21. Successful teaching in virtual classrooms

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INTRODUCTION

The ability to plan and deliver a successful 'virtual classroom' (or 'webinar') is an increasingly important skill for university teachers. The rise of the virtual classroom has accompanied the recent global growth in online and blended programmes for which they provide an important opportunity for synchronous tutor-to-student and student-to-student interactions. Yet we are also seeing an increase in the use of virtual classrooms to support traditional face-to-face programmes, driven in part by a growing appreciation of the advantages afforded by the medium.

Whilst we predict the delivery of virtual classrooms will become an increasing proportion of a teacher's 'load', we recognise that some colleagues will have reservations about this vision of the future. Some will have concerns about the extent to which the medium can facilitate effective (and enjoyable) interactions between teacher and students and between students, and others may be daunted by the apparent technological challenges involved.

We have been using virtual classrooms since 2010 and in this chapter we draw on those experiences to explain the opportunities and advantages provided by the virtual classroom medium, and provide advice on how best to exploit these whilst mitigating the potential risks.

The chapter is organised as follows: first, we explain what we mean by a virtual classroom and why we prefer this description to a 'webinar', despite the latter being much more commonly used in practice; second, we discuss key considerations for planning for the use of virtual classrooms within a programme or module; third, we discuss issues relating to the design of effective virtual classroom interventions; fourth, we discuss how to select appropriate activities for virtual classroom sessions; and, finally, we provide some practical guidance for delivering virtual classrooms.

WHAT IS A VIRTUAL CLASSROOM?

We use the term 'virtual classroom' to describe an online synchronous session to support student learning delivered via a Web-conferencing technology (in our case, Blackboard Collaborate) which potentially incorporates voice, text, images and video. There are many benefits of using 'virtual classrooms'. They represent a cost-effective medium which allows the tutor to quickly switch between tutor-led and team-based activities, and potentially provide an opportunity for tutors to provide support and feedback to many more students than is possible in a traditional classroom context.

We prefer to use the label 'virtual classroom' to 'webinar' as the latter has become synonymous with a 'one-way' communication from presenter to audience, which is common with promotional webinars delivered in the corporate world. The phrase 'virtual classroom' implies students will be actively participating in the session, not merely listening.

PLANNING THE USE OF VIRTUAL CLASSROOMS

Why bother with virtual classrooms in the first place? What value do they add to the teaching and learning on a programme? In these sessions we aim to provide a quintessential classroom environment, a space devoted to the practice of real-time teaching and learning (Martin and Parker, 2014). Because of this emphasis, virtual classrooms, as with their physical counterparts, offer the possibility for teachers and learners to purposefully engage in both the knowledge transmission and the co-creation of knowledge that help underpin transformational teaching (Kelly, 2009).

When planning virtual classrooms, it is crucial to bear in mind the value the session adds. This is especially important in the current context of online learning, when access to content and means of interaction with it are widely available through a variety of digital platforms. The unique value of the virtual classroom session always needs to be borne in mind, centred on the roles of teacher and learner. Even peer-to-peer sessions, though making full use of the interface features on offer, may only make sense in terms of the programme or module objectives when undertaken in the context of a specific teaching intervention. Examples of such interventions in a virtual classroom context might include using virtual break-out sessions prior to an online plenary feedback session, or an online group discussion of new conceptual understanding.

This holistic perspective means that planning virtual classroom sessions needs to take account of the pedagogic preferences of the individual teacher, to ensure that the use of learning technology is driven by the

teaching design rather than the other way around. This standpoint presupposes that individual teachers have a clear idea about their own pedagogic preferences in relation to design decisions taken at both module and programme levels, but, importantly, also understand the opportunities and limitations of the virtual classroom technology. This also depends on the overall programme philosophy and the preferences of the other academic teaching staff on that programme. This approach to embedding the technology into the overall design helps guard against the risks of a formulaic use of the teaching and learning opportunities offered by the virtual classroom space. The teaching potential of specific features, for example whiteboard use or break-out rooms, should always be evaluated in terms of the module's objectives and learning outcomes.

Depending on the teaching context, a variety of ethical issues also need to be borne in mind. For example, using virtual classrooms as part of the process of creating evidence for the impact of learning may raise ethical considerations such as confidentiality and awareness of the risks involved in suggesting alterations in the workplace. This is especially important given virtual classrooms' potential as environments for the co-creation of knowledge, in which empirical evidence is forthcoming that may be valuable to the research interests of academic staff. In a blended learning context, virtual classrooms are integrated into programmes and modules that are taught primarily face-to-face. To maximise the effectiveness of this integration we need to assess the implications for curriculum and programme design, and ask what this blended approach will mean in the context of both the programme and module.

Teaching Tip
Ensure all blended learning innovations align with the overall expectations of the programme. The use of virtual classrooms should support the teaching and learning objectives, not detract from them.

As blended-learning researchers have recently suggested, this integrative approach to matching appropriate delivery methods to programme and module objectives has major implications in terms of the general requirements for staff development (Alammary et al., 2014). These authors identify three levels of blended approach, each defined by an ascending intensity of training and development need:

1. Low-impact blend: where additional online activities are added to an existing programme.
2. Medium-impact blend: where online activities replace other activities in an existing programme.

3.   High-impact blend: where the blended programme is constructed from scratch.

Other research usefully identifies several key strategies to increase adoption of synchronous virtual-classroom sessions into blended learning programmes (Martin and Parker, 2014). These lead to the following teaching tips:

Teaching Tip
1.   *Provide support for teachers and students, and easy access to virtual classrooms.*
2.   *Conduct workshops demonstrating how to set up and use virtual classrooms.*
3.   *Organise experts on synchronous virtual classrooms to lead workshops on their use in blended programmes.*
4.   *Communicate to teaching staff how synchronous virtual classrooms can contribute to beneficial personal factors, such as reducing travel time and cost, improving teaching, and enhancing student learning.*
5.   *Make peer-support user groups available for teaching staff.*

DESIGNING AN EFFECTIVE VIRTUAL-CLASSROOM SESSION

When integrating virtual classrooms into programme and module design, the aims and learning outcomes are the key drivers, but pedagogic style across disciplinary boundaries and the preferences of each individual teacher also need to be recognised. Pedagogic approach in the programme and module design will influence the decisions about the format, timing and structure of virtual-classroom sessions.

Recognition that virtual classrooms are pedagogic events means that planning and design follow established pedagogic principles that are then adapted to the affordances of the technology. The pedagogic aims of the session and activity should drive the design, not the feature set of the software tool, for example making the opportunities available for independent study and self-facilitated learning.

Engagement in the session by both teacher and learner is a strategic-level issue and will shape the experience of the classroom session. This in turn raises issues of engagement expectations, in which the nature of engagement may determine a maximum class size and require additional teaching or moderation support within the session.

Teaching Tip
Consider using an additional person present in the session in a teaching or moderating role if using parallel breakout sessions or to manage the chat channel.

The marketing of programmes and subsequent student expectations will also impact on programmes in terms of student requirements for engagement. This issue should be addressed in the design stage when differentiating between postgraduate and undergraduate cohorts, especially where, for example, higher-degree learners may be expected to demonstrate a deeper critical awareness of issues through discussion. How this issue is dealt with in the design is dependent on the overall programme philosophy and the expectations driven by this. If an undergraduate programme is sophisticated in its approach to engagement in all contexts, for example requiring seminar presentations, then this will also reflect the student expectations in terms of their virtual classroom engagement. Similarly, cultural variation within the student cohort should be borne in mind, with its implications for expectations relating to critical reflection and critically evaluating concepts, theories and models, both of which are potentially enriching in the context of virtual-classroom experience. Effects of cultural variation may also be evidenced in differing levels of engagement in classroom and virtual-classroom activities by the same students. This is another potential advantage of the virtual environment.

SELECTING YOUR VIRTUAL-CLASSROOM ACTIVITIES

The versatility of the virtual classroom medium combines the strengths of the lecture and the syndicate group. The space can be instantaneously transformed to suit a different engagement format, for example moving swiftly from lecture to group work or whole group discussion. This demonstrates one clear advantage of the virtual space over certain physical environments, such as the lecture theatre. In planning and designing the activities for virtual classroom sessions, the onus is on programme-level designers to ensure that students are made aware of these advantages and that the virtual classroom environment is available for group work, virtual meetings etc.

Again, this stresses the importance of a high-level pedagogic design that is flexible in approach. Students should be free to use the virtual classroom space on their own initiative, for example using a customised group space to encourage self-directed engagement and peer-to-peer, networked learning (Cochrane and Narayan, 2016).

BOX 21.1   PRACTITIONER INSIGHTS 1: DESIGNING A VIRTUAL CLASSROOM SESSION

As with any teaching intervention, the design should be driven by a combination of factors, the most important of all being the learning objectives for the session. Other factors are:

- The functionality provided by the specific virtual classroom technology you are using
- Your own level of confidence with the technology
- Students' familiarity with the technology
- The nature of the subject matter being covered.

I have developed an approach to Virtual Classrooms that works well for me and my subject area of accounting and finance. This involves designing PowerPoint slides that provide a clear structure for the session and incorporate the following content:

– An introductory warm up quiz to check understanding and act as an 'ice-breaker' to the session
– A brief summary of key learning content
– Activities and multiple-choice questions to provide an opportunity for students to practise application of concepts and techniques on short, clearly structured activities. This reduces the risk that students could become lost and frustrated, which is perhaps possible with longer and less well-structured activities.

I have found this to be a very effective approach to engage students and to allow me to quickly identify misconceptions and tailor my support accordingly.
Virtual classroom features I particularly like:

– 'Chat': I encourage students to use this in response to directed questions and also to simply share questions and comments as the session progresses
– 'Raise hand': this allows students to indicate they have a question requiring a response. I encourage students to use microphones to communicate but for various reasons they are often more comfortable to use Chat
– 'Polling': this allows students to respond to a question which may be a simple 'yes' / 'no' or a multiple-choice poll with responses from 'a' to 'd'
– 'Timer' feature: this can help students manage their time on set tasks.

Once I was reasonably confident with the above features I attempted to use the more advanced features: break-out rooms, application sharing etc., but only sparingly, and often only if I have the support of another moderator!

Another important aspect of the design of a virtual classroom session is 'flexibility'. You may well hope that users have completed the preparatory work, brought with them a scientific calculator, have with them a functioning microphone and headset, turned up to the right session for their group, but it is a good idea to ensure that you have built in sufficient flexibility so that the session will still work even if these hopes are not realised!

BOX 21.2   PRACTITIONER INSIGHTS 2: PREPARING FOR
YOUR FIRST VIRTUAL CLASSROOM

We strongly recommend that you practise running a virtual classroom with a colleague before you run one 'for real'. This helps build confidence with the technology, knowing how to find and operate the various affordances you need. Just as important is building confidence with the medium: talking into a computer without being able to see your students' reaction can be more than a little unnerving, but this reduces with practice.

It is also a good idea to experience the virtual classroom 'as a participant' too, to gain an appreciation of how it all works from a participant's perspective and avoid the confusion arising through highlighting something to participants which only you as the moderator can see on your screen.

It is also a good idea to sit in the same room as a more experienced colleague, so you can see how they do it and discuss issues arising after (or even during) the virtual classroom.

DELIVERING A VIRTUAL-CLASSROOM SESSION

Building an understanding of the etiquette and the pedagogy of the event is crucial to successful teaching and learning in the virtual classroom. While planning and session design are critical, running sessions can be even more taxing than face-to-face teaching, because of the potential uncertainty of using a new environment and the lack of visual cues online. A clear plan of how the session time is to be used will keep things on track and inform and reinforce the expectations of the session to participants. Bearing in mind that engagement levels may be higher than expected, care should be taken not to overestimate the volume of content that can be covered in the session. The responsibilities as a session facilitator also include technical aspects that will require thought being given to a backup plan, testing and familiarity with the interface, provision of technical support and planning for software functionality changes between versions.

The tone used in the session and the additional detail required for a global audience will need to be considered, especially where the native language of participants is not the same as that of the teacher. Sessions work more effectively when they support various forms of engagement and discussion that rely on the participants' understanding of the etiquette and the pedagogy of the event. Approaches might include:

- Blended group presentations based on pre-organised knowledge construction.

BOX 21.3   PRACTITIONER INSIGHTS 3: DELIVERING AN EFFECTIVE VIRTUAL CLASSROOM SESSION

WHAT TO DO BEFORE

Before the virtual classroom is delivered, some planning and communication is obviously required. Students need to know what preparation is required and what materials or equipment they may need during the session.

It is also a good idea to review the list of student names and check the pronunciation if necessary. Unlike a face-to-face session where eye contact and a simple nod of the head from the tutor can be a sufficient cue for a student with their hand raised to respond, the tutor running a virtual classroom must address a student by name.

We also advise that you arrive early yourself (at least half an hour before the webinar is due to start) to allow plenty of time for setting up the session, checking audio and video features, and for uploading relevant documents and checking they appear as expected. An early start also allows you to welcome students as they arrive, helping break the ice and build rapport. I find these informal conversations before the session starts are usually the best way for me to find out how students are really getting on, and what the issues and queries are that I need to respond to.

Students should be encouraged to arrive at least 10 minutes before start time so they can set up in plenty of time, but don't be too surprised that many will arrive at the moment you start (or later!). If you do have to step away before start time, change your 'status' so that participants know you are not present. Leave a 'welcome' message informing everyone you will be back soon, and a reminder of what they will need for the session.

WHAT TO DO DURING

During the webinar itself we recommend the following:

- Use your video feature for just a few seconds at the start to say hello, but then turn your video off;
- Establish the 'etiquette' that only the person speaking has their microphone turned on, and that if a participant wants to speak they should 'raise their hand' and wait for you to pass control of the microphone to them;
- 'Time lags' can be a problem: when conversing with a participant, use a phrase like 'over to you' to indicate you have finished speaking and are waiting for a response;
- Don't be afraid of the inevitable 'silences' that occur during a virtual classroom. If there are no immediate responses to a question, it might be tempting to jump in and assume students are stuck and need your help. In my experience, it is best to sit tight and the responses will come;
- Allow yourself time to read chat messages and decide how best to respond. My approach is to respond directly by name to those messages which have merit, but to respond on an anonymous basis to messages which reveal misconceptions to avoid the perception of 'naming and shaming'.

- Blended prepared presentations followed by synchronous task-based work in-session.
- Directed learning with question-and-answer sessions.

More detailed instructions for tasks may need to be provided, especially for initial sessions. It's also useful if using break-out rooms to pre-populate them with task details if possible. When designing any session, it is vital to be sure that students can complete the task, both from the perspective of understanding it, and ensuring that the environment permits them to produce the desired output. For example, if the product of a discussion in a break-out room is a list of a few key points or decisions, there may be a need for a whiteboard facility that allows this to be shared with the whole group, or another tool may have to be used to capture the group's output in a form that can be shared with the whole group.

CONCLUSION

In our experience, we have found that the inclusion of virtual classrooms offers significant benefits to both teacher and learner. For purely online and also for blended courses, these sessions add the essential value of real-time interaction and feedback between teacher and student, and between students themselves. As in the case of real-world classroom activities, the virtual sessions require careful planning, design and execution to maximise their potential benefits. The versatility and flexibility that the virtual environment offers help make a compelling case for their integration into courses, but specialist advice does need to be sought in advance, and the need for professional development of faculty should always be borne in mind. Successful teaching in the virtual world is as dependent on these considerations as any other form of intervention. This in turn requires the wider commitment of the institution as a whole, in order to ensure the necessary arrangements for both pedagogic and administrative support are in place. With these support networks secured, the benefits of successful teaching in virtual classrooms, for both students and faculty, are far more likely to be achieved.

SUGGESTED FURTHER READING

Alammary, A., J. Sheard and A. Carbone (2014). 'Blended learning in higher education: Three different design approaches', *Australasian Journal of Educational Technology*, 30 (4), Australasian Society for Computers in Learning in Tertiary Education, https://www.learntechlib.org/p/148495/ (accessed 3 July 2018).

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Thought 13

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Students learning to code for the first time tend to focus on the end result, without understanding the process, which is usually viewed as a black-box.

For example, they look for a sample program to execute, without understanding what it means and why it is there. To overcome this challenge, a pair programming approach is used to encourage collaborative learning and help students understand what they are doing – not just get the right result.

The session starts by dividing the class into pairs, with each given a distinct program containing multiple errors. Students work like a detective in a crime novel, using critical thinking to uncover the errors (in this context, the culprit). The task encourages them to examine each line of code and, with reference to taught elements, question what it should do. And narrowing down the source of the error leads them to iteratively correct the code – so it becomes natural to try small modifications and test the effect they have.

The activity enables students to 'get their hands dirty' with the code, in a collaborative environment and with support from the tutor. There are several benefits stemming from this approach of requiring students to rectify errors in a program by working in pairs: it shows the significance of collaborative learning; it aids the students to harness technical skills by developing a better understanding of the program and its corresponding logic; finally, it helps to develop an appreciation of the significance of iterative learning.