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Reflective frameworks for the delivery of teaching in multiple modes

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Introduction

This set of reflective frameworks was assembled to help early-career academic colleagues who found themselves having to rethink their approach to teaching in the midst of a crisis, most particularly in relation to switching between synchronous and asynchronous and 'live' and virtual, online modes of delivery. It is deliberately brief and offers material for reflection and as such, it is best used in conversation with experienced colleagues. Nevertheless, the frameworks are arranged in a logical sequence for those who would like to read it through. With that in mind, the first section on learning outcomes and assessments – while quite simple and perhaps obvious – is useful in setting up a common baseline for conversation around the material that follows.

It is important to note that this material was designed to be quick to engage with and practically oriented. For that reason, it does not make explicit connections to formal pedagogic theory. Those with an interest in the supporting theories, which can also help to suggest further alternative approaches and enhancements, are directed to the suggestions for further reading.

Learning outcomes and assessments

These points are very basic and some may wish to skip them; but they are provided here to help establish a shared baseline for conversation about the material that follows.

Learning outcomes

The learning outcomes for a given module / class should *not* be dependent on the mode of teaching. However, there is some need to think about how the outcomes are achieved in different ways in the alternative modes. The first step is to be clear about the mix of outcomes that are included. Most modules / classes lead to two kinds of learning outcome:

- *Knowledge outcomes.* The things that a student should *know* at the end of the module / class. For example, you would expect a student learning to drive to know the rules of the road, the meaning of different road signs, and so on. In our classes, such outcomes reflect the progress in mastering disciplinary knowledge that is appropriate for the level of study.
- *Skills (or competency) outcomes.* The things that students should *be able to do* at the end of the module / class. For example, a student learning to drive needs to be able to steer, position the car safely in traffic, maintain a controlled speed, park safely... and so on. In our classes, skills outcomes include those we wish the student to leave with as a graduate (for example, the ability to engage in critical, evidence-based argument) or study competencies that are important for the next stage of their learning (for example, the ability to write an essay).

Understanding these differences helps to focus teaching methods. Most importantly:

- If the knowledge outcomes include complex and difficult conceptual material (perhaps threshold concepts), there is a need for explication / exploration of the concepts, in discussion and through the use of accessible examples.
- If the skills outcomes are difficult to master, there is a need for scaffolded practice in which students build up their skills with structured support.

Assessments

How the module / class is to be assessed depends on the combination of learning outcomes that we are trying to capture. The more the outcomes are solely oriented towards knowledge and understanding, the more likely it is that simpler forms such as examinations and essays (where application of the knowledge is key) are appropriate. The more the outcomes are oriented towards skills, the more you need a different kind of assessment that allows the student to demonstrate it – for example projects, groupwork or even practical examinations (remember that driving test? Or laboratory-based assessments?). For live on-campus teaching the full range of possibilities is normally within reach.

In modes other than live, on-campus teaching, only examinations cause concern. In such cases, it is helpful to ask:

- Does the available technology provide for timed online examinations? Most learning management systems (LMS) do provide this.
- Proctoring software is contentious and invasive. Can you make your examination work in an open book format? Or, if the material is entry-level, an MCQ?
- Do you really need to use an examination format at all?

How learning outcomes shape delivery

With the learning outcomes in hand, the tutor should be able to reflect on:

- The difficulty of reaching the desired skills outcomes. Is this something that is within reach of the students, or something which will need to have scaffolding in place to help the students reach an appropriate competency standard?
- The complexity of the conceptual knowledge that students need to acquire. Does it fit within / alongside existing frameworks of understanding, or are there concepts that require explication and critical reflection before students are able to understand and apply them?

Of course, different parts of a module / class may yield different answers to these questions.

The figure below provides a way of reflecting on the skills and knowledge outcomes for all or part of a module / class, in order to decide what should be in the teaching and learning mix.

Conceptual framework

Skill difficulty	High	<p>Scaffolded learning through</p> <ul style="list-style-type: none"> ▪ Example (lecture/lab/video) ▪ Guided practise (live / simulation) ▪ Low-risk trials <p>Formative evaluation: observation in guidance / trials. Summative evaluation: coursework.</p>	<p>Scaffolded learning through</p> <ul style="list-style-type: none"> ▪ Practical and critical workshop ▪ Multiple examples and formats ▪ Guided practise (live / simulation) ▪ Low-risk trials <p>Formative evaluation: observation in guidance / trials. Summative evaluation: coursework.</p>
	Low	<p>Independent learning through</p> <ul style="list-style-type: none"> ▪ (Guided) reading ▪ Watching recorded material ▪ Automated online lessons <p>Formative evaluation: self-administered MCQs and/or problem and answer sets. Summative evaluation: MCQ.</p>	<p>Guided learning through</p> <ul style="list-style-type: none"> ▪ Tutorials (live / online / board) ▪ Discussion and reflection ▪ Application trials <p>Formative evaluation through tutorial contributions. Summative evaluation: coursework / examination.</p>
		Low	High
		Knowledge complexity	

In the two figures that follow below, the general framework is explicated and applied to synchronous (live and virtual) and asynchronous teaching modes. These are offered as quick summaries and should be read as illustrative examples rather than prescriptions.

Application to synchronous delivery settings

Skill difficulty	High	<p>Lectures and workshops – concepts are easy to introduce and lectures work well (as would guided reading); workshop settings provide practise to develop the skill(s) (of application). For virtual delivery, the groupwork processes and tools are key.</p>	<p>Flipped classrooms / workshops – structured readings and/or online recordings applying complex concept(s); main focus is groupwork to grapple with (threshold) concepts and the skills (of application). For virtual delivery, the groupwork processes and tools are key.</p>
	Low	<p>Lectures and independent guided reading – this is basic foundational material that does not require completion in application, so the simplest methods are fine For virtual delivery, plan how you can provide checkpoints using (e.g.) chat, voting tools.</p>	<p>Small-group tutorials – focus on developing understanding of (threshold) concepts through dialogic approaches and existing skills (ensure students have these...) For virtual delivery, plan how you can enable participation, the sharing of material and student leadership.</p>
		Low	High
Knowledge complexity			

Application to asynchronous delivery settings

Skill difficulty	High	<p>Recorded lectures and collaborative process – concepts are easy to introduce and lectures work well (as would guided reading); collaborative process settings provide practise to develop the skill(s) (of application) on asynchronous media.</p>	<p>Collaborative process – structured guided readings and/or online recordings give multiple examples of complex concept(s), and the majority of the time is spent in groupwork to grapple with the (threshold) concepts and application skills on asynchronous media.</p>
	Low	<p>Independent guided reading – this is basic foundational material that does not require completion in application, so the simplest methods are fine. A clear study guide and self-assessment processes are important.</p>	<p>Small-group discussion boards – focus on developing understanding of (threshold) concepts through dialogic approaches and existing skills (making sure that students have these...) A clear study guide and lecturer participation are important.</p>
		Low	High
Knowledge complexity			

Delivery alternatives in different modes

The tables provided on the following three pages give some initial ideas about how to go forward from the selection of overall approach, as discussed above, to thinking about how typical teaching and learning contexts may be set up within a particular mode. As such, the tables provide an *initial* framework for how to offer the most usual forms of teaching within each mode. They cover how live synchronous, virtual (online) synchronous and virtual (online) asynchronous teaching modes employ:

- Lectures
- Tutorials and equivalent alternatives
- Workshops (as an example of interactive / flipped / collaborative process-based teaching and learning)

As with earlier material, these are frameworks for ‘thinking around’ and are not intended to be prescriptive or comprehensive.

Overall, the approach and package of delivery alternatives needs to fit the learning outcomes, lead students towards assessments that provide assurance of these outcomes and be pedagogically consistent. However, concerns about robustness and resilience may also have to be considered.

In situations that can be unpredictable and require rapid change, it may be most robust to confine live synchronous teaching (if this is the preferred mode) to lectures and adopt a ‘blended learning’ approach that uses online media and tools for the remaining elements of delivery and engagement. However, while online asynchronous learning can be effective and robust, it is considerably more effort to set up and has different pedagogical issues – so there is a balance to be struck in the management of risk.

Lectures

Delivery element	Live synchronous <i>Student groups</i>	Virtual synchronous <i>Student groups</i>	Virtual asynchronous <i>Individual students</i>
Lecture	Lecture on campus	Online lecture / presentation	Recorded lecture
<i>Set-up</i>	<ul style="list-style-type: none"> • Course outline / pre-work 	<ul style="list-style-type: none"> • Course outline / pre-work 	<ul style="list-style-type: none"> • Course guide – expectations for student activity before <i>and</i> during the ‘lecture’
<i>Duration</i>	<ul style="list-style-type: none"> • 1 – 2 hours 	<ul style="list-style-type: none"> • Up to 1 hour (shorter the better) 	<ul style="list-style-type: none"> • Up to 1 hour (shorter the better)
<i>Delivery: monitoring engagement</i>	<ul style="list-style-type: none"> • ‘Reading the room’ • Stop for questions • Poll methods 	<ul style="list-style-type: none"> • Moderated chat (e.g. Teams) • Stop for (signposted) questions • Poll methods 	<ul style="list-style-type: none"> • Analytics of student focus across lecture timeline • Chunk the lecture to make space for break activities <ul style="list-style-type: none"> • ‘Mini MCQ’ breaks between lecture chunks with links to learn more • Reflective breaks; e.g. student asked to identify an example, identify problems or note their puzzles in online text box
<i>Closing</i>	<ul style="list-style-type: none"> • Final questions • Signpost follow-on resources 	<ul style="list-style-type: none"> • Final questions (chat?) • Signpost follow-on resources 	<ul style="list-style-type: none"> • Signpost follow-on resources • Signpost lecturer time for response to reflective texts • Signpost sources of help (email / chat / online chat hours)
<i>Role in assessment</i>	<ul style="list-style-type: none"> • No 	<ul style="list-style-type: none"> • No 	<ul style="list-style-type: none"> • Option for activities to be low-stakes percentage of grade, but better as formative

Tutorials and equivalent alternatives

Delivery element	Live synchronous <i>Student groups</i>	Virtual synchronous <i>Student groups</i>	Virtual asynchronous <i>Individual students</i>
Tutorial	Tutorial in class	Online tutorial (MS Teams)	Collaborative discussion board
<i>Set-up</i>	<ul style="list-style-type: none"> • Course outline / pre-work 	<ul style="list-style-type: none"> • Course outline / pre-work 	<ul style="list-style-type: none"> • Course guide – expectations for student activity before <i>and</i> during the activity
<i>Duration</i>	<ul style="list-style-type: none"> • 1 – 2 hours 	<ul style="list-style-type: none"> • 1 – 2 hours 	<ul style="list-style-type: none"> • Several days – students will add to online discussion group
<i>Delivery: monitoring engagement</i>	<ul style="list-style-type: none"> • ‘Reading the room’ • Roles and turn-taking • Question / dialogue process 	<ul style="list-style-type: none"> • Roles and turn-taking • Question / dialogue process • Explore mix of verbal and chat methods 	<ul style="list-style-type: none"> • Decide in advance if/how to intervene on the discussion board • Plan check point for responsible student start-up activities (e.g. discussion opener) • Plan check points during the posting period
<i>Closing</i>	<ul style="list-style-type: none"> • Final questions • Summing up 	<ul style="list-style-type: none"> • Final questions (chat) • Summing up (chat) 	<ul style="list-style-type: none"> • Closing comments on the platform <ul style="list-style-type: none"> • Formative evaluation – highlight good contributions and opportunities for improvement in the next ‘round’ • Summative evaluation – contribution assessment at close of module / class
<i>Role in assessment</i>	<ul style="list-style-type: none"> • Possibly – ‘leading student(s)’ asked to open discussion, low percentage of final grade. 	<ul style="list-style-type: none"> • Possibly – ‘leading student(s)’ asked to open discussion, low percentage of final grade. 	<ul style="list-style-type: none"> • Yes – text contributions will form part of assessment, low percentage of final grade.

Workshops

Delivery element	Live synchronous <i>Student groups</i>	Virtual synchronous <i>Student groups</i>	Virtual asynchronous <i>Individual students</i>
Workshop	Groupwork in class	Group meetings and distributed tasks	Collaborative process
<i>Set-up</i>	<ul style="list-style-type: none"> • Course outline / pre-work • Intro (mini-lecture) per session 	<ul style="list-style-type: none"> • Course outline / guide • Recorded intro per session 	<ul style="list-style-type: none"> • Course guide • Recorded intro per session • Task workbook (step-by-step)
<i>Duration</i>	<ul style="list-style-type: none"> • 2-4 hours, and between formal sessions 	<ul style="list-style-type: none"> • Short group meetings (<1hr) • Tasks between meetings (>1hr) • Weekly 'rhythm' 	<ul style="list-style-type: none"> • Weekly 'rhythm' <ul style="list-style-type: none"> • Discussion boards / collaborative platform, email, optional online meetings • Building collaborative report, online presentation or other output • Tasks and roles follow workbook
<i>Delivery: monitoring engagement</i>	<ul style="list-style-type: none"> • 'Live guide' interactions / MBWA • Observation of groupwork • Questions about group ephemera / transitional material 	<ul style="list-style-type: none"> • 'Virtual tour' of online groups • Group reports on progress • Formative evaluation of weekly transitional material 	<ul style="list-style-type: none"> • Decide in advance how to intervene in the process • Group reports on progress • Formative evaluation of weekly workbook material
<i>Closing</i>	<ul style="list-style-type: none"> • Group formative or summative feedback on presentations • Group-wise and general feedback on presentations and/or group reports 	<ul style="list-style-type: none"> • Group reports for formative or summative feedback • Group-wise and general feedback on group reports 	<ul style="list-style-type: none"> • Group reports for formative feedback
<i>Role in assessment</i>	<ul style="list-style-type: none"> • Yes – the final group report / presentation is assessed (there may also be a reflective individual element) 	<ul style="list-style-type: none"> • Yes – the final group report is assessed (there may also be a reflective individual element) 	<ul style="list-style-type: none"> • Yes – the group report (minor percentage) and <i>individual workbooks</i> (major percentage) are assessed

Participation of educators and students in learning contexts

Having decided on the overall teaching and learning (mix of) approach(es) and the mode of delivery that is being adopted, it is useful to think about how educators and students make the educational contexts and processes come to life in an orderly way. It is important to ensure that there are clear expectations and norms, about presence and interaction, on both sides. With that in mind, in this section the participation of educators and students– in the context of synchronous live teaching, synchronous virtual teaching and in an asynchronous mode – is considered.

The participation of educators

Synchronous live teaching

- *Educator participation*

Normally this depends on the pedagogy – whether you are seeking to be a ‘sage on the stage’ or a ‘guide on the side’ – and will line up with that. A ‘sage’ is positioned mainly as a *content* expert, delivering definitive knowledge to students as part of normal learning processes and in response to questions. A ‘guide’ is positioned mainly as a *process* expert, directing students towards resources and leading them through interactive experiences that help them to focus independent study. Realistically, your approach to participation has to balance (i) the appropriate pedagogic stance (to deliver the learning objectives), with (ii) your own comfort zone in teaching and (iii) the time and resources available.

You should also reflect on whether there are any pastoral aspects to your participation and availability, and how and when you should signpost students to areas outside your capability or comfort zone. This can include understanding how to sensitively make the student aware of counselling and support services.

- *Student contact expectations*

This is not normally a complex issue – students will be informed of your normal points of contact in relation to lectures, small-group teaching sessions and office hours. You will need to be clear about:

- The patterns of engagement and interaction in the live sessions, including time at the end of the session for immediate questions in the group and individually.
- Email access and response times (one working day for some level of response is reasonable, anything shorter than that is a hostage to fortune).
- Use of online tools such as chat, discussion boards etc; they can be more efficient than email, especially if used within the LMS, (e.g. Moodle).
- Social media use, if you wish (being careful about what is shared on public platforms).
- How and when feedback on formative and summative assessments will be made available.

Synchronous virtual teaching

- *Educator participation*
The same considerations as for synchronous live teaching apply. In addition, use verbal and written messages to state and reinforce expectations because non-verbal cues are often missed in virtual teaching.
- *Student contact expectations*
Here the variation from live teaching will be if and how you have a 'see me before or after class' mechanism – can you use the closing minutes of your teaching slot for this, ensuring it is not recorded? You will still need to be clear about email, online tools and social media (as outlined above), and be sure to make the most of the LMS facilities.

Asynchronous virtual teaching

- *Educator participation*
Here you want to be a 'guide on the side' with the majority of student learning activities. Most questions about content should be addressed by a well-structured learning guide, FAQs and so on. However, you may want to introduce yourself online, perhaps through a form email for each student and/or the use of video.

There are particular advantages to the use of video. Using an introductory video is common practice in large online courses, and experience has shown that it may be possible to prepare a video that can be used for more than one class, which can save time without losing effectiveness. Some communication and recording software can also generate transcripts, so making a video introduction can help with the drafting of a written introduction at the same time. Whichever method you use, the aim is to help the students to have confidence in the academic who is leading the module / class.

- *Student contact expectations*
You will be focussing on email, online tools and social media (as outlined above), but in this case you want to limit one-to-one channels to avoid being overwhelmed. Other than formative and summative feedback, you will want to encourage the use of online tools so that you can respond to queries as a group; however, students should still have an email route for potentially personal enquiries.

The participation of students

Synchronous live teaching

- *Student participation*
Faculty should ensure that students are aware of:
 - Attendance that is essential for their learning, and how to 'catch up' if attendance is not possible.
 - If and how their participation feeds into assessment(s).
 - What their role in live sessions is, including their responsibilities for themselves and others (especially if groupwork is involved).
 - How disabilities and special learning needs are handled in and out of live sessions, if they need help in these areas – disability advisors should guide you.

- *Reachability*
Students need to ensure that faculty:
 - Are aware of any absences (planned or unplanned) and if any difficulty in arranging contact is likely.
 - If the student is unable to access email or any LMS communication media.

Synchronous virtual teaching

- *Student participation*
The same considerations as for synchronous live teaching apply. In addition, faculty need to ensure that students:
 - Make arrangements for engaging with peers for groupwork, where this is not automatically organised through the LMS or assignment technologies.
 - Ensure that they discuss what their expectations of each other are and have clear guidance on behavioural standards.
- *Reachability*
The same considerations as for synchronous live teaching apply. In addition, students also need to ensure that faculty:
 - Are aware of the location and time zone that students are studying from, where this is not the local time zone and not otherwise obvious.
 - Agree to exemptions and workarounds for (e.g.) tutorials, where establishing an appropriate overlap with the time zones of other students proves to be unworkable.

Asynchronous virtual teaching

- *Student participation*
Faculty should ensure that students:
 - Understand the process engagement elements that are essential for their learning, and how to 'catch up' if their participation is delayed for reasons of illness (and so on)
 - Make arrangements for engaging with peers for groupwork, where this is not automatically organised through the LMS or assignment technologies.
 - Ensure that they discuss what their expectations of each other are in groupwork situations and understand the mandatory behavioural standards.
 - Know how disability accommodations and special learning needs are handled in the processes of independent study and groupwork, if they need help in these areas – disability advisors should guide you
 - Are aware of how their participation feeds into assessment(s), if that is part of the framework.
- *Reachability*
Students need to ensure that faculty:
 - Are aware of the location and time zone that students are studying from, where this is not the local time zone and not otherwise obvious.

Summing it up in the study guide / outline

Variable content

All of the preceding elements should help to shape the study guide or course outline for the module / class, along with other key information. The appropriate content can also include a variable range of elements that may be considered essential to fit different subjects, degree pathways and institutional requirements. The table on the following page is therefore intended to provide an idea of the usual 'core content' that fits alongside those variable elements, but is not intended to be prescriptive or comprehensive.

Core content

Synchronous live Course outline	Synchronous virtual Course outline	Asynchronous virtual Study guide
<i>Basic information</i> – title, credits, lecturer, contact details.	As left	As left – but think about integrating these in an introductory video as well as text formats. You will also likely be setting up a frame of hyperlinks for the sections below, or using the capabilities of the LMS to provide interactive structure.
<i>Overview of the module / class</i> – normally a paragraph or two, indicating the content and why it’s worth studying it.	As left	
<i>Learning outcomes</i> – the knowledge/understanding and skills that students will acquire through successful engagement with the module.	As left	As left, but use student directed form: “By the end of this module, you will: <ul style="list-style-type: none"> • Understand... • Know about... • Know how to... (Emphasising the role of the learner in their own learning).
<i>How the module / class will be taught</i> – the pattern of learning events (lectures, tutorials, workshops), readings/viewings and other study activities.	As left – but with links to help with technology platforms used, details of access to recordings for those who can’t make sessions (and policy on this).	As left for all these items, but with more integration in a schedule, and direction in relation to how and when things need to be done, including: <ul style="list-style-type: none"> • What the student needs to do in each week / section before moving on, and how they can check their progress. • How much time every (part of each) activity should take – the student needs to be able to plan their study in detail. • The reading list should be arranged by week / period and integrated in the flow of activities; it may also include videos, interactive media and so on.
<i>How the module will be assessed</i> – what students will need to complete, with weightings and deadlines.	As left – but think about having recorded FAQ video sessions on assignments; these can be more effective than text when ‘live’ questions are not possible for some.	
<i>Thematic schedule</i> – by week / stage of the module / class; a weekly pattern works for most modules / classes unless there is fieldwork (!) or one-off exercises / simulations / presentations.	As left	
<i>Reading list</i> – in your normal format and integrated with the LMS for online access.	As left	Above all, the study guide should take the student on a journey so that they always know what they should be doing and when.

Selected further reading

Aubrey, K. & Riley, A. 2019. *Understanding and Using Educational Theories*. London: Sage.

Boettcher, J. & Conrad, R-M. 2016. *The Online Teaching Survival Guide: Simple and Practical Pedagogical Tips*. San Francisco: Jossey Bass.

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