to in class and a brief summary (which will be helpful for your case analysis and case scenario) will be posted at the end of the week.

Please make sure you post on the correct topic. The rubric format offers online feedback for your case analysis. Additional comments can be found in the comments section below the rubric. Because the case scenario is for your final class mark, no feedback will be returned to students.

Note how the following instructions about cases studies explain the purpose, procedures, logistics and standards.

To begin: Peer assessment

Students learn when they can explain their ideas to other students and then provide feedback to each other. We call this peer learning. Many times, these interactions occur outside the classroom. But when these student-to-student interactions are structured into class or online activities, peer learning becomes peer assessment.

Peer assessment differs from lecturer's assessment because authority has to be negotiated. If students are also allowed to mark peers' work, and exercise their own judgement with their peers' work, then a better understanding of the process of assessment can emerge.

Table 2: Peer assessment compared to other assessment.

Peer assessment	Other assessment
Student centred and students gain a more sophisticated understanding of the gaps in their learning	Content centred where the focus is more about memorisation
Clear criteria allow students to jointly consider what constitutes "good work"	Could be norm referenced or the given criteria are not discussed.
Often involves authentic tasks because of the process of giving and receiving feedback	Is removed from a context and is difficult to link to authentic task
Provides opportunities for building confidence and shows that mistakes are not failures, but opportunities for learning	Limited or negative effect on confidence
Motivates students to participate and thus develop a sense of ownership about the assessment process	Students are isolated from the assessment process

To begin: An e-assessment "Dummy run"

To avoid the hitches and glitches that technology might introduce and reduce unnecessary delays mid-course, introduce a "dummy run" early in the semester. A dummy run should combine the assessment instruments and the assessment instructions.

A dummy run offers useful opportunities

For students:

1. To understand the assessment procedure;
2. To discover if and how they might access technical support; and
3. To provide feedback about their experience to the lecturer.

For lecturers:

1. To test the link between the markbook and the assessment;
2. To see if they can accommodate particular students' special needs; and
3. To rectify problems with sufficient time available in advance.

Dummy runs should be done in the initial orientation phase of the course.

Dummy run recommendations

- A web link to the technical support tool should be included in the notification, so students can access instructions on how to use the tools.
- Any work that is submitted (assignments, quiz, report etc) should be submitted from a computer/laptop and not a mobile phone.
- If videos are included in an assignment, the video must be uploaded to YouTube as an unlisted video, and students should submit the URL of the video.

The following instructions may assist students to complete online assessments

- **Read the instructions** – You will be clear about the steps to follow when completing the assessment.
- **Update your diary** – You will consult the schedule and know when the assessment is, well ahead of time.
- **Read the manual** – You will be familiar with the assessment tools prior to the assessments.
- **Be connected** – You will have access to stable internet and access to data or free Wi-Fi as a back-up.
- **Be pro-active** – You will avoid the last-minute rush and submit assessments in due time and not at the last moment.

To consider: Reduce the "cost" of e-assessments

If you plan to use continuous e-assessment, with different kinds of low or no-stakes activities, then reduce the unnecessary stresses (like a timed quiz or negative marking) on students. Failures during a low-stakes activity (whether tech or academic) should not have substantial "costs" for students.

Low stakes assessments and low-cost failures help students to become familiar with the tools available within the LMS. Students also learn how they might seek assistance to master the technologies and the subject matter.

Here are a couple of low stakes (and low cost) activities:

- **Example 1:** An online self-assessment, such as a study guide quiz, so students can check whether they have understood the instructions.
- **Example 2:** A regular class survey with anonymous input by students. This offers the opportunity to collect useful feedback from students.
- **Example 3:** A non-credit, online practice exam that allows students to access previous exams papers to complete themselves.

While these low stakes activities listed above might remain unmarked or unscored, they still can provide data points for the lecturer to review as an indicator of student learning.

Example 1: Study guide quiz

A study guide quiz help students become familiar with matters such as course policies, expectations and routines. It could even be used as a contract to verify understanding of important aspects of the course.

It also sends the message to students that they are responsible for their own self-management. The quiz enables students to practice using the assessments tool. This quiz will reduce student questions about course policy and prevent repeated questions.

Instructions: The study guide quiz is based on the course syllabus. It should be completed by the end of the first week of class.

1. What is the website address of this course?
2. Who is your lecturer?
3. What is the preferred route for communicating with the lecturer?
4. What percentage of the total grade is allocated for participation?
5. If an assignment is submitted one day late, how many marks are deducted?
6. What is the most severe sanction for plagiarism?
7. What tool has information about deadlines and due dates?
8. What is the date for the final exam?
9. What address can you contact if you require assistance if there is a technical problem?
10. What course materials need to be brought to contact sessions?

Example 2: A class survey about feedback

There is no doubt about the importance of feedback for learning. But feedback is diminished in usefulness when students do not understand it or perceive its importance. This survey is intended to enquire (anonymously) from students about their preferences.

Instructions: Please rank the following statements from most valuable to least valuable. This survey should be completed just after submitting your first assignment.

When getting feedback from my lecturer, what I would find most valuable is assistance to:

1. Help me understand why I got a particular mark
2. Help me appreciate how well I am getting on
3. Help me understand where I went wrong
4. Help me understand specific course content
5. Help me develop my academic writing skills (e.g. referencing)
6. Help me with subsequent assignment(s)
7. Help me become more engaged in further study (e.g. going back to the course material)
8. Help me make it clear what I need to do to improve
9. Help me to keep going and try harder
10. Help towards exams
11. Help me to develop my intellectual skills (e.g. problem solving and analysis)
12. Help me develop my learning skills (e.g. reading and note taking)

To consider: Auto marking e-assessment

Question types such as multiple choice, true or false, matching responses and so forth, can be used with a bank of questions to test a large class easily and release marks automatically.

For lecturers, especially those with high enrolment numbers, a reduced marking load is welcome. We've already mentioned the need for a dummy run to address technical issues. But auto marking and the questions that are marked need to be thought through quite carefully.

Table 3: Auto marking e-assessment.

Opportunities	Challenges
Immediacy If students see their test results immediately, their interest is piqued, and they can respond and take self correcting actions	**Impersonality** Although students are getting feedback on their performance, the human touch is missing. Students may become excessively discouraged if they encounter frequent poor results
Location and time independent Students can take a test from anywhere and at any time	**Cheating** It is easier to impersonate another student or bring in additional aids to the testing situation
Automatic score recording Results can be logged automatically, and optionally made immediately visible for student access	**Technology problems** Technical problems (e.g. failed hardware, phone line outages etc.) may need to be allowed for, and participants should be encouraged to document these problems rather than just complain, that "it doesn't work"
Timeliness If the e-assessment is used as a learning check, then the timing can be set up so the e-assessment is available at a specific time or date	**Time commitment** Although e-assessments can decrease academics overall workload, building the e-assessments take time
Improved access On and off campus students can do the e-assessment	**Students require some technology skills** Students need to have at least baseline competencies in using the technologies

Common pitfalls to avoid when setting short questions for auto marking:

1. The position of the correct answer (e.g., A, B, C, D) does not vary;
2. Using double negatives or absolutes such as "never" or "always";
3. Using NOT or EXCEPT in the question;
4. Implausible or obviously wrong answers (distractors);
5. Distractors provide unintended cues to the correct answer;
6. Distractors overlap;
7. Grammatical clues offer a hint to the correct answer (e.g., the use of "a" or "an");
8. Including "all of the above", as students only need to know that two of the options are correct to answer; and
9. Including "none of the above" as this tests ability to detect incorrect answers, but not whether they know the correct answer.

Types of questions that can be used for auto marking:

- **Multiple choice questions** – the student has to choose one answer from a list of possible answers.
- **Multiple response questions** – the student has to select more than one answer from a list of possible answers.
- **Alternative response question** – the student has to choose between two items. Students have a 50% chance of guessing the correct answer.
- **Ranking questions** – the student re-arranges a list of items in a column. Used to test the knowledge of sequences, order of events, level of gradation.
- **Matching question** – the student sees a set of statements and a set of responses. They have to decide which response from the second list corresponds or matches each statement in the first list.
- **Completion question** – the student is given a statement and key words are omitted. Students have to complete the statement by filling in the word(s).
- **Assertion/reason question** – Students have to decide whether the assertion, statement and explanation are true, and if true, whether the explanation is a valid reason for the statement. The question combines elements of multiple choice and true/false question types.

To try: Constructing a rubric

Rubrics allow students to develop their own evaluative judgments. The criteria stated in a rubric can act as a sign-post or a guide for students.

Rubrics allow for criteria referenced marking. The rubric identifies various dimensions for quality and provides a sequence of levels along a continuum within a specific dimension.

Rubrics can be associated with an essay, a presentation, lab work, forum contribution or final projects. A rubric can be linked with an assessment task, so that students can view the criteria upon which they will be graded.
Or a rubric can be shared among markers when assessing students work. Holistic use of a rubric offers an alternative to norm refenced marking, where students are compared against each other as a class and graded accordingly.

Good rubrics are valuable because of the further conversations they enable. They offer students a:

- set of concise and dependable dimensions (e.g. clarity, evidence, logic) that will be assessed;
- clear and thought through set of criteria for each dimension (e.g. clear and unambiguous evidence is presented);
- convenient and familiar format for reading and storing expectations; and
- quality or performance scale with each dimension.

Here are three steps to construct a rubric:

1 Generate potential dimensions

Names of the dimensions
This first step is the most important. It's what distinguishes a rubric from a traditional mark. Students are usually given a single numeric score or letter as evaluation of their work. By carefully choosing a number of dimensions to evaluate, expectations are clearer, and the feedback is much more helpful.

Begin by looking at your course outcomes and identifying some of the criteria you expect them to demonstrate.

Work your way through the table 4 and jot down the names of dimensions that could be incorporated into your rubric.

2 Select a reasonable number of criteria

Number of dimensions
In Step 1, you might have listed more dimensions than you really need, so now it's time to weed it down. Some say a rubric should fit on one printed page. Others say that four to eight dimensions is about right.

There's no one correct answer, but it might help to consider the purpose for offering a rubric. If it's diagnostic and formative, err on the side of more dimensions rather than fewer. If you just want to be able to give a summative evaluation of your students' performance for this particular lesson, then use fewer dimensions as it makes marking easier.

- Ask yourself what the most important aspects of this task are and rank your dimensions from most important to least.
- Eliminate those dimensions that are at the bottom of your list until you've determined the most important four to eight dimensions.
- Write those remaining dimensions in the leftmost column.

3 Write benchmark descriptions

Levels within each dimension

- What would a superb answer look like? Describe it succinctly and clearly and write each description in the extreme right or left column of the rubric.
- What would be missing in a weak answer? Look at your superb description and write a contrasting description in the opposite column of the rubric.
- Fill out the next column or two until you've got each cell of the matrix filled.

Developing a rubric might seem like a lot of work. But making the dimensions and criteria clear upfront will:

- save time when marking;
- make that process more consistent and fairer;
- communicate your expectations to students;
- help you to decide what and how to teach; and
- help students understand how their work is graded.

Table 4: Constructing a rubric.

If the outcomes have these elements...	Then consider these as possible dimensions
Written products	• Grammar and spelling • Organisation • Formatting
Creative products	• Surprise, novelty • Technical quality • Adherence to conventions of the genre
Collaboration	• Cooperation • Taking responsibility • Conflict resolution
Design	• Solution effectiveness • Solution creativity • Justification of solution
Persuasion	• Quality of argument • Match of appeal to audience • Organisation and sequence
Analysis (scientific or otherwise)	• Data gathering and analysis • Inferences made
Judgment	• Adequacy of elements considered • Articulation of ranking criteria
Compilation	• Selection criteria • Organisation

References
Adapted from Dodge, B. (2001) Creating A Rubric for a Given Task. Available at http://webquest.org/sdsu/rubrics/rubrics.html

To do: E-Assessment checklist

Having read the panel about assessment, you might want to consider a few e-assessment practices. Use the following checklist to guide your use of digital in hybrid learning.

1. What electronic "assessment for learning" elements would ideally be a part of your course?

- ☐ An auto marked prior knowledge e-assessment at the beginning of the module/unit
- ☐ A diagnostic e-assessment at the beginning of the module/unit to identify misconceptions
- ☐ Auto marked and anonymous self-assessment activities that are used during the module/unit only for the student's own benefit
- ☐ Peer/self e-assessment where students comment on fellow students work according to a rubric
- ☐ A formative e-assessment with no marks to be used during a module/unit
- ☐ A marked formative e-assessment that can be attempted repeatedly during a module/unit
- ☐ A significant high stakes e-assessment that is combined with formative elements that also contribute towards the overall marks
- ☐ An e-assessment that has a self-evaluation component
- ☐ Other

2. What personal feedback opportunities would you like to set up in your course?

- ☐ In text annotated notes as feedback
- ☐ Feedback that involves media (e.g. audio/video) on e-assessment tasks
- ☐ Feedback via online interactions from peers
- ☐ Feedback on tasks where students practice their knowledge, skills and understanding
- ☐ Other

3. What digital tools could you feasibly use to ensure consistent and reliable assessment?

- ☐ Tools that have the correct answers built into it and the work is marked automatically
- ☐ Tools that allow marking memoranda and rubrics to be shared
- ☐ Tools that allow us to insert numbers, symbols or words into submitted work
- ☐ Other

4. What continuous e-assessment activities could you use that are supported by technology in your course?

- ☐ Low stakes auto marked e-assessment activities
- ☐ Low stakes e-assessment activities where progress is recorded
- ☐ Mock questions taken from exams
- ☐ Mock exam questions with feedback
- ☐ Preparation prior to a low stakes e-assessment activity followed by continuous activity where progress is recorded
- ☐ Posting a set of progressively more challenging e-assessment activities where their progress is recorded
- ☐ A bank of options that are assigned or selected; broken into smaller subtasks and progress is recorded
- ☐ A schedule for submission of draft and final e-assessment task
- ☐ Other

5. What resources would you use to distribute assessment expectations with students?

- ☐ A range of formally marked assessments
- ☐ A memo and/or grading rubric
- ☐ Marked exemplar assignments
- ☐ Course exam(s) and/or answer memo(s)
- ☐ Reconstructed pieces of student work to illustrate specific points

6. What opportunities for engagement around assessment criteria would you like to enable in your course?

- ☐ Post assessment criteria in the form of a memo or rubric
- ☐ Post assessment criteria to a tool that supports interaction
- ☐ Rationale for the assessment criteria in response to interactions
- ☐ Create opportunities for students to view exemplars of work of that match marking criteria and then rank and justify their selection
- ☐ Create opportunities for students to reflect and discuss the marking criteria
- ☐ Create opportunities for students to re-state marking criteria in their own words
- ☐ Create opportunities for students to self-identify and record the criteria they wish to use
- ☐ Other

7. What structured feedback opportunities would you like to set up in your course?

- ☐ Mutually beneficial mid-course feedback
- ☐ Repeated opportunities for micro feedback during the lifespan of a course
- ☐ End-of-course feedback to review teaching and learning activities
- ☐ Other

8. What would you like to add to your course introduction page about assessments?

- ☐ The way assessments will be marked
- ☐ Marking criteria or memo and/or grading rubric that will be used
- ☐ When to expect results
- ☐ What type of feedback to expect?
- ☐ The channel for feedback

9. What options for control of the assessment process are offered to students'?

- ☐ Students can see marked assignments
- ☐ Students can see an exemplar assignment
- ☐ Students can see assignment topics to practice from
- ☐ Students are offered control over their assessment such as choice of topics, paper, or project, choice of assessment methods, etc.

Panel 2: Teaching and learning strategies

The "multitasking" student

"Are we finished yet?"

We recognise the student whose focus is on other pursuits rather than the immediate task at hand. Digital technologies can be used to extend learning beyond the class and connect what is being studied to broader society.

We think that approaches such as Inquiry Based Learning (IBL) or authentic learning are enabled and enhanced with technology. We see digital as a lever to prompt and support the development of desired graduate qualities and as a means to prepare students for a 21st century future.

Voice 1

I find it very difficult to teach students when half of them are hidden behind screens. Phones and laptops decrease eye contact, distract or interfere with what is being taught. I realise that these devices can be used to enable access to teaching materials and learning activities. But it seems that devices hijack both the time and minds of my students.

Voice 2

There is another lane for learning. Sometimes I choose to avoid the lane because it is unsuitable (too many distractions, does not integrate well with other systems), while other times we jump right in and use our tech for specific purposes. When I choose to use this lane, then I make sure that my intentions are clear to me and my students. I'm not into gadgets. Devices can solve some problems as well as create new issues. We must together decide on the clear returns on its use.

Backwards design

"Content tyranny" happens when the need to cover the textbook receives the highest priority. Time is scarce and a quick and efficient means is sought to cover the necessary information. Digital tools and resources can reinforce content tyranny because they offer unlimited amount of content.

"Backward design" challenges the content centred approach to curriculum design. It prioritises learning outcomes and meaningful assessment tasks.

When you design backwards, you support contextualised teaching approaches such as inquiry-based learning, authentic learning and mastery learning, that guide students towards understanding. In backwards design, students can "show what they know" and digital scaffolding can help them "come to know".

Inquiry-based learning

Addressing questions and solving problems is the hallmark of inquiry-based learning. It puts students' investigative work at the centre. The approach is used to acquire domain or topic specific knowledge and develop research and professional skills.

Inquiry-based learning (IBL) might take the form of a problem, project or case study. Scope can be a single contact session or could span a degree or programme. The nature of the inquiry might be guided, structured or open. With an IBL approach, lecturers are not focused on the exposition of content or a topic. They take on the role of facilitators, enabling their students to take greater responsibility for how they go about learning. Students move from investigating questions posed by others, to formulating their own research topics and converting that research into useful knowledge. This way, students gain both a deeper understanding of the subject matter and practice other transversal skills required for tackling complex real-world problems.

Mastery-based learning

In a mastery-based learning approach, the students are expected to progress through a sequence of levels; to level up each time they are tested for pre-requisite skills or understanding. This approach is frequently used to ensure that students who would not normally succeed in the given time can complete the intended goals.

Variations of mastery learning are competency-based education or personalised learning. Upwards progress depends on performance and not on the amount of time that has been spent in a class or course.

Assessments create confidence about the extent to which students have learned. When the learning levels are made explicit, students are able to discern how individual learning outcomes relate to each other. The decision on who will provide support to students to help them achieve mastery, such as teachers, peers, or automated systems, are aligned with assessments.

To begin: Engagement and cognition

Technology is often used by lecturers to capture interest, create something unique, flip a classroom or develop a connection between student and subject.

But if technology is "bolted" onto a course, then the work that is associated with technology's use can be superficial. Students do not remain interested and engaged just because an app is used. If technology is to prompt cognitive processing and engage students, then technology needs to be deployed strategically with the intent to capture, maintain and sustain engagement.

Table 5: Engagement and cognition strategy.

Phase	Intention	Use of technology
Getting students engaged Capturing student attention at the start of the course is a necessary pre-condition for effective learning. Here are two common strategies to trigger students' initial cognitive processes	1. **Primers for getting student attention:** two possible approaches for capturing student attention is to appeal to their curiosity or establish relevance. Curiosity is experienced as a result of awareness of a knowledge gap, which creates the motivation to find the answer. Weight is established when the topic has personal relevance to a student's current life experience, and this can lead to a desire to know more.	When using technology for student engagement, it's helpful to use a familiar media format, so that the focus is on the content and not the novelty of the medium. Curiosity may be triggered by new technologies, but if the reason for using a medium is to promote cognition, then the focus must not be on the delivery medium but the active use of the technology itself.
	2. **Presence and belonging:** when students feel a sense of care and connection to other students they are more likely to become actively involved. Lecturers play an important role in developing this sense of psychological closeness by actively and visibly being available and present. Technology can contribute towards presence and belonging when it is used consistently and purposefully. In the absence of such use, the student will feel isolated and as if they were teaching themselves.	A characteristic of a digital classroom is that the members (academics and students) don't necessarily share a physical location or a common time period. Simply incorporating communications technologies (like chat or a forum) does not lead to improved interpersonal connections. Greater intentionality is necessary to create a classroom community.
Maintaining engagement Maintaining student engagement through the course requires four strategies	1. **Consistent layout and structure:** a simple and intuitive design allows students to focus their attention on understanding the information, not the interface. Consistent use of outlines and structures in the design of a course communicates information learning and assessment activities effectively. When these designs are reinforced by regular use, a design pattern emerges that allows for maintained engagement.	Print media such as a books, chapters or journal articles have headings, abstracts, footnotes and summaries. These are familiar design patterns. Digital media do not automatically follow print design patterns and this inconsistent structure can impair communication. Lecturers should look for a course shell or template that can offer common design patterns. These patterns become authentic when they are customised and adapted.

Phase	Intention	Use of technology
Maintaining engagement *(continued)*	2. **Clear, but friendly, instructions and guidelines:** there is a tendency among teachers to communicate important information with gravitas. But this authoritarian tone can provoke anxiety and might impair understanding or cause withdrawal. An appeal to students' logic, emotions or character offers another way to communicate.	Finding the right tone, especially when online, can be difficult. An authoritative voice when transcribed into text, might seem authoritarian. Choosing and finding the correct tone can be difficult. First person works better third person. Action orientated words prompt student to respond to instructions.
	3. **Challenging and authentic tasks:** learning requires the combination of application and effort to set tasks. If assigned tasks are to be engaging and lead to new understanding and insights, they need to be structured in a manner that allows the students to experience a sense of achievement.	It is important to consider whether mastering the "tasks" and/or the "tool" is the focus of the activity. Cumbersome and unintuitive user interfaces can restrict the student's satisfaction in completing a challenging task. Or the focus is on learning a particular tool, and not explaining a concept and could lead to misplaced effort.
	4. **Timely, elaborated feedback:** the evidence strongly suggests that when feedback is immediate and specific, it results in better learning.	Prompt feedback is important, as is understanding the way the feedback is received and understood. Sometimes feedback does not need to be personal and different media offer different means to provide feedback in the form of examples and non-examples, scoring guides or models.
Re-engaging students In most courses a proportion of students will delay or fail to engage at the start of the course, or stop engaging during the semester, usually at key points such as assessment. The literature identifies two critical strategies for re-capturing the engagement of these students	1. **Monitoring and early identification:** fewer contact moments within a class mean that students are more likely to disengage or fail to re-engage. Recovering the attention of these students is possible with a specific call to action, which can then be recorded on the LMS.	Privacy and data protection issues need to be weighed against the desire to gauge progress. Apps or services that require teachers and students to supply personal information to a third-party service should be avoided.
	2. **Personal contact and negotiated conditions for re-engagement:** the most effective strategy for re-engaging students is personal contact by the lecturer. Such contact works best when the lecturer works with the student to provide help and support.	Teaching presence can be enhanced by using tools that allow for facilitation and feedback. If the tool allows for customisation, then it can fit the class context and the intended learning outcomes.

References (adapted from)

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Jeffrey, L. M., Milne, J., Suddaby. G., & Higgins, A. (2014). Blended learning: How teachers balance the blend of online and classroom components. Journal of Information Technology Education: Research, 13, 121-140. Retrieved from http://www.jite.org/documents/Vol13/JITEv13ResearchP121-140Jeffrey0460.pdf

To consider: Flipped learning

Flipping describes the inversion of expectations in the traditional lecture. Flipped learning rearranges the traditional relationship between student and lecturer.

Lectures are moved away from the face-to-face component of a course and into the student's own learning space. Students do not sit passively in class receiving material. Their face-to-face time is spent on dynamic, interactive group learning.

- **Outside class:** Students' time is devoted to gathering information largely outside class by reading, watching and listening.
- **Inside class:** Student become hands on students who solve problems together or apply what they have learned into new contexts.

It's easy to mix up the terms flipped classroom and flipped learning. But it is a mistake to use the terms inter-changeably. The flipped classroom describes a logistical arrangement – how and when the initial information is encountered by students, and what is scheduled to happen in class. Flipped learning isn't about inverting lectures and homework. Its focus is on the processes that students engage in and the outcomes they strive towards within that logistical framework.

Flipping is not about using technology to pump out information and then take it on faith that the students can understand it. The purpose behind the flip is to shift from passive to active learning in order to focus on higher order thinking skills. It's about shifting the ownership of learning from the educator to the students.

Flipped learning involves putting the student at the centre of a course, and not the lecturer or the content, and assisting the student to unpack their own understanding. The educator guides the students as they apply concepts. The educator also corrects misunderstandings and provides timely feedback.

Flipped learning is suited to large introductory courses and can make the traditional lecture more productive. Lecturers can focus on explaining challenging concepts, project-based learning activities or solving local/ global challenges, gaining a deeper understanding of the subject.

Handheld clickers are often paired with the flipped classroom as the combination allows lecturers to gauge the level of understanding among students and customise the teaching or discussions accordingly.

To try: Backwards design

Backwards design asks lecturer to think about the purpose of the course they are teaching. Or to keep the end in mind.

Many lecturers take a content focussed approach and structure their course around the textbook, their favourite topics or successful lessons. They assume that while covering this content, the desired results will be met.

Backwards design is premised on the idea that planning starts with a focus on the end. It's a method for designing a curriculum that involves setting goals before choosing instructional methods and forms of assessment.

It's not a philosophy of teaching, nor an approach to teaching and learning. It's a planning framework for arranging a curriculum. It's a way of asking "what should the student be able to accomplish?" and "what plans have I made to get them there?"

Backwards design of curriculum typically involves three stages:

1. Identify the desired results (big ideas and skills);
2. Determine acceptable levels of evidence to support that the desired results have occurred (culminating assessment tasks);
3. Design activities that will make desired results happen (learning events).

1 Identify Desired Results – What should students know, understand, and be able to do?

"Content tyranny" describes the excess of content than can reasonably be included in a course within the limited amount of available time. This first stage in the design process calls for choices about priorities and goals. This is where we consider what we want students to be able to accomplish and review curriculum expectations.

Learning priorities are established by long-term goals – what it is we want students, in the end, to be able to do with what they have learned.

Stage 1 focusses on "learning outcomes." Important knowledge and skill objectives, targeted by established standards, are also identified in Stage 1.

2 Evidence – How will we know if students have achieved the desired results?

A backwards designer must consider in advance the assessment evidence needed to document and validate that the targeted learning has been achieved. Curriculum planners must think like assessors before designing specific units and lessons. There are two broad types of assessment – performance tasks and other evidence.

The performance tasks ask students to apply their learning to a new and authentic situation as means of assessing their understanding and ability to transfer their learning.

When someone truly understands, evidence might be that they:

- can explain concepts, principles, and processes by putting it their own words, teaching it to others, justifying their answers, and showing their reasoning;
- can interpret by making sense of data, text, and experience through images, analogies, stories, and models;
- can apply by effectively using and adapting what they know in new and complex contexts;
- demonstrate perspective by seeing the big picture and recognising different points of view;
- display empathy by perceiving sensitively and walking in someone else's shoes; and
- have self-knowledge by showing meta-cognitive awareness, using productive habits of mind, and reflecting on the meaning of the learning and experience.

3 Plan Learning – How will we support students as they come to understand important ideas and processes?

Too often, teaching focuses primarily on presenting information or modelling basic skills for acquisition without extending the lessons to help students make meaning or transfer the learning. In Stage 3 of backwards design, lecturers plan for understanding and give students numerous opportunities to draw inferences and make generalisations for themselves (with lecturer support).

Understanding cannot simply be told; the student has to actively construct meaning or misconceptions and forgetfulness will ensue. A lecturers role expands from solely a "sage on the stage" to a facilitator of meaning making and a coach giving feedback and advice about how to use content effectively.

Many lecturers are used to systems and structures like the 45-minute lecture, schedule or timetable to structure their work.

Backwards design asks these lecturers to figure out how they will organise the exposition of their subject. Much like a good coach can see the big picture, uses routines to identify what a team can do, and then uses drills to help them become skilled in a specific ability, the backwards designer:

- considers desired performances of his or her students first;
- thinks about what data can be collected to show that the end goal has been achieved; and
- then arranges learning activities and resources to address the performance goals.

To do: Techno teacher checklist

Having read the panel about teaching and learning strategies that are enabled with technology, you might want to think about your current use of technology.

Use the following checklist to identify your current use of digital to support your teaching or students' learning.

And then think about how you might exploit the attributes of technology to achieve enriched teaching experiences or perhaps create better learning experiences that are not possible through the use of face-to-face teaching or technology alone.

Highlight these innovative ideas and then explore them with your local instructional designer:

- ☐ I use digital technologies to prepare my lectures
- ☐ I use digital technologies to enhance live teaching/learning interactions e.g. via classroom technologies such as clickers
- ☐ I use digital technologies to support synchronous learning interactions e.g. via video conferencing technologies to offer a webinar
- ☐ I use digital technologies to support asynchronous learning interactions e.g. via the discussion forums for a group work task
- ☐ I use digital technologies to monitor progress and identify students who require assistance e.g. via course stats to monitor completion
- ☐ I use digital technologies to deliver pre-packaged modules that are course pre-requisites e.g. via the LMS to teach statistics
- ☐ I use digital technologies to develop and make available digital resources to support learning e.g. podcasts, screencasts, online presentations, video, open educational resources, reusable learning objects
- ☐ I design online learning activities using a wide range of LMS or third-party tools
- ☐ I provide opportunities for students to use tools so that students can find, choose and evaluate online resources relevant to their learning e.g. searching for open educational resources, data sets, online journal articles and e-books, academic blogs and websites
- ☐ I design activities that encourage students' participation in digital collaborations e.g. via apps that support social networking environments or social referencing
- ☐ I provide multiple opportunities for students to develop their digital capabilities and learning skills e.g. online information literacy, online communication skills, note-taking and curation, digital reflection
- ☐ I provide multiple opportunities for students to use academic, professional and commercial technologies as relevant to their subject of study e.g. CAD for engineers, data analysis for computer scientists
- ☐ I encourage and support activities that promote teaching and / or support learning effectively in digital settings

Panel 3: Learning activities

The "passive" student

"Is it downloadable?"

We see the student who has a tendency towards passive learning. We know that conceptual development occurs when students choose to participate and interact. We want to widen the scope for engaging learning activities within a formal classroom or lecture theatre and beyond.

We believe that student-centred activities can be deployed, even in a lecture hall. Technology supports an active approach and allows students to make meaning with others, instead of only listening and processing to information by themselves.

Voice 1

I bring years of experience to my subject. I can tell students about what they need to know, why this is important and the context wherein that knowledge is needed. The prescribed textbook is very dense. My notes are concise and my slides focus on the application of this information. When I ask if there are any questions, they keep quiet. I must be explaining things very well.

Voice 2

I have high expectations about participation. My students are more than spectators. Listening to me and taking notes is only a beginning point. I'm looking for new opportunities for students to respond to each other and with me. I set "doing" tasks that make participation possible, even in a big class. You don't actually learn until you engage.

An active class

You walk into a room and see students huddled together in small group discussions. The lecturer stops them after about a minute, calling randomly on several individuals for responses; getting more responses from volunteers; and then proceeding with their lecture. The whole process takes less than three minutes, during which most or all of the students are awake and actively engaged with the course material.

"Giving away information" does not lead to meaningful use or internalisation. In-class interactions are useful to activate students' prior knowledge, motivate them to take action and help bridge ideas from familiar concrete contexts to an abstract concept. When technologies are combined with learning activities, then these tool offer new levers to enable greater participation by a wider selection of students.

Learning activities challenge

From student passivity to student activity: the transition towards a student-centred active learning approach can be taxing. Students are resistant to alternative teaching and learning patterns. Honey and Mumford's (1983) categories offers an appreciation of student's differing learning preferences could explain reluctance to participate and be more engaged.

- **Activists** respond most positively to learning situations offering a challenge; to new experiences and solving problems in their learning.
- **Reflectors** respond most positively to structured learning activities where they are provided with time to observe, reflect and think and allowed to work in a detailed manner.
- **Theorists** respond well to logical, rational structure and clear aims, where they are given time for methodical exploration and opportunities to question and stretch their intellect.
- **Pragmatists** respond most positively to practically based, immediately relevant learning activities, which allow scope for practice and using theory.

To begin: Modular structures

A hybrid course is usually divided into multiple units. Each unit contains course materials, learning activities, assignments, and assessments for that unit. A modular architecture offers the course designer with more options. Smaller components of a course allows the off campus student to see how the elements fit together and offers them a structure for navigating their way around a course.

Riggs & Linder (2016) see the following advantages in such an arrangement of smaller parts:

- Pacing the learning experience to prioritise information and activities and to help prevent students from feeling overwhelmed;
- Allowing students to monitor progress regularly;
- Discouraging procrastination by providing regular milestones and deliverables;
- Visually providing a high-level overview of the course topics, which can increase understanding of how course topics relate to one another; and
- Providing space to scaffold active learning experiences and to provide sufficient opportunity for guidance and feedback on reflection activities.

These units, modules or parts are necessary not because students have short attention spans or are unmotivated, but because the absence of a physical and face-to-face social architecture necessitates an alternative virtual architecture.

Structure of a unit

This e-tivities checklist by Jilly Salmon offers ten tips for structuring a unit or module.

1. **Number:** Within a sequence of in-class and online activities, a student needs to know where it fits within the overall course
2. **Heading:** A catchy, attention grabbing title makes it easier to return to a section
3. **Period:** The total amount of time required to complete the activity
4. **Outcomes:** A clear statement of what students will accomplish once they have completed the learning activity
5. **Task summary:** Introduction to "what you're going to do"
6. **Spark:** A brief trigger, whether it be a little video, example, case study or picture
7. **Details:** More explicit instructions for the students with links to further resources if necessary
8. **Call to action:** Expected tools to use for students' work and their response to another student's work with links to further resources if necessary
9. **Feedback:** Anticipated feedback, perhaps a summary, perhaps a weave that pulls together all the various contributions
10. **Next steps:** A link to the next activity

Communicating the details clearly

Take a look at a learning activity. Use the five headings to consider whether it is structured in a manner that clearly communicates all the details necessary to comprehend and complete the activity or task.

Introduction

- Does the introduction draw the student in by relating to the student's interests, putting the students inside a scenario, describing a problem, or by asking a compelling question?
- Does the introduction build upon prior knowledge and introduce or foreshadow future work?

Task or activity

- Is it very clear to the student what they will have accomplished after completing the task?
- Is the task that has been set do-able and engaging?
- Does the task encourage higher order thinking?

Process

- Is every step in the process section clearly stated so that students will understand what they are to do?
- Are checks for understanding built into the process?
- Are the activities within the process clearly related and are they designed to evolve students' thinking?

Relevance, quality and quantity of the resources

- Are the resources of instructional value to the students?
- Do the resources hyperlink to the correct websites?
- Is the layout and design appropriate for the students?
- Are there appropriate, thematic graphic elements throughout the activity that help students understand the concepts and relationships presented?

Clarity of assessment criteria

- Does the assessment rubric clearly communicate to the students what is going to be assessed?
- Does it provide a list of criteria for appropriate levels of performance?
- Does the rubric match the learning outcomes?
- Does the conclusion summarise what the students have accomplished and learned?

To consider: Learning activities that promote "participation"

Learning activity*

Active learning is an accepted method for engaging students in what they are learning. As a pedagogical strategy, active learning will differ in class (synchronous and face-to-face) and digital (asynchronous online learning environments) settings.

Table 6: Learning activity: Muddiest point.

Title of approach	The muddiest point
Description and purpose	Muddiest point asks students to jot down a quick response to the question "What was the muddiest point in _____?" The term "muddiest" means "most unclear" or "most confusing". The purpose of the muddiest point is to provide information about what students find most confusing in a unit or topic.
Digital use	When using the forum, or engaging in an online presentation or assignment, construct an additional post, slide or instruction that can be inserted or shown. This post slide or instruction should enquire, "What was the muddiest point in [the lecture, discussion, homework assignment, film, etc.]? Students should then be directed to a common location where they record their muddy points. The automatic response should inform students about how these points will be addressed. It's probably a good idea to manage expectations and state that the amount of feedback will be limited to three main points .
Benefits and challenges	When working online, students have the time to frame their response and think about what is truly the "muddiest point". If all the muddy points are posted onto the same media, then the academic can see levels of understanding from the student perspective and understand the range of understanding. Students could however also be swayed by what others have posted if using a discussion or message board.
Class use	At the beginning of the lecture, let students know about the muddiest point, tell them beforehand how much time they will have to respond and what use you will make of their responses. Reserve a few minutes at the end of the class session. Use in-class clickers, slips of paper, index cards for students to write on. Collect responses as or before students leave. Stationing yourself at the door and collecting "muddy points" as the students file out is one way; leaving a "muddy points" collection box by the exit is another. Respond to students' feedback during the next class meeting or as soon as possible afterward.
Benefits and challenges	In class, the muddiest point is quick and simple to administer. It requires little preparation and can be used on the spur of the moment. There could be a tendency to respond to "muddy points" from past sessions and loose forward momentum.
Considerations	Don't become angry or disappointed if students identify something as a "muddy point" that you're positive you presented with absolute clarity.

References

** Learning activities drawn from the CDLI Blended Flow Toolkit Seattle University, CC BY NC SA https://seattleu.instructure.com/courses/1569931*

Table 7: Learning activity: Minute paper.

Title of approach	Minute paper
Description and purpose	The Minute paper is a very short, in-class writing activity. Students are usually asked to: 1. "identify the most important point they leaned today" and 2. "what key questions remain unanswered" The minute paper is NOT an assessment. A minute paper is for the lecturer to see from the students' perspective what they see as the most significant things they are learning, and what their major questions are. The minute paper is more than recall. By asking students to add a question at the end, the minute paper also becomes an integrative task. Students must first organise their thinking to rank the major points and then decide upon a significant question. The minute paper provides manageable amounts of timely and useful feedback for a minimal investment of time and energy .
Digital use	When using the forum, or engaging in an online presentation or assignment, construct an additional post, slide or instruction that can be inserted or displayed. This post slide or instruction should enquire "what is the most important thing you learned in this module (topic)?" or "What important question remains unanswered in the lecture, discussion, homework assignment, film, etc.? Students should then be directed to a common location where they record their minute paper. Encourage student to read each other's posts and comment on them. If you would like to respond, then it's probably a good idea to manage expectations and state that the amount of feedback will be limited to three main points.
Benefits and challenges	The minute paper provides rapid feedback on whether students and the lecturer share the same perception about the main idea. But if the same question is asked each time, then this learning activity can also quickly be dismissed as gimmick or a proforma exercise. Time should be set aside to prepare suitable questions. For the activity to be meaningful repeatedly, the question might want to seek to highlight shift in understanding or help students identify unrecognised inter-relatedness of concepts.
Class use	**Pre-class:** Decide on your focus points (students understanding homework assignment etc) as this will affect whether you want to run this activity at the beginning or at the end of a class. Then write down minute paper prompts that fit your course and students. Try out your minute paper on a colleague or teaching assistant before using it in class. Plan to set aside five to ten minutes of your next class to use the technique, as well as time later to discuss the results. Before class, write one, or at the most two minute paper questions on the chalkboard or prepare an overhead transparency. **In class:** In class, let students know about the minute paper exercise. Hand out index cards or half-sheets of scrap paper at the determined time. Unless there is a very good reason to know who wrote what, direct students to leave their names off the papers or cards. Let the students know how much time they will have (two to five minutes per question is usually enough), what kinds of answers you want (words, phrases, or short sentences), and when they can expect your feedback.
Considerations	Students may confuse details with significant topics. They might pose questions instead of answering the topic. The point of this exercise is to see the class response through different eyes, hear it with different ears, and make sense of it differently than you do.

Table 8: Learning activity: Think-Pair-Share.

Title of approach	Think-Pair-Share (TPS)
Description and purpose	Think-Pair-Share is a short activity intended to prompt thoughtful consideration and conversations among students. Think-Pair-Share offers students time and structure for thinking on a given topic, enabling them to formulate individual ideas and share these ideas with a peer. 1. Students THINK (i.e. must consider alone) about an answer to a higher order question, solution to a problem or topic. 2. Students then PAIR to discuss ideas or ask their partner about their own thoughts. 3. Following the discussion, students SHARE what they discussed with their neighbour. Often in this group discussion "sharing" is followed up with a larger classroom discussion.
Digital use	This activity provides a way for students to get to know a peer. It also gives students the opportunity to refine their thoughts and practice articulating them with just one person before presenting to a larger group. Students are paired up and use an online platform (see tools) for back and forth communication either synchronously or asynchronously.
Benefits and challenges	The interaction around TPS motivates participation among the entire class and allows quiet students to answer questions without having to stand out from their classmates. Full class discussion is generally more fruitful after a think-pair-share and throughout the semester, as the frequent use of such activities generally improves student comfort levels and willingness to participate throughout a class period. One of the biggest challenges of the think-pair-share is to get all students to truly be engaged.
Class use	This is a three-step process where each student first thinks silently about a question that is usually posed by the teacher. Next, students are paired and discuss their initial responses. In the third and final step, students share either their own response or their partner's response with the larger group. This activity provides a way for students to get to know a peer. It also gives students the opportunity to refine their thoughts and practice articulating them with just one person before presenting to a larger group.
Benefits and challenges	The lecturer can easily see pairs that are having difficulty with their assigned activity. But when it comes to sharing, if this is a large class, then time constraints will prevent complete class sharing.
Ideas for extending	Pair sharing in class can be enhanced with clickers as all responses can be communicated and a record of all responses are saved.

Table 9: Learning activity: Concept map.

Title of approach	Concept map
Description and purpose	Concept maps and mind maps typically have a central concept from which ideas radiate and take shape in an organised and visually memorable way. All ideas are located on one page and students connect what they know with their own ideas. Mapping concepts can help your writing through structuring ideas and innovatively constructing arguments. Concept mapping encourages students to • engage with course material • find linkages between course concepts or theories • surface a synthesis of ideas
Digital use	When a concept map is in a digital format and shared online, students have the option of working individually or in groups on the same concept map, while separated by time and place. When concept maps are used collaboratively, before and after contact sessions, then in-class work benefits because knowledge has become accessible or information is integrated.

Benefits and challenges	The remote concept map allows a user to synthesise information over time, find, describe and record linkages, notice the breadth and depth (metacognition) of understanding. However, online concept mapping tools might shift the focus onto mastering the concept mapping tool and not on the intended development of higher order thinking skills.
Class use	After completing a topic, students are asked to complete a concept map or spider diagram that summarises the key points and includes the main relations and principles. Students then compare their maps in groups and suggest improvements to their own maps, and then to each other's. A concept map also works well as group activity. Students can gather around a large piece of paper or designate one person to input the information into a digital concept map. The result is a visual way to link where the class has been, where they are, and where they would like to go – drawing connections between concepts to synthesise the relationship of elements in a new and novel way
Benefits and challenges	The classroom drawn concept map is either 1) not easily shared with student group members outside class or 2) a static version of the concept map. Further refinements to the concept map after the class session are not as easily made or shared.
Considerations	Include a link to help resources for any of the concept map tools you suggest to students. Produce a concept map yourself as this will help with troubleshooting any problems.

Table 10: Learning activity: Case study.

Title of approach	Case study
Description and purpose	Provide real or simulated problems for students (usually in a group) to investigate or analyse. Each group must arrive at a solution by applying course concepts and evidence found in literature.
Digital use	A case study and associated resources can be uploaded to the LMS (if copyright permission has been granted) or a link provided if the case study is elsewhere on the web. The "solution" to a case study can be captured in a collaborative slide deck, edited and shared by group members and then distributed electronically.
Benefits and challenges	Using case studies online affords flexibility; case discussions can be conducted either synchronously or asynchronously and either individually or in groups. Students have time to contemplate the varied dimensions inherent in well-written cases. Students learn to communicate their ideas using a variety of textual and multimedia tools. If group work is required, it can be difficult for students to establish a meeting time that is acceptable for all. The ambiguous nature of case studies could lead to frustration if students feel isolated.
Class use	Case studies can be handed out or projected on a screen.
Benefits and challenges	If working in a group, students not only hone their problem solving and analytical skills, but also develop interpersonal skills and the ability to work with others. Discussions around case studies can be very lively and facilitated by lecturers asking probing questions. Good case studies are multi-faceted and therefore students may need time to absorb the facts before they can act on the material.
Ideas for extending	Good case studies have the following features. They tell a story, they are recent, involve dialogue, create empathy and require a dilemma to be solved. Lecturers do not only have to be the sole source of the above and can also involve students in contributing these elements and thus creating their own case study. A case study template can be used to capture and organise the standard features of the chosen approach. This template need not only be for the lecturer and with appropriate scaffolding, students generated case studies can be generated and assessed.

To try: Interaction mechanisms

Participation with peers is a vital part of the learning process.

Students should be expected to be activity involved in their learning, whether face-to-face or online. It is not necessary to replicate the in-class activities within the remote sections of a hybrid course. But it is important to clarify interaction expectations.

In class, participation can take many forms. They range from open ended questions intended to focus the whole class' attention on a big idea, to group projects where teams are led through an investigation that demands complex reasoning or problem solving, to one on one question and answer conversations before and after the lecture.

When encouraging active learning and interaction online, it is probably necessary to define what constitutes as online participation. Is one to one messages participation? Substantiative dialogue that builds upon posts and responses? The expectations around interaction should be stated up front. The levels of participation can be defined in a rubric.

Below is a sample policy for a hybrid course, which communicates an expectation for participation upfront.

Peer participation

This is a hybrid course and the class is arranged into weekly units. We meet face-to-face in class every alternate week and the other portion of the class takes place online (the dates during which we meet face-to-face are clearly indicated in bold font on the study guide schedule). Attendance at the face-to-face classes and regular participation (whether in class or online activities) is required.

Whether we are meeting face-to-face or working online, you will be expected to go online to continue discussion or complete other activities. Your participation is measured by how much you engage with peers and the lecturer in synchronous and asynchronous discussions.

See the peer participation rubric (table 11) clarify criteria and expectations.

Table 11: Peer participation rubric.

	Excellent	Needs improvement	Unsatisfactory
Peer Interaction (f2f)	Actively listens to peers, initiates dialogue and interacts with a variety of viewpoints	Listens and responds to peers, but does not consider all viewpoints	Little to no interaction with peers
Posting responses (online)	Exceeds required posts and responds timeously throughout the discussion	Posts and responds to required expectations	Missing or late posts and responses
Frequency of participation	Is an active participant in discussions	Participates occasionally in discussions	Rarely to never participates in discussions
Preparation	Prepared beforehand and can make strong connections to readings and course materials	Moderately prepared and connections to readings are unclear and sometimes inferred	Little evidence of preparation and no real connection to readings
Comments	Comments expressed are topical, thoughtful and considered and usually advance the level and depth of the dialogue	Comments that are expressed are topical and drawn assigned	Comments (if expressed) are occasional and vague
Impact on the learning community	Group dynamic is better because of the student's presence	Group dynamic are not affected by the student's presence	Group dynamic are affected negatively by the student's presence

To do: Decision making checklist

Having read the panel about learning activities, you might want to consider how you can structure and arrange participative and interactive practices in your hybrid course.

1. When do you clarify and share what the learning activity is?

- ☐ At the beginning of the course, the learning activities are shared in class
- ☐ When students enrol, the learning activities are included in a course pack
- ☐ When online, an index of learning activities is visible
- ☐ When online, as each module begins, a sequence of activities is released as students complete assigned work

2. What teaching and learning method do you intend to use in association with this learning activity?

- ☐ Case study
- ☐ Discussion and debate
- ☐ Guest lectures
- ☐ Independent study
- ☐ Individual/group projects
- ☐ Lab work
- ☐ Lecture
- ☐ Multimedia presentation
- ☐ Peer assessment
- ☐ Presentation
- ☐ Problem solving
- ☐ Reading
- ☐ Reflective documents
- ☐ Research projects
- ☐ Self-assessment
- ☐ Seminars
- ☐ Simulations (e.g. computer based, role play, etc.)
- ☐ Tutorials
- ☐ Work placement
- ☐ Other

3. What methods of assessment do you intend to associate with this learning activity?

- ☐ Analyse a case
- ☐ Discussion and/or debate
- ☐ Group work
- ☐ Lab report
- ☐ Oral presentation
- ☐ Participation
- ☐ Problem setting
- ☐ Project-based
- ☐ Reflective journal
- ☐ Report
- ☐ Self-evaluation
- ☐ Peer evaluation
- ☐ Service work/community engagement
- ☐ Work placement
- ☐ Written assignment
- ☐ Multiple choice exam
- ☐ Written exam (e.g. essay, long answer)
- ☐ Oral exam
- ☐ Portfolio
- ☐ Poster
- ☐ Presentation

4. How will feedback be given to students regarding their achievement / development of the identified learning outcomes in this activity?

- ☐ Numerically graded
- ☐ Written feedback
- ☐ Verbal feedback
- ☐ Peers provide written or verbal feedback
- ☐ Students provide self-assessment of their own development
- ☐ No direct feedback is given

Panel 4: Content

The "overloaded" student

"Yoh! It's a lot. My brain hurts"

We realise that the equivalent of a library sits in the palm of student's hands. We are beginning to see the associated cognitive burdens and costs that certain students have to bare when given access to a wealth of information.

We believe that curation tools offer lecturers and students a means to collect critical and up-to-date works, a hub from where these seminal and supplementary work can be accessed, and an order or sequence.

When curation is associated with Open Education Resources (OER), content becomes available at lower costs. Students are offered a richer media experience and begin to see where they have come from and where they are expected to go.

Voice 1

Since my time is tight, I usually take my learning materials from a single source, save them in an electronic format and ask an assistant to upload them. I am sure that my students appreciate the wide range of information available and will benefit from these resources.

Voice 2

I see how students become overwhelmed with information. Their attention is affected by this cognitive load. I've taken to curating my course materials. Information is arranged and tagged according to date, unit or subject.

Content can never stand by itself and should be accompanied by appropriate learning activities and assessments. Course content must be specifically selected to contribute to the achievement of learning outcomes.

"Curation" sets out to create a buffer between over-abundance of information and our working memory. Online curation tools allow an academic to put selected content into a context, organise and annotate the information and then share it with students.

Students' confidence, digital skills and ability to affordably access the content are further criteria that will affect the choice of posted content.

Academics need to be aware of copyright and licensing status on all materials used in their courses. OERs are educational materials that either have an open licence (like creative commons) or reside in the public domain. OERs can be legally used, adapted and reshared at little to no cost, thus allowing students access to up-to-date, relevant and accessible subject material.

Concern	You have noticed that your students, despite all the communication devices at their disposal, seem reticent or removed from the interactions that you have set up in your hybrid course.
Your reaction	Whether in class or online, the screen becomes a barrier and not a mechanism for interactions between you and the class. Your first reaction: to send out a warning email insisting on participation and consequences. And then carry on with online activities and assessment.
Our advice	There is often an expectations gap between the academic and the student. If you are to create a positive learning environment, then that expectation gap needs to be cleared.
Rationale	If students have a clearer understanding of the roles and responsibilities of themselves and the academic, a better lecturer-student working relationship can develop.

To begin: Content inventory

Once you have set your outcomes and aligned assessment and learning activities, you are now ready to start looking for content. Content is the core element of any online course, but it is not the only element.

The course team has a responsibility to collect and curate content so it makes sense, keeps to copyright and licensing conventions, and keeps to a common usage standard.

As a preparation step for putting a course online, it is useful to locate and think about course-related information and activities that will be useful or required for this course.

This matrix (see table 12) will help you identify what resources you are currently using, what resources you can adapt and what resources you need.

The matrix also reminds you of the variety of formats in which these content items exist (print, online, audio, video, etc).

The resources are also associated with learning activities and tasks, which could prompt further development of content.

Table 12: Content and course inventory.

Content	**Format**					**Specific learning activities/tasks**
	Text	Graphics	Multi-media	Slides	Other	
What I find and reuse as is	Course outline Reading pack ePub course booklet	Guidelines for submitting an assignment Course booklet front page	Introductory video to your course facilitator	Lecture slides for course	Pre-course diagnostic quiz Study guide quiz E-publisher content	Read the course outline, watch the introductory video and download the lecture slides. Then complete the study guide quiz
What I find, tweak and use	Course book overview Big question Instructions for collaboration Group contract Updated list of journal articles	Icons for each section to use in course book	You-Tube videos	Applicable SlideShare slides	Open Educational Resources' activities	Read chapter 1 of the book with the big question in mind. Once you have finished the above, then use the mind map to describe the relationship between this big idea and three concepts. Then share this map with your group How could you apply the xx model to this? Discuss in the forum
What I find, repurpose and use	Assessment rubrics Key quotes from course book	Creative commons images	Short clips from previous students work		Multiple choice quiz	Complete the multiple-choice quiz Reflect on the quotes and your learning about this topic and update your journal
What I create for this module	Assessment task Format for evaluating student's presentation Presentation rubric	Graphic to explain module alignment with rest of curriculum Graphics to explain difficult concepts	Videos/ narrated PowerPoint of key concepts	Exemplar PowerPoint for students	Work sheets/ cases/tutorial material to use inside the classroom	Create a presentation for your peers and upload it to forums

To begin: Arranging key texts and supplementary readings

Once you have completed your content inventory, then attempt the following steps to arrange all your course-related information:

1. **Look through the course outcomes and identify themes, topics etc.**

2. **Arrange these resources in a folder structure.**

3. **Identify different types of resources that students will need to draw on to complete course activities and assessment, e.g.:**
    a. textbook chapter
    b. webpage
    c. chapter/section of a web document
    d. article from an online periodical
    e. online scholarly journal article
    f. article from disciplinary and professional associations
    g. newspaper article
    h. electronic books
    i. encyclopaedias and dictionaries
    j. data sets
    k. graphic data (e.g. interactive maps and other graphic representations of data)
    l. online book chapter
    m. video, audio
    n. blog
    o. forum or discussion post
    p. wiki.

4. **Divide the resources into:**
    a. seminal resources
    b. supplementary resources
        i. PDF backup
    c. student generated resources.

5. **Name the resources using a common convention:**
    a. camel case is the practice of capitalising the first letter of each word in a series and then removing spaces, numbers, underscores, hyphens, and other special characters, e.g. Assignment1BasketWeaving.
    b. snake case is the practice of writing compound words or phrases in which the elements are separated with one underscore character (_) and no spaces e.g. Assignment_1_BasketWeaving.

6. **Craft descriptions for all the resources that you require students to use. Check these resources against the course outcomes, assessments and learning activities.**

7. **Ensure that the assignment includes directions and tasks, activities or questions to students.**

8. **Place these assignments appropriately within the folder structure that you created in step 2.**

To consider: Open textbooks

A textbook usually offers a comprehensive compilation of content within a particular discipline. With the proliferation of PCs, laptops, tablets, e-readers and smartphones, there are the very real possibilities of using digital textbooks.

Commercial textbooks (either available as a PDF or ePub) also come with constraints. They usually have digital rights management embedded in them which restricts their use beyond the single paying customer. They are as expensive as hard copy textbooks and those who cannot afford them are immediately at a disadvantage. They are usually not customisable; YouTube videos, discussion questions or assignments cannot be introduced. Copyright conditions make them less accessible and restrict their re-use and redistribution.

Open textbooks offer the combination of being digital and affordable. With an open textbook, the lecturer can distribute textbooks freely, incorporate annotation tools so that books are read actively, and annotate them socially.

Open textbook self survey

1. Which type of textbook formats do you generally recommend to your students?

- ☐ A bound textbook that is printed on paper and purchased at a bookstore.
- ☐ An e-textbook, available for purchase, and protected with digital rights management.
- ☐ An e-textbook that is rented and available in multiple formats.
- ☐ An e-textbook available within my course in digital format that can be duplicated and downloaded.
- ☐ Other

2. Which of the following describes the way you have mainly used textbooks in your teaching?

- ☐ Reading lists of textbooks accompany each module/study unit and I expect students to refer to them.
- ☐ I refer to the textbooks within my teaching sessions.
- ☐ I base my modules/study units around the textbook content.
- ☐ I utilise fully the textbook content alongside other items provided by the publisher e.g. multimedia resources, question banks.
- ☐ Other

3. Which of the following would influence your selection of textbooks to use in your teaching?

- ☐ Textbooks that are free from cost to students.
- ☐ Whether the book is stocked in the library.
- ☐ A textbook with comprehensive content and learning activities.
- ☐ Works with my institution's LMS.
- ☐ Recommended by other teaching colleagues.
- ☐ I'd pay no attention to the cost of the book to the student.
- ☐ Able to include hyperlinks and multimedia resources.
- ☐ Familiarity with textbook authors and publisher.
- ☐ Includes supplemental teaching material (e.g. PowerPoint slides, question banks).
- ☐ Available in accessible formats.

4. How aware are you of open textbooks?

- ☐ I am not aware of open textbooks.
- ☐ I have heard of open textbooks, but don't know much about them.
- ☐ I am somewhat aware of open textbooks, but I am not sure if they are appropriate for my needs.
- ☐ I am aware of open textbooks and some of their use cases
- ☐ I am very aware of open textbooks and know how they can be used in the classroom

5. Thinking about open textbooks[1], indicate how you feel about the following statements (agree neutral disagree).

- ☐ Students should have access to open textbooks as they are free or low-cost.
- ☐ A textbook that is adaptable/ editable would be important to my teaching.
- ☐ I would consider using open textbooks in the future.
- ☐ I'd like to be part of a subject community producing our own open textbooks.
- ☐ Providing students with textbooks wouldn't impact much on their debt.
- ☐ I'd use open textbooks if I had support at my institution.
- ☐ I would use open textbooks if they were easy to find for my subject.
- ☐ I wouldn't be interested in using open textbooks in the future

References

1. *As defined by Allen and Seaman 2016 (Opening the Textbook report), "open textbooks are textbooks that are freely available with non-restrictive 'open' licenses. Covering a wide range of disciplines, open textbooks are available to download and print in various file formats from several web sites and repositories". https://m.wikihow.com/Decolonise-Your-Classroom-to-Make-It-More-Inclusive*

2. *Thanks to Viv Rolfe for the original survey .*

To consider: Open licences

To identify whether a resource is an open education resource (OER), the simplest way is to look for the licence.

Works that are published are, by default, protected by copyright law, although they will not always display the familiar © to draw your attention to their legal status. If the published resource has an open licence associated with it, then you can assume that it is an OER. If it does not, it means, unfortunately, that it is most likely protected by copyright law, so copying it is illegal.

What is an Open Licence?

An Open Licence is a legal statement that allows content to be open and free. There are different licences that can be used to share educational resources with others. Open licences do not replace copyright legislation.

They work alongside legal frameworks and enable the creators of resources to modify copyright terms to best suit their own needs.

Public Domain

Public Domain materials are creative works where the intellectual property rights have expired and there is no longer any copyright attached to them. The public owns these works, not an individual author or artist. Anyone can use a public domain work without having to obtain permission.

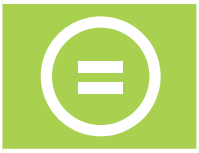
Creative Commons (CC) licences

The most commonly used open licence is the Creative Commons (CC) licence (see https://creativecommons.org). Creative Commons have released several copyright licences.

The different kinds of licences allow creators to communicate which rights they reserve, and which rights they waive for the benefit of users or other creators. Creative Commons licences consist of four usage conditions, which can be mixed and matched to form one of six licences.

Creative Commons have simple and easy-to-understand copyright licences. They provide a standardised way to give the public permission to share and use your creative work – under the conditions of your choice.

The **Attribution** licence means others can share, copy, redistribute, display, perform, remix and tweak the work as long as they give credit to the creator.



The **No Derivative Works** licence means that others can share, copy, redistribute and display the work as long as they do not change it or create derivative works.

The **Share Alike** licence means that others can share, copy, redistribute, display, perform, remix and tweak the work as long as they keep the same licence when they share the resource themselves.

The **Non Commercial** licence means that you can share, copy, redistribute, display, perform, remix, and tweak the work as long as you do not use this work for commercial purposes.

These licences (represented by four symbols) offer the lecturer more flexibility to share, copy, redistribute and display work than copyright law normally allows. The four terms can be mixed in different combinations. These combinations then define the way in which others may freely and legally share, modify, or build upon a copyrighted work.

Table 13: Creative Commons Licences.

Licence name	Acronym	Icon	Description
Attribution	BY		This licence lets others distribute, remix, tweak, and build upon your work, even commercially, as long as they credit you for the original creation. This is the most accommodating of licences offered, in terms of what others can do with your works licensed under Attribution
Attribution Share Alike	BY-SA		This licence lets others remix, tweak, and build upon your work even for commercial reasons, as long as they credit you and license their new creations under the identical terms. This licence is often compared to open source software licences. All new works based on yours will carry the same licence, so any derivatives will also allow commercial use
Attribution No Derivative	BY-ND		This licence allows for redistribution, commercial and non-commercial, with credit to the author. The work may not be altered, transformed or built on
Attribution Non-commercial	BY-NC		This licence lets others remix, tweak, and build upon your work non-commercially, and although their new works must also acknowledge you and be non-commercial, they don't have to license their derivative works on the same terms
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References (adapted from)

The Open Educational Resources (OER) Guide for Students in Post-Secondary and Higher Education.

To try: Content curation

There is a wide range of digital sources of information. Online curation tools can be used to collect a range of resources under a certain topic, organise or tag them in a manner that makes sense to the curator, reflect on their usefulness and then share and publish them with others.

If you have not already done so, create an account for a curation tool. Use the selected tool to manage the different digital sources of information. Then start collecting resources, organise them, reflect on them and share them. It is important to not forget the social aspect of these curation tools.

Although you might prefer to work alone, together in a team you can curate and build a collaborative list of useful resources that you can consult together with other academics or students.

Table 14: Curation rubric.

Rubric	Well done	In process	Getting started
Curation tool	The selected curation tool is both used appropriately and suitable for the topic	The selected curation tool is either appropriate for the topic or is used suitably	The selected curation tool is not appropriate for the topic and is not being used suitably
Topics	A wide selection of topics has been curated	A few topics have been curated	There have been no topics that have been curated
Organisation/ Tagging	The topics have been tagged and or organised in a clear and logical manner	The topics have been tagged or organised	Topics are not organised or tagged
Annotation and attribution	Consistent and useful annotations about the information resource has been made and if necessary, attribution is made	Annotation about the sources of information resource is incomplete. Attribution is sporadic	Annotations about the information sources is missing and there is no attempt at attribution
Sharing	The curated information sources have been collaboratively curated and shared on appropriate channels	The information sources have either been shared or collaboratively curated	There is no sharing or collaboration around the information sources

Table 15: Curation tool use, e.g. video curation.

Rubric	Well done	In process	Getting started
Customised platform	I have selected an ideal platform and I know how to customise it to make it meaningful	I have selected a platform and I'm trying to customise it	I have not customised my platform
Collection	I collect videos that are focussed on a specific subject	I collect videos	I search for videos, but do not yet add them to collections
Audience	I consider who my audience are and I keep them in mind as I manage my video collection	My video collection is managed but not for a particular audience	I do not have an identified an audience
Breadth and depth of focus	Videos are focussed around a particular topic and they go in-depth	Videos are broadly focussed around a topic	There is no breadth or depth of focus on a topic
Organisation/ Tagging	I have tagged the videos and organised them in a clear and logical manner	I have started to tag or organised the videos	I have not organised or tagged the videos
Annotation and descriptions	Consistent and useful annotations about the videos has been made	Annotation about the videos is partially done	Annotations about the videos are missing

To do: Content release checklist

Having read the panel about content, you might want to consider the following factors before posting onto your site.

Content basics

- ☐ The unit's resources are copyright compliant
- ☐ The content that you have inserted is contextualised and relevant for the course outcomes
- ☐ The content is divided into manageable segments
- ☐ Content include resources that require student interaction such as case studies, case examples and simulations
- ☐ Content takes full advantage of online tools, features and media in the LMS
- ☐ Tools and media are appropriately introduced or demonstrated
- ☐ The relationship between learning materials and learning activities (case studies, case examples and simulations) is clear
- ☐ Open Education Resources are incorporated
- ☐ Open content is augmented/ enhanced by student-generated materials

Are the learning materials listed below current, timely and still working?

- ☐ Textbooks, lecture notes or PowerPoint presentations (partial/ skeletal or complete)
- ☐ Printed course packs
- ☐ Links to online articles
- ☐ Case studies
- ☐ Textbook publisher materials
- ☐ Practice of previous year's exams
- ☐ Library resources and databases
- ☐ Solutions to homework assignments
- ☐ Worked examples (text, screencast, or other format)
- ☐ Animations, video clips, or simulations related to course material
- ☐ Wikis or discussion boards
- ☐ Additional lecturer selected notes or supporting materials, podcasts, etc.
- ☐ Specialised software
- ☐ Other

Panel 5: Communication

The "reserved" student

"I'll keep quiet; they don't get me"

We notice the quieter student who does not like the spotlight, is reserved and prefers to keep their own counsel. We don't want to belittle anyone or embarrass them. We think that in a hybrid environment, interactions can be both immediate and timely or asynchronous and considered.

If care and connections are built into the fabric of a course, then we can interpret and attend to silent and loud voices.

Voice 1

There is nothing better than the richness of face-to-face (f2f) interaction. When we are present, when we connect, when we are all heard. Contact is crucial! I don't want to be replaced by a screen. I think that my students expect someone in person that will really pay attention.

Voice 2

I've seen how the combination of f2f and online allows my students to feel more connected to me, their peers and their studies. Screens do not have to be lonely and anti-social. Many of my students are quiet in class and the online environment offers them another place where they can be heard.

Scenario

Students, despite all the communication devices at their disposal, seem reticent or removed from the interactions that are offered in a digital teaching and learning environment. Whether in class or online, the screen becomes a barrier and not a mechanism for interactions between all the class participants.

A common reaction is to send out a warning email insisting on participation and consequences. And then continue with planned activities and assessments, expecting students to comply.

There is often an expectations gap between the academic and the student. To create a communication-rich learning environment, that expectation gap needs to be bridged.

If students have a clearer understanding of their roles and responsibilities and are aware of what to expect from the academic, better lecturer-student communication can develop.

Mounting time pressures during a semester will make it increasingly difficult to communicate and give students the feedback they are asking for.

Communication shapes

Course feedback can shape the learning process and motivates engagement. It can also take up a lot of time and sap lecturer's attention. When designing the digital elements in a course, it might be appropriate to consider how to combine different feedback types that suit all parties.

Types of feedback

- **Information feedback:** A reply to a comment or query. Many of these questions are standard and students can be referred to a FAQ where the answer can be found.
- **Acknowledgement feedback:** A brief automatic response that is provided when a requirement is complete. When students submit work, build in an auto response that appreciates the submission and provides them with next steps.
- **Constructive feedback:** A response that is based on observations. This type of feedback depends on the lecturer's time and teaching techniques.

To begin: Connected community

Communication is essential for learning as it allows students to participate in conversations, take the risks with exposing their understanding. But expecting students to participate in discussions and ask questions without a trusted community takes courage.

Most students prefer to remain silent. In online sessions, it's even easier to lurk or withdraw. Creating a sense of class community is vital for any meaningful participation.

The time to begin building a communicative learning environment is at the beginning of the semester. When you start in that way, students begin to develop relationships and understand the norms of their class. Activities planned for the first week should include introductions, ice breakers and other activities that connect and establish a community.

The forum is probably the most common place for community related conversations. Here are some tips on making the forums a place for communication:

- Communicate clearly about the purpose of the forum and what students can expect from it.
- Provide reasons to go to the forum. Is the forum the main place for students to get answers from you? Is it the central way for students to learn from one another? Will you post important material there? Is student participation required? Be sure that students know when and why they should use the forum.
- Manage expectations about your presence. Students should know in advance how regularly to expect you in the forum. Decide whether you will merely be reading the forum, or if and when (daily, weekly, etc.), you and/or your teaching assistants will be answering questions. Inform students of your forum participation plan so they know what kind of engagement to expect from you.
- Move relevant email to the forum. If you receive a question by email on a topic of general importance to the class, move it to forum. Be sure to anonymise the query, and of course be sure there is no private information in the email.
- Endorse correct answers to questions by students. Your acknowledgment will encourage them to answer more questions. Mention posts that you saw on the forum in class.

NOTE: The number of posts to a forum may become unmanageable in large classes. Use another tool if you only want to create a one-way communication to your students, e.g. Announcements, or a PDF file with frequently asked questions.

To try: Posting publicly

Students find posting "publicly" intimidating. They might be concerned about their spelling or grammar or be worried about what others might think about their intellectual prowess.

Posting and responding to thoughts, ideas and each other can be a bit intimidating. Posting angst, especially among those with an introverted disposition, is a normal reaction. A good way to manage this anxiety is to copy and paste a response to a thread into a word processing document to check for spelling and grammar errors prior to posting a response online.

It's always a good idea to re-read your response before you post. In addition:

- The content that is posted on the forum should be suitable for assessment.
- Make sure your post relates to the topic and the unit.
- If someone replies to your post with a question, you owe him or her the courtesy of a response.
- You are also responsible for posting your answers and replies on time.

Posting on a discussion board or forum

Here are three steps to follow when you post:

1 What do I think?

You are posting under a particular topic. This is where you write down your considered thought in as a reply to that question, statement or response. Remember to keep it on topic.

2 Why do I think what I think?

You are going to share your own understanding. You might have to examine your own experiences, beliefs, or knowledge. Or you might have to provide references, quotes, and/or links to materials to back up your opinion.

3 What I want to know?

You are going to promote interaction with each other. Ask a question. Write down what you want to know. You could direct this question as the lecturer. But it could also be directed at classmates.

Table 16: Example rubric for self-assessing your contribution towards the discussion forum.

Rubric	Well done	In process	Getting started
Title of my post	The title of the post is concise and informative. Classmates use the title to anticipate what the post will contain	The title of the post is a guide, it gives classmates a broad idea of what will be said in the post	Some potential readers may be lost because they can't clearly anticipate the material covered by reading the title
What I think	In the first few lines of the post immediately describe a coherent set of thoughts. These are directly related to the tasks that were set	The first few lines of the post are meander or are general in nature before getting to the key thought	The first few lines do not present any evidence of considered thought
Why do I think what I think?	In the main part of the post, a series of connected points are made and readers can follow the thinking behind the contribution	The main part of the post is sufficient, although the reader might not always make the connections that lies behind the contribution	The main part of my post is not well structured and the reader will battle to understand
What I want to know	A question is clearly framed and reinforced so the reader can reply to it	A question has been expressed, but it is not entirely clear and its possible to misinterpret or forget it	A question has not been framed

Netiquette

What is expected of people who post?

- **Any discussion board is a shared and public space.** When posting on a forum, we'd advise you to keep things constructive.
- **No 'flaming'.** Avoid personal attacks, pettiness, and abuse. Respect other users, and if you disagree with them, explain why.
- **No 'trolling'.** Trolls post messages that are deliberately intended to provoke an angry or emotional response. Forums are a space to present different positions and respond to them. Sometimes these positions and responses might be controversial, but the intention behind these posts are intended to explore different opinions.
- **No personal disputes.** Forums are not the place to engage in ad hominum attacks. If matters get personal, sort out the issue offline, preferably face-to-face.
- **No sarcasm.** Sarcasm is about ten times worse when expressed online.
- **Avoid using CAPS LOCK.** Use capital letters appropriately in your sentences. Typing something in capital letters is considered shouting or yelling.
- **Let it go.** It is not helpful to harp on about the same thing. Neither is it valuable to go back to previous arguments. Neither are productive, and if you refuse to move on, it's probable that you will end up going in circles.
- **Don't post in anger.** If someone else's post offends you, it can be very easy to post an angry and rude response. Before posting, remember that what you are saying will be read and remembered by others. Take a deep breath and think before you press the submit button.

To consider: Social presence

The opportunities for students and lecturers to communicate, interact and learn with and from each other are amplified and extended by digital media. But it's not the media or tools that establishes the connections. It's the way that people use the available media and formats to create intimacy and immediacy.

Social presence describes how people interact socially in mediated environments and how the perceptual gap between communicating parties (students and lecturers) might be closed. Bridging the psychological gap between students and lecturers is a vital activity. Without a clear perception of connection through social presence, students may lose motivation, or feel isolated. Learning is a social process. Students want a connection to a lecturer and each other. Incorporating interactive technologies in a course does not improve interpersonal connections. Lecturers who are online should consider how they will be actively present and visibly engage with students in the teaching and learning process.

Nine ways to build social presence

For those who are unsure how to go about creating a presence that effectively supports learning, here are nine tips for developing a social presence:

1. Be a human first and develop initial course activities that allow and encourage the development of "swift trust".
2. Students can soon discern if communication tools are central or peripheral to a course. Intention is established when this technology is integrated into regular course activities (and instructions about use are provided).
3. Design relationship building activities that contribute towards a class community that allow students to share their ideas, let off steam and virtually 'get together'.
4. Model and encourage the use of verbal immediacy. Mention people using @mentions, reply to their comments to you. Solicit student feedback about the course and then use that feedback to enhance the course.
5. Make your presence known and encourage students to do likewise. Instead of simply posting lecture notes, post a video of or offer a set of slides that is accompanied by a narrated audio track.
6. Update your online profile. Create and post content using blog posts, infographics or research papers that reinforces your position in a course.
7. Make discussion an important part of a course. Students should be actively encouraged to participate in regular discussion group postings, own the conversation and be seen gaining feedback and responses from their peer group and lecturers. If lecturers do not maintain an ongoing presence on discussion boards, students may feel that their participation is a waste of time.
8. Encourage students to take turns to summarise and moderate discussions. Include a quality of participation rubric and reward significant contributions in the final mark. Giving students a clear rubric and incentives for discussion board postings help to stimulate more meaningful interaction.
9. Develop a group where you encourage students to share experiences and beliefs using digital formats. If in doubt about the format, go visual and ask for graphics, photos videos etc.

In face-to-face communication, the psychological distance between two parties depends on the immediate verbal and non-verbal behaviour in the communication exchange. In mediated communication, it can be difficult to "read" the social and emotional connections between communicating parties.

In mediated communications, there is a tendency to develop more extreme perceptions than in face-to-face situations since the range of non-verbal cues has been reduced. The above suggestions should help both lecturer and students consider other persons, their characteristics, qualities and inner states.

To do: Communication choices

In a face-to-face course, even in a big class, you've created a perception of care through the combination of personal attention and academic interest.

A meaningful teacher presence can be developed that allows for inter and intra-personal communication and the development of a sense of care.

This care can be engendered both on screens and in seats, whether seated behind a row of desks, or around a table in an out of a classroom setting or in an online forum. Yet it is necessary to purposefully create an inviting out-of-classroom environment.

Digital offers communication technologies that can foster frequent and timely contact between academics and students. Think about how you will communicate to students.

1. How will you introduce yourself and connect with course participants? (Tick all that apply to you)

- ☐ I do not need to introduce myself
- ☐ I'll write a pre-course welcoming letter
- ☐ I'll have a brief bio on the LMS
- ☐ I'll supply a picture/avatar to display in activities
- ☐ I'll record a video where I introduce myself/activities
- ☐ I'll write regular announcements to students during the course
- ☐ I'll check in, connect and comment with students during the course
- ☐ I'll reflect about my course experience within other
- ☐ I'll post about the experience on my social media account
- ☐ Other

2. What information should you provide to students? (Tick all that you intend to provide)

- ☐ Instructions about how to start the course
- ☐ Instructions about how to navigate the course
- ☐ Instructions about how to locate various course components
- ☐ Expectations about appropriate etiquette
- ☐ Instructions for submitting assignments
- ☐ Wikis/discussion boards with little contribution from you
- ☐ Wikis/discussion boards with significant contribution from you
- ☐ Solutions to homework assignments
- ☐ Worked examples (text, pencast, or other format)
- ☐ Previous years' exams
- ☐ Animations, video clips, or simulations related to course material
- ☐ Lecture notes (partial/skeletal or complete)
- ☐ Presentations (partial/skeletal or complete)
- ☐ Articles from scientific literature
- ☐ Other

3. How do you plan to interact with students? (Tick all that apply to you)

- ☐ The course is self-study and no interaction is necessary
- ☐ I don't think that the students need to interact with me
- ☐ Expected guidelines about interaction is clearly communicated
- ☐ I have online office hours and students can interact with me then
- ☐ Students can interact with me via discussion boards/wiki
- ☐ Students can interact with me via email
- ☐ I will be hosting a webinar and students can interact there
- ☐ Students and I will be interacting right throughout the course
- ☐ Other

4. In what ways are students expected to engage and communicate with each other on your course? (Tick all that you would like to see on your course)

- ☐ Student to student engagement is not part of the course
- ☐ Students could opt to engage with each other
- ☐ Students are expected to engage with each other on the LMS
- ☐ Students will have to engage and work together in groups for marks
- ☐ Students will work together as teams on whole class projects
- ☐ Other

5. What kind of co-operation and collaboration do you expect when creating your online/hybrid course?

- ☐ I will be doing this ALL by myself
- ☐ I will project manage the course production process
- ☐ I will use and adapt colleagues' course materials
- ☐ My departmental course materials will be useful
- ☐ External service providers will add expertise
- ☐ A range of different role-players will work together

Panel 6: Administration

The "lost" student

"I don't get it"

We are concerned with the students who cannot find their way around administrative systems and academic procedures. We know about the many logistical challenges associated with staying on track. We have seen how some students lack experience within our organisational systems and are derailed during their learning journey.

Voice 1

Students should know what is required from them. The department has published course policies with information about student services and tech support. I've completed my half of the bargain. If they are unsure, then they can log on to all assistance they need. I can't do everything. It's time for them to step up. They need to manage their academic responsibilities.

Voice 2

Probably the biggest challenge for my students is the ability to self-regulate. I look for mechanisms to help students to learn agency and manage their academic responsibilities. Digital tools within the LMS can be mashed up with students' personal technologies. I use certain tools (like the calendar) strategically to assist students to use their time well.

The normal pattern of lectures and tutorials can be replaced with any combination of online discussion groups, simulations, discovery labs, multimedia lessons, tutorials, assignments, research projects, quizzes, and digital content. We think that this flexibility is wonderful, but concomitantly creates logistical challenges to students as they juggle their routines with an array of approaches that differ between different classes.

Digital learning is different in at least three ways – pace, place and mode:

- **Pace:** Hybrid learning provides the opportunity for students to extend their learning beyond classroom interactions. Students may now do online preparative work before class; or those who struggle to keep up during a class may review online videos, narrated PowerPoints or class notes after class at their own pace when they have time.
- **Place:** Students have greater freedom to learn within different environments (college or university, home, library, public transport while commuting, or abroad when travelling) as long as they have a digital device and access to the internet.
- **Mode:** Students can be taught with a greater variety of media or tools and these can be structured in a way that is engaging and participative. This approach means that learning can become more student centred.

Helping students to understand these differences is a vital and important part of preparing a student for a course. There's not necessarily a neat fit between student's expectations and actual university realities.

To begin: Course homepage

The homepage is intended to introduce a course, describe its purpose and significance. This is where the mindset of the lecturer, their philosophy of teaching and learning, as well as their attitude towards students becomes established. The homepage also serves as a guide for students.

The homepage should introduce and explain the contours of the course for the student. The tests, projects, and other assessments, as well as the type of teaching and learning they can expect. This introduction can condition student attitudes toward the entire course, the effort they are willing to put into it, and the relationship they will have with you and their peers throughout the semester[1].

Table 17: Possible headings that might affect the tone and voice used in the course home page.

Formal orientation	Action orientation
Course name and number	Welcome to (list the course name and number)
Course description	Questions addressed by this course
Course outcomes	By the end of this course you can expect to...
Prescribed readings	Readings, resources and associated materials
Course delivery	What to expect
Contact information and consulting hours	Availability of the lecturer
Course policies and prerequisites	Promises and responsibilities
Schedule	Milestones to import into your diary
Interaction guidelines	Discover how we intend to communicate and interact
Assessment strategy	Assessment
Grading and assignment	Nature of assessed work and weighting

The course homepage might also address questions about the degree to which students have choice, or what levels of activity are expected, and to what extent students are given power in conceptualising the course. If students are offered choice, expected to be active and hold power, then the homepage could consider addressing these three key elements:

1. **How a class community will be created?**
2. **What type of power and control is shared between students and lecturer?**
3. **Where are the links between assessment and learning outcomes and how are the two tied together?**

1. Lang, J. M. (2019). How to teach a good first day of class. The Chronicle of Higher Education, https://www.chronicle.com/interactives/advice-firstday?cid=wcontentgrid_hp_2

To consider: Frequently asked questions (FAQ)

A course outline (or syllabus) is a useful way to pre-empt common problems that might occur during a course. But a syllabus is often glossed over by inexperienced students because it overwhelming and seems meaningless.

"Syllabus bloat" is a result of putting too much information into a course upfront.

Common questions and standard answers is the primary way of helping students get the intended information as quick as possible. This kind of information is known as a FAQ (frequently asked questions), but can also be called "Help Desk" or "Tips and Tricks". A good FAQ should allow students to go to the immediate question (thus saving time) and receive a consistent answer.

A FAQ needs to guide and inform the student. Here are five tips to creating an effective FAQ:

- Find current problems that students are facing and re-frame these questions as your headings.
- Ensure that questions have a specific focus (write in second person, not third or first).
- Make the tone engaging, but don't sound like a salesperson.
- Arrange alphabetically and be consistent with your style (format, highlighting, bullets) so the headings are easily scanned.
- Segment the FAQ by audience or type of question

The FAQ might cover a range of different problems, including:

- Academic honesty;
- Accommodation for differently abled students;
- Attendance;
- Confidentiality;
- Conditions of course media use;
- Disruptive behaviour;
- Login or Sign in;
- Participation;
- Privacy;
- Policy for missed tests;
- Policy for late work; and
- Policy for absences.

To try: Time and schedules

One of the more complex challenges in a further education setting is managing the many competing and shifting priorities. A "course schedule" or "course calendar" is a staple element of any course.

At the very least, the course schedule allows students to identify important deadlines ahead of time. Students use them to see when they should arrive in the venue (lecture hall, classroom or lab) and how long the scheduled session will take. Students combine multiple course schedules to create a consolidated view of all their work. They can quickly see what they are about to learn, the scope of work expected and time commitment.

Students' time management skills vary, and scheduling can become an acute issue in a hybrid course where online activities are required to be completed between the face-to-face classes. In the hybrid setting, especially when learning behind a screen, there is a greater need to make course-related events apparent to all members of a course. Hybrid students have conflicting priorities (school, family, children, work) and need to plan their time. Many undergraduate students, away from home for the first time and in the early stages of becoming a self-directed student, struggle.

A course calendar or schedule should at least indicate lecturer availability; due dates for activities, such as quizzes, assignment dates, dates and times for face-to-face sessions; and (if you are going to meet synchronously) online meeting times.

- Be **explicit about the time** commitment for each online course related event.
- If the course event occurs online, **remember time zones** when identifying time for the online and/or in-person event.
- **Create a course map** that illustrates a timeline of online and offline content, interaction, and assessment elements required each week in your course.
- Check to see if **non-marked items with due dates** appear in the LMS calendar.
- **Describe the relationship** between online activities and in-class activities.
- **Use iCal files** (the standard internet calendar format) to create and share electronic calendars.
- Take steps to **encourage students to import the iCal file** into their own diaries so that these events automatically appear in their own calendar.
- **Populate the clickUP course calendar** to schedule important dates for your module. The clickUP calendar displays a consolidated view of all institution, course, and personal calendar events to students. Common entries include upcoming tests, due dates for assignments, or special lectures. clickUP course items with due dates appear automatically in the clickUP calendar. Remember to add non-graded items manually to ensure students see them.

Example 1

Course schedule: (Course number and name)
Term:
Section: (number)
Course dates:

Module	Dates	Week	Assessments	Weight	Due date

Example 2

Course calendar
(Course number and name)

Session	Start date	End date	Session title	Primary readings	Important dates
Session 1	8-28-2003	9-4-2003	Course Orientation, Introduction to Informatics	EN: C12 P267-281 SRF: C1 P5-11	
Session 2	9-4-2003	9-11-2003	Processes, Resources, Connectivity	EN: C1 P3-28; EN: C2 P29-48	

To do: Homepage detail

Having read the panel about course administration you might want to consider your course home page. Use the following checklist to decide whether you will provide the following detailed course information, either as a separate PDF or a separate page off the welcome page.

- ☐ Course title, number, code, credits, prerequisites
- ☐ Course outcomes
- ☐ Course description
- ☐ Course outline
- ☐ Course pacing within course time frame is provided on the calendar
- ☐ Schedule of class topics and assignments (including deliverables, due dates, instructions for submitting)
- ☐ Standard marking policy
- ☐ Course facilitator name, telephone, e-mail
- ☐ Regularly scheduled office hours
- ☐ Preferred methods to contact the course facilitator
- ☐ Hardware requirements (connection speed, hardware, software, plugins)
- ☐ Software skills with links to online tutorials
- ☐ Course expectations, including participation
- ☐ Course policies clearly identified regarding plagiarism, test taking, late work, copyright laws, and confidentiality with links to policies
- ☐ Information on support services
- ☐ Information on disability services
- ☐ Comprehensive list of necessary materials is provided with information on how to obtain materials.

Panel 7: Design

The "unintentionally excluded" student

"Click where"

We've seen the frustration of students whose learning experience is limited or marred by factors that are built into the materials or the course. We acknowledge that a range of issues (simplicity, ease of use, aesthetics, error recovery, etc.) affect their learning experience. We think that with common principles and proactive design, both usability and accessibility may be improved so that all students can access learning resources and learn in a satisfactory manner.

Voice 1

We've got a beautiful campus, well-equipped library, computer labs, free Wi-Fi. The architecture, buildings and spaces contribute towards a suitable learning environment. We should focus on our strength, the "residential" on-campus student who attends lectures, studies in the library, and engages in the lab or the tutorial. We think that student learning is better when it happens face-to-face. The quality of their educational experiences is compromised by their remote location.

Voice 2

I try to begin with the assumption that all students' learning landscape is uneven and not as level as mine. I ask myself, how can my course materials be designed for all? Especially since many students' studies are mediated by mobile devices. I realise that institutional rhetoric about "excellence" requires that the needs of ALL students be considered. Ongoing attention is required to diffuse good practices right through out the diverse student body.

Finding your way around

We've seen course packs written with inappropriate font faces, confusing layout, clashing colour schemes, and much text squeezed into a small space. We know students who've sat squinting in the back of the lecture hall, unable to view or comprehend PowerPoint presentations. We've downloaded PDF journal articles on our phone screen and had to scroll backwards and forwards every line. Or followed instructions, clicked on a link, and then got distracted by multiple browser tabs.

Analogue materials have commonly accepted conventions that are applied to make them accessible, to help the reader find their way around. Books have a preface and an index, are divided by chapters, have page numbers, importance is denoted by different sized headings with different weights. These conventions have developed over centuries of book production and help us understand the hierarchical relationships between elements.

Digital materials also require conventions to guide the reader through their design. For example, the Web Content Accessibility Guidelines (WCAG) provides a single set of shared guidelines for web content accessibility. Each of these guidelines has testable criteria. Lecturers might think about using a similar set of conventions, such as Universal Design (UD) in their hybrid courses. Those who share these principles and adopt its guidelines will contribute towards designing a learning environment that is beneficial to the widest range of students, including those with disabilities, older users or who cannot afford heavy data costs.

To begin: The humble hyperlink

A hyperlink, web link or simply a link can be found on a webpage or document. When activated, the link redirects the reader to another location, such as a new web page. These redirect statements allow the reader to choose their own path to follow. By clicking or tapping on a highlighted word or image on the screen, they are "transported" to a new place.

The hyperlink is at the heart of digital learning, and it comes in different forms. Instead of using "click here", think of a meaningful, but brief hyperlink that:

- provides some information when read out of context;
- explains what the link offers;
- avoids talk about mechanics.

It's intended to call a user to perform an "action". But "click here" can be meaningless when there are lots of hyperlinks included in a page. "Click" alludes to the mechanics of a mouse. Not all students are using a mouse or other "clicking" devices to navigate the links displayed on your course pages. Many are on a touch screen. "Here" is irrelevant for students using assistive devices, such as screen readers. Links need to clearly explain where they are taking users, and should be described by using concrete nouns or action verbs.

For example, instead of "click here" to create a link to a reading, the hyperlink can be assigned directly to the words *"download chapter two"*.

When creating a hyperlink, use action verbs to reinforce the message that students' online actions are a part of their learning pathway. *"Download, read and summarise chapter two in your accountancy textbook"* provides more information and more clearly directs them to an action required.

Links can be accompanied by hidden text that describes the topic or purpose of the link. When screen readers are used, the hidden text describes the purpose of the link on a the page. As such, the hidden link text must describe the content of the link when taken out of context for the surrounding paragraph.

Instead of using "click here", think of a meaningful, but brief hyperlink that:

- provides some information when read out of context;
- explains what the link offers;
- avoids talk about mechanics.

Embedding resources within a page

You will have noticed that for some sites, it is unnecessary to click on a hyperlink to jump to another resource and load it as a separate page. This is because the resources are embedded in the page. As a course designer, you might not want students to go elsewhere. Resources (video, audio, PDF etc) can be embedded within a page. With an <iframe> tag, video (and other kinds of media) can be incorporated into a course page and brings interest and movement to a static page.

To consider: Universal Instructional Design

When designing courses, technologies or services, the designer usually targets the "average" user, and then additional accommodations for differently abled students are added subsequently. Universal Instructional Design (UID) takes a different approach to the many variables facing the course designer.

UID places high value on diversity and inclusiveness. Under this philosophy, designers work from a set of seven inclusive principles that consider the design of products and environments to be usable to the greatest extent by people from all ages and abilities.

Table 18: The seven principles of UID and how they could be unpacked in a hybrid learning setting.

Universal instructional design principles	Application of UID
1. Equitable use	All students should be able to participate fully in their classes and be given equal opportunity to meet the learning outcomes. Print materials that are posted online should be useful to and accessible by a larger, more diverse set of students. Instead of posting a scanned image of an article, which can only be used by sighted readers, locate the original document and link to this work. If the print material is unavailable in a digital form, then digitise the resource, but ensure that the format is accessible. For example, convert the document using optimal character recognition (OCR) and post this version of the chapter. A student can then choose to read the document or listen to it being read by a screen reader.
2. Flexibility in use	Inclusive teaching includes a diversity of teaching and learning strategies. Choice is key, and offering students variety or flexibility with the same format allows the student to experience the same content or contact in different ways. Methods of instruction, whether lectures, discussions, interviews, projects, case studies or others, do not have to be locked down to one format. A lecture could take place with a presentation outline. Discussions can be synchronous or asynchronous. Interviews can be heard or read. There are many ways of learning and constructing knowledge. With flexibility comes a host of different ways of interaction between students and the lecturer.
3. Simple and Intuitive	Eliminating unnecessary complexity in the materials that students use is important. Poorly designed textbooks affect ease of access and use. The resources that are selected must be straightforward and consistent. For example, check to see whether the webpage that you are about to link to is responsive to changes in screen width. If it is, then the site is probably mobile friendly and should render well on a variety of devices, window or screen sizes. You should notice that the fonts, images and other elements scale according to the width of the screen and that other techniques (hidden menus, icons instead of titles) are deployed to ensure that the interface remains clear and intuitive.
4. Perceptible information	Students differ in the ways they perceive and comprehend information that is presented to them. Think about how to maximise the "legibility" of essential information. This does not only apply to font size in a presentation. Providing options for representation could include contrasts in colour, brightness and texture. If using important diagrams, make sure that the hidden alt text effectively communicates all necessary information about the diagram to the user. Although the student may not be able to see the image, they can still understand the meaning as conveyed through alternative text.
5. Tolerance for error	Students come to class with different levels of experience and resources and there isn't necessarily a set of core skills. If the design of the learning environment offers support for memory, generalisation and transfer, and minimises the adverse consequences of accidental or unintended actions, then students may access prior learning and transfer and apply what they learned into a new context. Think about using checklists, graphic organisers, concept and mind maps. If there are opportunities for review and practice, then the focus shifts from avoiding error towards growth and development.
6. Low physical effort	Maximum efforts must be focussed on learning activities or achieving learning outcomes. Not on positioning a mouse to a desired target, repetitive cut and paste actions or sustained physical effort that taxes one's body. This principle advocates for a design that encourages physical, onscreen and mental efficiencies and minimises fatigue. Minimise the amount of clicking, use keyboard short cuts, make sure that reading materials can be accessed remotely and reduce unnecessary journeys across campus to access the library. See if you can assist with reducing the cognitive load that goes into decoding tasks.
7. Size and pace for approach and use	Think beyond your own screen and consider the users' environment that they have available to them, both on and off campus. The interactions should be designed with consideration for the devices that students use. If the lecturer includes group work, is the venue suitable for such an approach? Or if small group activities are a part of off-campus learning, what measures have been taken to accommodate these meetings? On a desktop, the user uses a mouse to precisely point to a certain interaction. But on a touch screen, a small target area is much more difficult to select. Think also about barriers to entry, movement or activity and consider the needs of students who may have challenges.

Real world application of UID in environments and platforms benefits all, and not only those who are on the margins. This mindset affords all students:

- More opportunities to complete study tasks, because they can access the learning environment wherever they are; and
- Increased productivity from time required to complete tasks;
- Better online experience and improved student satisfaction and
- A positive reputation for the lecturer who is seen to understand the diverse needs of students.

To try: Sequence and flow

Content should be arranged in a logical sequence and allow the eye to flow through it without additional effort. Using an organising scheme, headings and subheadings, and lists to organise content allows students to clearly see how the main concepts are related.

An **explicit organising** scheme allows for students to find what they are looking for. Wurman (1989) suggests that there are five organisational schemes around which information can be arranged. He called these schemes the five hat racks. They are category (similarity relatedness), time (chronological sequence), location (geography or spatial references), writing system (alphabet) and continuum (magnitude, highest to lowest, best to worst).

Headings are visual references to indicate the hierarchy and structure of a document. They help the reader to identify the hierarchical structure of a document (e.g., sections, sub-sections). Headings provide a visual cue that lead sighted readers to quickly navigate through sections of a document, skimming through content until they find a section they are looking for.

When creating headings, many change the font, enlarge the size and select bold type, thus creating the impression of a heading. Rather than using visual cues for headings, make use of the underlying code or stylesheets within a program so that screen reader users can also benefit from the headings.

In a Microsoft Word document, use the style sheet to create your headings. In your LMS, also use the formatting styles available to create headings and subheadings. If you know how to use HTML, use the tags that denote the headings: ranked <h1> through <h6>.

This approach prevents screen readers from just "reading" through the text of a heading as if it were part of another paragraph of content and missing intended cues about structure and organisation.

When correct conventions are used, then screen reader users can navigate a page according to its headings. The "reader" can listen to a list of all headings, and skip to a desired heading and begin reading from that point.

Lists come in two forms i.e. ordered (1, 2, 3...) and unordered lists (bulleted).

These lists make it easy to show hierarchies of information in a similar way to using heading levels. It is important that lists are created using structure provided by the word processor or content editor you use, and that logical nesting is used. It's good practice not to use asterisks, custom symbols, or tabs to create lists.

See https://ecampusontario.pressbooks.pub/ for more.

To try: Text alternatives

Images, audio and video enriches the delivery of course materials by engaging the theatre of the mind. But video without the audio track, a guest lecture given by an international expert with an unfamiliar accent, or a pixelated image with insufficient detail are examples of how rich media can also act as a hindrance.

Audio

While audio is a rich medium that brings many advantages to the classroom, audio based resources pose particular challenges for those with a hearing disability. It is therefore important to include a text transcript to provide students with equivalent information to the audio content. If you use video with an audio track, it is advisable to add captions to the video to offer a visual alternative.

Images

If images are used, ALT (alternative) text or descriptive text needs to be provided. If images are used, ALT (alternative) text or descriptive text needs to be provided. Alt text is not immediately visible as it is written within the HTML code.

Alt text is designed to provide text explanations of images for students who are unable to see them:

1. Visually impaired students using screen readers will be able to read an Alt attribute to better understand an on-page image.
2. If an image cannot load, the Alt text will be displayed in place of the image.

To provide good Alt tags, remember to describe the image as specifically as possible. Keep to the following rules:

1. Keep it (relatively) short, within 125 characters so that the screen readers do not cut off some of the Alt text.
2. Don't include "image of," "picture of," etc. in your Alt text.
3. Do not provide a description to an image used for decorative purposes.

Sometimes, alternative text is enough. If a complex photograph, chart, or diagram is displayed, it might be necessary to include more descriptive text. This can be done in the text surrounding the image, or in the long description (longdesc) HTML attribute.

Video

It is more time consuming to provide text alternatives to video. But not all of the speech content should be included in the transcript. Here are some exceptions:

- If there is speech that is not relevant, it is usually best to indicate that it has been excluded from the transcript. For example: "A and B chatted while slides were loading."
- Don't be a slave to the video and include headings and sub-headings, especially when the transcript is long. When including these, put them in brackets to show that they were not part of the original audio. For example: [Introduction]; [Group Discussion]; [Case Study].
- Descriptions that convey emotions, mood, etc. are usually provided in brackets. For example: "Don't touch that! [shouted]."
- Descriptions of relevant non-speech audio: These are usually provided in brackets. For example: "[metal pipes crashing to concrete floor]." Background noise that isn't relevant can be left out.

The work you put into creating a text transcript for a video resource can be repurposed to provide the captions.

To do: Evaluate your own PowerPoint

We have all been exposed to a bad PowerPoint presentation. And even though we promise ourselves never to make the same mistakes, we can still fall into the trap of common design pitfalls.

By keeping in mind a few guidelines, you will prevent several recurring design errors. Use this example rubric to plan, develop and evaluate the PowerPoint presentations you use in class.

The Message

Organisation

- ☐ **Exemplary:** Information presented in logical, interesting sequence that audience can follow
- ☐ **Accomplished:** Information in logical sequence that audience can follow
- ☐ **Developing:** Difficult to follow presentation — concepts not presented in logical order
- ☐ **Novice:** Cannot understand presentation — no sequence of information

Text

- ☐ **Exemplary:** All slides present one idea and few supporting facts
- ☐ **Accomplished:** Most slides present one idea and few supporting facts
- ☐ **Developing:** Most slides present one idea but have too many words
- ☐ **Novice:** Most slides present multiple ideas and have too many words

Graphics

- ☐ **Exemplary:** Graphics explain and reinforce screen text and presentation, illustrate points which would normally require more words
- ☐ **Accomplished:** Graphics relate to text and presentation
- ☐ **Developing:** Occasionally use graphics that rarely support text and presentation
- ☐ **Novice:** Uses superfluous graphics or no graphics

Interactivity

- ☐ **Exemplary:** Interactivity to elicit feedback is included with regular intervals
- ☐ **Accomplished:** Some interactivity to elicit feedback is included
- ☐ **Developing:** Only one interactive activity is included
- ☐ **Novice:** No interactivity included

Support to working memory of student

- ☐ **Exemplary:** Pictures are provided, but not with text – lecturer talks about picture in class; no slides contain irrelevant music, sound effects, animations, background images
- ☐ **Accomplished:** Pictures are provided, but not with text – lecturer talks about picture in class; Some slides contain irrelevant music/ sound effects, animations, background images
- ☐ **Developing:** Pictures are provided, with text; many slides contain irrelevant music/sound effects, animations, background images
- ☐ **Novice:** Pictures are provided, with text; most slides contain irrelevant music, sound effects, animations, background images

Technical aspects

Grammar, punctuation, capitalisation and spelling, citation

- ☐ **Exemplary:** No errors in grammar, punctuation, capitalisation and spelling, citation
- ☐ **Accomplished:** Few errors in grammar, punctuation, capitalisation and spelling, citation
- ☐ **Developing:** Some errors in grammar, punctuation, capitalisation and spelling, citation
- ☐ **Novice:** Many errors in grammar, punctuation, capitalisation and spelling, no citations

Screen design

- ☐ **Exemplary:** Includes a variety of graphics, text, and animation that exhibits a sense of wholeness
- ☐ **Accomplished:** Includes a variety of graphics, text, and animation
- ☐ **Developing:** Includes combinations of graphics and text
- ☐ **Novice:** Either confusing or cluttered, barren or stark

Slide background

- ☐ **Exemplary:** Backgrounds helps to make text and other graphics stand out
- ☐ **Accomplished:** Background does not detract from text/other graphics
- ☐ **Developing:** Background makes it somewhat difficult to see text/other graphics
- ☐ **Novice:** Background makes it very difficult to see text or other graphics.

Font

- ☐ **Exemplary:** Font on all slides are large enough to be read at a distance, has a high contrast to the background, maximum two colours used
- ☐ **Accomplished:** Font on most slides are large enough to be read at a distance, has acceptable contrast to the background, three colours used
- ☐ **Developing:** Font on most slides too small to be read at a distance, has very low contrast to the background, more than three colours used
- ☐ **Novice:** Font on all slides too small to be read at a distance, has very low contrast to the background, more than three colours used

Text organisation

- ☐ **Exemplary:** Short phrases, in short bulleted lists (no more than six bullets per slide and six words per bullet) throughout the slideshow. Bulk of message written in "Notes" area of all slides
- ☐ **Accomplished:** Long phrases in short bulleted lists on most slides. Portions of message written in "Notes" area of most slides
- ☐ **Developing:** Long phrases in long bulleted lists on many slides. Nothing written in "Notes" area of slides
- ☐ **Novice:** Full paragraphs on all/most slides. Nothing written in "Notes" area of slides

Size of PowerPoint distributed online

- ☐ **Exemplary:** Large PowerPoint was split into smaller PowerPoints, according to a logical sequence that the audience can follow. Provided in an MP4 format after recording to make it available across platforms
- ☐ **Accomplished:** Large PowerPoint was split into smaller PowerPoints without considering logical sequencing. Provided in an MP4 format after recording to make it available across platforms
- ☐ **Developing:** Large PowerPoint was not split into smaller PowerPoints. Provided in any video format, will not necessarily play on all platforms
- ☐ **Novice:** Large PowerPoint was not split into smaller PowerPoints. Downloading/viewing the file will incur high costs for audience. Provided in PPT format

Panel 8: Support Strategies

The "at risk" student

"I do not feel as if I belong."

We have noted that students are not equally prepared for tertiary studies. We recognise the diversity of student experiences within our classes and accept the argument that "access without support is not opportunity ". We know that technology does not have all the answers. We are working together on establishing a set of norms where receiving support is welcome and ongoing. We think that technology offers the means toproactively consider the needs of all students and offer necessary support to accomplish academic goals.

Voice 1

Students complain about the cost of data, that they didn't understand the instructions, that they didn't have time, no training was given, or that the tech failed at the crucial moment. Students need to learn to know that nothing comes served up on a plate and they need to persevere, ask for help, teach themselves. They need to stop pointing fingers and take responsibility.

Voice 2

A hybrid class is not only about venues, media mixtures or different types of teaching. It's also about connections and creating a sense of belonging in a class, no matter where they are located. Within a hybrid course it is possible to hear (anonymous) student feedback, identify problems earlier, and offer remediation. We need to find ways to use technologies to break down the one size fits all approach to education that engenders a sense of isolation or marginalisation.

One size fits all?

We celebrate the considered use, adoption and application of technologies by lecturers in a course setting. We know that many are asking critical questions because they want to avoid easy answers and the many unintended consequences that result from a "one size fits all" approach to technology. We're not advocating for the use of "nannyware" or labelling (and thereby demotivating students). We are asking how can an institution set up systems to monitor risk, deploy nudges or offer differentiated support and then make it possible for lecturers and students to work in conjunction with systems to address vexing support challenges.

Beyond access

We can be slow to appreciate the differences between the virtual student experience and on campus life. To recognise how our academic and non academic support strategies favour face to face encounters. On campus students can enter a learning environment immediately after passing through the security gate. They access the help desk during office hours, they visit the drop-in centre in person (instead of online) and sign up for a workshop on the notice board located outside the seminar room.

Off campus students are expected to remember multiple passwords, change proxy settings or install a VPN, request specific permissions from administrators of IT services. When they are out of sight, they are often out of mind. They have to work far harder to scale the high virtual campus walls to locate support.

If we want to promote inclusive student support to off campus students, then we need to go beyond making sure that students have access to the online components of a hybrid class. We need to enquire how data, information and machine learning might be leveraged to offer sustained advice and support. If this data is used ethically and with consent, then this information can pro-actively contribute towards the intellectual, social and emotional support services that is available to students on and off campus. And ensure that an appropriate and ongoing set of academic and non academic support services are available to all.

To begin: Bring your own device

Widespread ownership of mobile devices among students mean that many students will use them to connect, read, access and locate more data and information, complete tasks and support other personal learning needs. Their own (or perhaps shared) devices are a central pivot around which they organise their lives. Sometimes these devices are welcomed in class, other times they are a distraction.

Bring Your Own Device (BYOD)[1] is not about tech parity. Students' devices differ in terms of hardware specifications, software, connectivity, carriage services or other technology applications. BYOD is about supporting student's current digital skills and developing greater fluency, so that greater agency might develop. BYOD also acknowledges the importance of giving priority to student choice and their voice. If it is used within the constraints of the university's acceptable use policy (AUP) and the users agree to be accountable to the norms of a department/course/lecturer. BYOD offers new flexibilities to the hybrid course developer.

Recommendations regarding device specifications, software and accessories should not be prescribed globally to all students. If there are minimum expectations of BYOD devices, then these should be negotiated in class.

Pre-requisite skills

If BYOD use is encouraged, then a common skill set should not be assumed across the class. It needs to be ascertained if students can:

- Install apps/programmes on their device (if shared with others, such as those in a library or computer lab, it will typically not allow you to install software);
- Save files (memory stick hard drive/ to the cloud) and retrieve them later;
- Perform a web search and use a web browser to navigate various websites;
- Troubleshoot technology prior to participating in any new activities;
- Configure their device to receive important notifications;
- Access their student email address or change their email address;
- Enter important dates into their calendar and remind them when deadlines are approaching.

To try: Minimum levels

Technologies have always promised quicker routes to access education. Navigating these roads, for some, is easy. The pathways are familiar and well worn. For others, the technology is daunting and students feel inadequate for the journey. Still for others, technology is the only viable trail available.

No matter what the experience of the route, it's important to allow students to self- identify where they are on route.

What level are you at?

- **Unfamiliar** – I do not use technology much and probably need some assistance
- **Competent** - I know about the basics, but I'm not very advanced. I'm not always aware of what is going on, but can work it out
- **Comfortable** – I can use quite a number of different tools and packages. I use technology routinely and am aware of how things work
- **Confident** – I am very familiar with these technologies and can resolve most problems or issues. I also help others and solve their tech problems.

It doesn't matter what level you are at, we believe that anyone who uses technology to support their work, their study, or other aspects of living in a digital age can move forward. Please use the following rubric to identify where you are at present in terms of access, experience and trouble shooting skills.

Table 19: Technology level.

Access to computers and the internet	Experience with software application	Troubleshooting skills
If asked to check for emails on a regular basis, then I would struggle, as I have inconsistent access to a computer with internet connection	If asked to submit a typed out document, I would battle because I find it difficult to type quickly since I have very little experience with word processing	If there is a technical problem (e.g. frozen screen), then I expect tech support to address the issue
If required to visit a selection of websites, then it would take me additional time as I have restricted access to a computer and the speed of the internet service on this computer is limited by speed or cost	If asked to use an unfamiliar programme to complete a class task, then I would need some assisting with mastering the technology before getting around to completing the task	If there is a technical problem (e.g. cannot print) then I am able to troubleshoot such basic issues or ask my friends for assistance
I have consistent access to a computer and the internet service is satisfactory	I have a set of computer skills and sufficient experience using standard programmes	I am able to identify most technical issues on my computer and I know how to solve most of them
I have unrestricted access to a computer with high-speed service to the internet at home and at a convenient off campus location	I have excellent computer skills and significant experience with using software. I am also comfortable with teaching myself other technology tools and applications, such as a learning management system.	I actively seek out information about technical issues and am able to resolve my technical issues and am regularly asked to assist others

When enrolled in online, hybrid, partially online, and web-enhanced classes, you will be expected to have:

- A reliable Internet connection from which you can access emails and websites
- Individual and personal access to a computing device with internet connectivity
- Working knowledge of word processing, web browsers, file management
- An account (username and password) that allows you access to the LMS
- A friend or class mate who you can call on for assistance
- The help desk phone number or email address in your address book.

To try: Technical instructions

Technical guidelines can just be a list of minimum specifications. But they can also be practical and require a student to apply themselves to following a set of instructions.

Below are two practical assignments that can be set for students in the initial week of a course. If students can complete these assignments, then the lecturer can assume a certain level of competency .

Example 1: Files and folders

Much of the work that we do on a computer involves files and folders. Please open up your file manager and complete the following task

1. Create a folder entitled ASSIGNMENTS
2. Download the study guide file and look for information about ACADEMIC INTEGRITY
3. Copy and paste ACADEMIC INTEGRITY statements into a word processor
4. Save the file with the academic integrity information into the folder ASSIGNMENTS
5. Open and read the syllabus file and see how many assignments are due
6. Create a copy of the academic integrity file for each assignment due
7. Add the due date to each folder
8. Select a sequence of folders or files
9. Zip these files and upload them to the cloud
10. Share the link with your teacher

Example 2

To avoid frustrating delays with clickUP, you must have reasonably fast internet access and a well maintained and up to date computer.

ClickUP is compatible with most web browsers, but to be safe, please make sure that you are using a recently updated browser such as Firefox, Chrome or Opera. You will be expected to watch, listen or respond to different kinds of media. You will find it useful to have earphones to listen to multimedia elements without disturbing your neighbours. Before the course begins, we will work together to check whether the following technical requirements are met before you start this course:

- I have internet access and can access the clickUP.
- I have an appropriate computing device with an up to date browser with necessary plugins and software installed.
- I know what to do if I have a tech emergency.

At the beginning of the course

To access and participate in your course on clickUP, you will need to be registered as a student and know your student number (preferably memorised). If this is your first time on clickUP, please work through “How to access and use clickUP” document and the Online Student Orientation module. Instructions are available on the UP website. Navigate to the Student area and look for the “Self Help guides”.

How do I login to clickUP?

There are three ways to access clickUP. Follow the login instructions in the “How to access and use clickUP” document.

NOTE: Always remember to logout whenever you are done working.

What should I do if clickUP does not recognise my user name and password?

You can do two things:

1. Remember passwords are case sensitive
2. On the login screen to the UP portal you can create/change your password,
    a. If you are logging in for the first time, click on the New users link. The system will take you through the steps for creating security questions and to set up your password. Read the steps and information (on passwords and browsers) carefully.
    b. If you forgot your password, use the Lost (forgotten) password link to create a new one.
3. If the above two methods do not solve your problem, contact the Student Help Desk.

NOTE: Please change your password to something you can easily remember.

If things don't work as expected

Make sure that you are using the correct browser, e.g. Mozilla Firefox or Google Chrome (latest versions). Do NOT use Internet Explorer.

- **Pop-ups are enabled**
  Sometimes when you click on a link, clickUP should open a smaller pop-up window. But if pop-up blocking software or pop-up blocking features are enabled in your browser, then you won't be able to view these pop ups while using clickUP.

- **Cookies are enabled**
  ClickUP uses cookies to remember who you are when you move from page to page across the site. When you login, a cookie is created, when you log out or close the browser this cookie is destroyed.

- **Java/script is optional**
  It is not necessary to have JavaScript enabled on clickUP.

In case of emergency

There are a range of events that are beyond your control, including an electricity outage, a stolen computer, a crashed course that is unexpectedly down, weak internet connections and computers infected by a virus.

It pays to take precautions:

- When composing a considered response for your blog, social media, or discussion board it might be good idea to compose these thoughts first in a word processing software, save it, and then copy and paste your work online.
- Keep your files organised in folders by class, and within those folders by units of the class. Your work will quickly pile up; establishing a system for easily locating materials you've produced for your coursework is immensely valuable.
- Regularly back up your files to an external drive or cloud storage.
- If you are using technologies for the first time, schedule additional time to become familiar with those technologies.

Where should I go to for further assistance?

Please contact us by email at [INSERT EMAIL ADDRESS] if you are unfamiliar with clickUP, different browsers or computers, and don't know how to install or upgrade essential software which is listed in your site's technical requirements.

To consider: Data informed advice and support

Giving students access to information about their own engagement and performance is a useful way to "nudge" them to increase their time on task. Digital nudges are not instructions. They are subtle reminders to help students who might be at risk.

Advisors

The combination of student data with technology should reduce advisors' administrative workload and give them extra tools to help students choose majors and careers, find support in times of need, and graduate in a timely manner with a plan for the future.

Many are beginning to think about how ICT can be leveraged to offer better support for students. When ICT is used in conjunction with student data, then analytics tools may be utilised to strategically target particular students who requires specific assistance.

Technology is not very good with assisting students to make complex decisions. Nor is it very good at building students' metacognitive skills. Effective advisors are holistic and can address academic (writing skills, career planning) and non-academic (tutoring, mental health) issues. Such student support requires that technology and advisors work in tandem to identify and pursue academic and life goals.

The acronym given by Columbia's CCRC (community college research centre) for this kind of support is SSiPP.

It stands for:

- **Sustained** – support is ongoing, rather than using an "inoculation" approach
- **Strategic** – services are differentiated to maximise capacity
- **Integrated** – services are not viewed as stand-alone interventions
- **Proactive** – services are an integral part of all students' experiences
- **Personalised** – students receive the support they need when they need it, from an individual who knows them well

Lecturers

Data-driven educational decision-making assist lecturers to move from a "gut instinct" to a systematic approach towards teaching and learning.

Lecturers may consider various options available:

- The data generated by student input into audience response systems (clickers) within a classroom provides immediate feedback to lecturers on students' understanding of a piece of work and allows the lecturer to instantly address wrong conceptions.
- If objective question types are used within clickUP, system generated analysis of each question and distractors may assist in creating better assessment questions.
- The use of student marks to analyse the questions where students struggled. This information is then used to inform subject topics that should be to addressed differently or that need additional remedial material.
- Displaying students' marks within clickUP keep them up to date with their progress, even if a "progress mark" is not used.
- The Grade Center provides a central space where all lecturers within the same module can manage the marks of the students and send emails to students to "nudge" them to better performance or congratulate them on good performance. This quick way of communication motivates students as they feel less "like a number" in the large groups.
- The Performance Dashboard and Course Analytics provide a central interface where lecturers can monitor the students' access, interaction and submissions in their clickUP courses.
- The Retention Center allows lecturers to set up alerts for students who missed deadlines, do not interact, perform poorly, or do not access the course regularly.

To do: Using UID to design support

By being proactive and creating environments that are usable by everyone, course designers can both talk and show that they are inclusive and have considered the "marginalised" or "at risk" student.

All students should be able to rely on the university to offer necessary support to accomplish academic goals. By using Universal Instructional Design (UID) principles to anticipate and plan for the diverse needs of students, the overall learning experience will better support the needs of all who are enrolled.

Equitable use

Design of online course materials considers accessibility for differently abled students

- ☐ Statement inviting differently abled students to meet with the lecturer published at the start of the semester
- ☐ Lecture is aware of processes and resources for disability related accommodation
- ☐ Electronic resources meet accessibility criteria (http://www.w3.org/WAI/WCAG20/quickref)
- ☐ Online reading materials are tested using screen-reading software such as JAWS (http://www.freedomscientific.com/jaws-hq.asp)
- ☐ Software that is prescribed is compatible with assistive technology

Flexibility in use

Design accommodates individual preferences and abilities; is inclusive

- ☐ Study materials are available in different formats (e.g. digital equivalents of hard copy handouts)
- ☐ Resources are designed so they can be reused in a number of settings (e.g., in class, online, groups)
- ☐ Information is presented using a variety of media inside and outside of class (e.g., verbal, text and images, audio, video, etc.)
- ☐ Lecturer is familiar with the availability and suitability of different file formats
- ☐ Lecturer is familiar with process by which materials can be generated and easily converted into multiple formats
- ☐ Lecturer can provide additional information about file size of the materials in parenthesis

Simple and intuitive

Design eliminates unnecessary complexity and considers the measures to ensure that the interface remains clear and intuitive

- ☐ Pro-active technology support is offered
- ☐ Third party ebooks, CDs or web-based tutorials are checked for proper navigation and user feedback;
- ☐ Usability testing across different devices and among differently abled students is conducted
- ☐ Lecturer includes mechanisms that promote peer assistance
- ☐ Lecturer uses "ALT" (alternate text) tags to offer a textual description to accompany key diagrams or images

Perceptible information

Design considers how students perceive and comprehend information that is presented regardless of ambient conditions

- ☐ Presentations are legible (minimum 20 pt. font, with a high contrast colour scheme)
- ☐ Text and diagrams are sufficiently far from edges of slide to make organisation of information clear through "white" or empty space
- ☐ Background that does not interfere with diagrams or text
- ☐ Diagrams focus on critical elements, not excessive in detail,
- ☐ Lecturer employs "excerpt" diagrams to identify key components
- ☐ Lecturer takes measures are taken that address readability (glare, inadequate lighting, font face etc) are considered.

Tolerance for error

Design minimises the adverse consequences of accidental or unintended actions

- ☐ If student work is uploaded in error, then the lecturer offers the opportunity (within a reasonable time period) to rectify a mistake
- ☐ If forms are used, then form validation is used to check that key fields are completed
- ☐ Lecturer allows for ample time for submission of online work in case of system malfunction
- ☐ "Buffers" are built into the schedule to address unexpected contingencies
- ☐ Checklists, graphic organisers and mind maps are included as mechanisms to reduce cognitive load

Low physical effort

Design is used to minimises fatigue and allow for maximum attention to learning

- ☐ The amount of clicking, scrolling, or hunting for information (maximum of three clicks) is reduced
- ☐ Students are encouraged to work in pairs if the work requires students to physically exert themselves
- ☐ When library services are included, a range of mechanisms that allow students to access from on and off campus locations thereby reducing the need for travel are introduced
- ☐ Assignments minimise non-essential tasks (e.g., learning irrelevant software just to access information)

Size and space for approach and use

Design considers reach, manipulation and use, regardless of body size, posture or mobility

- ☐ High contrast large print signage is used for wayfinding
- ☐ Emergency instructions are clear and visible
- ☐ Means of access to resources (computers, printed materials and electronic) are considered
- ☐ If transportation is necessary, then accessible transportation is available

UID is not as developed as the Web Content Accessibility Guidelines (WCAG) and the points collected above are suggestions for lecturers and course developers to enact the principles. Many ideas inspired by the work of the UID Project at the University of Guelph.

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