Chapter 4

Successful Factors for Adoption of Synchronous Tools in Online Teaching at Scale

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Introduction

With the advancement of technology in recent decades, online learning is becoming increasingly popular. Statistics show that the uptake of online learning is growing more rapidly than the face-to-face mode of learning (Lederman, 2019; Norton, Cherastidtham, & Mackey, 2018). Since learning is becoming a life-long goal, many adult learners enrol in either formal online programs or professional training courses. Meanwhile, given the improvement of technology, such as mobile learning and virtual tools, the access to learning using technology is much easier than before. Recently, COVID-19 forced many universities to go online overnight.

Improving the learning experience of online students is an ongoing topic. There are challenges faced by the online learning environment. For example, isolation, lack of interaction with peers and instructors, and the absence of real-time feedback (Kim, Liu, & Bonk, 2005). Previous literature (Park & Bonk, 2007; Pineda Hoyos, 2018; Schullo et al., 2005; Ward, Peters, & Shelley, 2010) generally suggests that synchronous tools, such as web conferencing and online discussions can help to relieve these difficulties, particularly the former. Studies suggest that synchronous software can improve online student interaction and satisfaction (Cornelius & Gordon, 2013; Gegenfurtner, Schwab, & Ebner, 2018; Kear, Chetwynd, Williams, & Donelan, 2012; Wang & Hsu 2008). However, the findings are not entirely conclusive. Gegenfurtner and Ebner (2019) conducted a meta-analysis using controlled trials and found webinars were slightly more effective than control conditions (online asynchronous and face-to-face delivery) for student achievement, but the differences were trivial in size.

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In the real implementation of synchronous tools, there are numerous barriers to the adoption at scale in Higher Education. Primary problems include, for example, the digital literacy of teachers, increased workload for staff and technology competency of students (Ertmer, 1999; Hew & Brush, 2007). Furthermore, if staff and students are not well prepared and engaged for the effective use of the technology, it may not necessarily improve the student experience. Much research has been conducted into investigating if synchronous tools improve student satisfaction or learning outcomes. Nevertheless, little attention has been paid to how to properly design the implementation of synchronous tools in order to improve the student learning experience. Where students' learning experience is not improved, it may not necessarily be that the technology itself doesn't work, but the pedagogies and implementation process have not been designed well. Given online education is a primary trend in tertiary education, it is imperative to investigate it.

The Graduate School of Business and Law (GSBL) at RMIT University runs three postgraduate programs, Executive Master of Business Administration (EMBA), MBA and Juris Doctor (JD). RMIT is one of the first universities in Australia to offer online classes to postgraduate students via Open Universities Australia. All three programs are offered both face-to-face and online. The EMBA and MBA programs both have 12 courses. The EMBA requires students to have a minimum 3 years of experience as a manager and is offered to mature age students. Most students in the EMBA, both face-to-face and online, study by part time. The MBA program does not require students to have prior work experience. The JD program comprises of 24 courses. Similar to the MBA program, work experience is not mandatory for enrolment into JD. It is primarily offered to students with a non-law undergraduate degree to study law at the master level. Compared to the face-to-face cohort, the proportion of part-time students in MBA and JD is much higher in the online cohort. Prior ad hoc student feedback shows the motivations for students to study these programs online include flexibility, work-life balance and geographic reasons (e.g. living in rural areas or interstates that are difficult to commute to the campus). Approximately 43% of the MBA/EMBA and 58% of JD students are female. The highest percentage of age range for MBA students was 25–29 years, EMBA students, 30–39 years and JD students, 25–29 years.

Collaborate Ultra is the web-conferencing software used for online delivery at RMIT. Collaborate Ultra is a piece of relatively mature software for learning and teaching purposes. Key features of Collaborate Ultra include traditional chats, document and screen sharing and whiteboard. It also includes more sophisticated features like polling and breakout rooms. The School promoted the use of Collaborate Ultra since it is embedded in the Learning Management System (LMS) and IT support is available.

This chapter reports on the authentic experience of promoting the webinar tool Collaborate Ultra in postgraduate programs to examine factors for a successful adoption to improve student engagement and satisfaction. By using the student feedback and teaching scores over 3 semesters, this chapter identified success factors including (a) staff training, mentoring and support, (b) student training, (c) defining a clear purpose and (d) consistent scheduling pattern. The findings are important for

online instructors and administrators to consider the best ways to promote the use of synchronous tools. Given the ever-increasing enrolment in the online education and the demand from the students for highly engaged active learning methods (Kim et al., 2005; Ward et al., 2010), this study provides insights into the pedagogical design for active learning and staff training.

Literature Review

Synchronous Tools and Active Learning

The Active Learning literature suggests students need to be engaged in order to achieve the best learning experience and outcomes (Meyers & Jones, 1993; Prince, 2004). Asynchronous tools including audio, video, discussion boards and blogs are typically designed for single-to-many participants interaction. The interaction in webinars is typically designed for large numbers of participants and has the advantages of being live, synchronous and in real time (Gegenfurtner & Ebner, 2019; McKinney, 2017; Wang & Hsu, 2008). Among the benefits of synchronous interaction, previous studies highlight teacher immediacy and dynamic interaction as components benefiting students (Shen & Ho, 2020). In a number of cases, it has been reported that there is even a higher level of interaction than the on-campus mode because some students may be more active online than in class (Gegenfurtner & Ebner, 2019; Shen & Ho, 2020).

The popular Community of Inquiry (CoI) framework (Garrison, Anderson, & Archer, 2000), rooted predominantly in social constructivism, is one of the earliest to explain the interactions among participants in the teaching activity. Garrison et al. (2000) proposed that to enable a positive experience, learning needed to occur within the community through multiple forms of “presence”, such as teaching, social and cognitive presence. It highlights students as active participants who collaboratively engage in “purposeful critical discourse and reflection” to construct personal learning and confirm mutual understanding (Garrison & Akyol, 2013, p. 85). Social presence is particularly emphasised for the online setting by follow-up studies (Kear, Chetwynd, Williams, & Donelan, 2012; Kim et al., 2005) because it can be challenging in the online environment.

In addition, Moore (1989) outlined three key interactions in online settings: student-content, student-teacher and student-student interactions. Moore’s classification remains the most widely accepted framework for examining the interrelationships between these three types of interaction. Anderson (2003) further extended the theory. Anderson’s interaction equivalency model argues that “deep and meaningful formal learning is supported as long as one of the three forms of interaction (student-teacher; student-student; student-content) is at a high level” (Anderson, 2003, p. 4). This means if one form of interaction is strong, the others are not essential. In the online context, Arbaugh (2001) noted that immediacy behaviours could be used in

online classrooms to reduce social and psychological distance. Meanwhile, Wise et al. (2004) suggested by using welcome messages, including student profiles, humour and icons, a social climate could be created in the virtual classroom.

Barriers to Staff Adoption of Webinar Tools

Previous literature on the barriers of technology adoption primarily focuses on K-12 teachers. For example, Ertmer (1999), Hew and Brush (2007) and Kopcha (2012) conducted thorough reviews of the barriers and classified them into five categories: (a) Access, (b) Vision, (c) Beliefs, (d) Time and (e) Professional Development. These factors can be manipulative or non-manipulative depending on if the factors can be influenced by the school administrators (Drent & Meeliisen, 2008).

In a similar vein, Christensen and Knezek (2008) developed the model of will, skill, tool (WST) that identifies technology attitude (will), digital competency (skills) and access to technology (tool) as key elements affecting the level of technology integration into classrooms. Studies by Hayes (2007), Park and Ertmer (2008), Sugar and Kester (2007) note how vision and belief about the usefulness of technology can affect staff resilience of using it when encountering difficulties. Meanwhile, facilitators can perceive technology as not accessible even if the technology is provided to them, because it does not work as intended or it is not useful for teaching purpose (Kopcha, 2012).

Regarding the element “skill”, when training lacks connection to actual classroom practice or focuses solely on technical skills (Instefjord & Munthe, 2017; Kopcha, 2012), it does not help to facilitate the integration of technology into teaching. The increased workload can be a barrier to the adoption of technology, because planning and learning process is time consuming (Instefjord & Munthe, 2017; Kopcha, 2012) and there can be additional work to deal with misbehaviour from students (Instefjord & Munthe, 2017).

Garet, Porter, Desimone, Birman, and Yoon, (2001) identified six principles to provide effective professional development including: focus on teacher knowledge, reform-type activities (e.g. study groups and teacher networks), situate activities in teacher needs, opportunities for active learning, extensive duration and collective participation. Mouza (2006, 2009) extended the principles to apply to the technology context. For example, professional learning communities and collaborative workshops aligned with classroom practice as reform-type activities. Other studies advocate localised professional development, that link with the pedagogical and disciplinary context in which teaching and learning take place (Burnett & Meadmore, 2002). Eib and Miller (2006) highlighted the community of practice could foster a sense of connectedness and collegiality for continuous improvement and innovation. Similarly, Friel et al. (2009) proposed a “collaborative training team” approach whereby technology training was placed into a pedagogical context by means of pedagogical dialogue to complement technology skill attainment.

Learning Design Components of Webinars

There are various components of a webinar learning tool. This includes the structure of the webinar, e.g. length, frequency, scheduling pattern, and learning medium like slides, discussion, polling, group activities or whiteboard (Gegenfurtner & Ebner, 2019). The learning design also includes the software itself, with examples including Collaborate Ultra, Zoom, Cisco WebEx, Adobe Connect, Microsoft Teams or Skype, which have some similar features though some are primarily developed for educational purposes and some for meetings or conferencing.

The technical requirements include a fast and stable internet connection, a browser or an app installed on a digital device (a laptop, mobile phone or tablet), a camera and a headset (Kim et al., 2005). A facilitator can prepare the webinar room independently or with the support from technologists. Different from traditional face-to-face teaching, the technical aspects can play a significant role in the success or failure of a webinar (Shen & Ho, 2020). For example, unstable internet connection, bandwidth and technical glitches with the hardware can compromise student experience.

The webinar structure can be divided as pre-webinar preparation, delivery of webinar and post-webinar. The planning starts with scheduling the webinar event and announcing the webinar times and rooms (Gegenfurtner & Ebner, 2019). The preparation includes both the staff and students. During the webinar, various learning activities can be used to engage students online. Typical instructional methods include screen sharing, PowerPoint slides, real-time chats, quizzes, polls, breakout rooms, group discussions and real-time feedback among students and teachers to facilitate webinar-based learning. McInnerney and Roberts (2004) suggested the deliberate inclusion of a “warm-up” period in the webinar could help alleviate the feelings of isolation and build a sense of online social communities. At the end of a webinar, facilitators can leave some Q&A time. Prior literature (Vlachopoulos & Makri, 2017; Woods & Baker, 2004) shows immediate feedback from tutors allows learners to reflect on the extent of the knowledge they have acquired. This can happen during or after the webinar to facilitate the immediacy component of social presence. The facilitator can also review recordings to perform post-webinar follow-up analyses and evaluations of the webinar’s effectiveness.

Research Methods

There are various ways to evaluate the success of synchronous tools, including questionnaires, interviews and student results. The success can be measured by student learning outcomes or student satisfaction. Previous studies have used pre-post analysis, control group analysis and gain analysis to measure learning outcomes (Gegenfurtner & Ebner, 2019). This research project focused on student satisfaction and measures the success of the webinar adoption by course experience survey results.

The Course Experience Survey (CES) asks students about the learning experience and directly addresses their satisfaction with the learning design.

Given this study primarily focused on the impact of synchronous tools on learning experience instead of learning outcomes, this measurement provides a more direct proxy of the effectiveness of the instructional design. The program-level survey results are secondary data and RMIT permits its staff to use aggregate data for research purposes.

Prior to 2018, the Open Universities Australia (OUA) courses were surveyed by OUA and not all courses were evaluated. Since 2018, the RMIT CES was used for online students. This provides the opportunity for consistent comparison over semesters. The CES includes seven questions that comprise two scores: Good Teaching Scale (GTS) and Overall Satisfaction Index (OSI). The GTS aims to measure students' perceptions of teaching standards. It consists of six questions that focus on teachers' interactions with students: motivation, attention, understanding of problems, skill in explaining concepts and feedback. The last question is the OSI, which measures the overall satisfaction of the learning experience of a course. The seven CES questions are listed below:

- (a) The teaching staff are extremely good at explaining things.
- (b) The teaching staff normally give me helpful feedback on how I am going on this course.
- (c) The teaching staff in this course motivate me to do my best work.
- (d) The teaching staff work hard to make this course interesting.
- (e) The staff make a real effort to understand the difficulties I might be having with my work.
- (f) The staff put a lot of time into commenting on my work.
- (g) Overall, I am satisfied with the quality of this course.

Each question is given five options for students to score: (a) strongly disagree, (b) disagree, (c) neutral, (d) agree and (e) strongly agree (Likert-type scale). The scores represent the overall percentage "agree" for the GTS or OSI questions. It is calculated by adding the number of students that "agree" or "strongly agree" with the GTS items, represented as a percentage of all student responses.

TDis research used an experimental design to observe the CES results over three stages: (1) voluntary adoption stage; (2) pilot stage; and (3) mass adoption stage. Since the postgraduate programs are offered 3 semesters per year, the observation stages match the semesters. Semester 1, 2018 was the voluntary adoption stage for all three programs. It forms the primary control group for Stages 2 and 3 (i.e. Semesters 2 and 3). In the first stage, there was no management intervention. Semester 2 was the pilot stage when the School promoted the use of web conferencing by providing training in two programs, MBA and EMBA. The JD program did not participate in the pilot. The pilot stage also acts as a benchmark for comparison with the mass adoption stage. Semester 3 was the mass adoption stage when all programs adopted compulsory webinars and received revised training and guidance.

This staged approach of adoption allowed a chance to learn lessons from the pilot stage and refine training and guidance for the mass adoption stage. This experimental

design enabled use of the first two stages as control groups for comparison of the effect of the adoption of webinars on student satisfaction. It is recognized that there can be other factors that contribute to student satisfaction. However, this design forms a relatively clean comparison that controls for extraneous factors (e.g. institutional factors, delivery modes, pedagogical designs) that may affect student satisfaction. It is worth noting that this research did not use the corresponding face-to-face classes as the control groups due to the vast different delivery modes and pedagogical designs.

Results and Discussion

Voluntary Adoption Stage

Before the promotion of synchronous tools, student satisfaction in the three programs was in the 70–80% range of agreement. The GTS and OSI scores of the two MBA programs were 69.7 and 69.8 in S1 2018, respectively. The GTS and OSI scores in the JD program were 77.7 and 80.2, respectively. Using the University average score in S1 2018 (GTS: 63.6, OSI, 65.5) as the benchmark, these scores were clearly above average score. However, the qualitative feedback from a number of students about the online learning experience was unfavourable. Examples of some comments include the following:

The way the course is set up ... where we can learn the material ourselves and then get graded through our assessments on how well we learnt it ourselves. This is not worth the cost of tuition, (EMBA student, S1 2018).

This course is a waste of time and money, (MBA student, S1 2018).

We don't have the face to face element of interaction to help us obtain what is expected of us. (MBA student, S1 2018).

The lecture is audio without slides, (JD student, S1 2018).

Sometimes it is difficult listening online when students interrupt the flow of the lecturer to ask questions... the flow was interrupted very frequently, making it difficult to understand, (JD student S1, 2018).

Sometimes it can be hard to follow on audio when the face to face class is jumping around in the slides as the audio obviously does not give the visual clue as to where the class is, (JD student, S1 2018).

At this stage, the majority of the courses in the 3 programs used asynchronous tools in the online delivery: Echo 360 recording of face-to-face classes, recorded videos, voice-over PowerPoint slides and discussion boards. Three MBA courses voluntarily adopted webinars and all of them achieved a GTS and OSI of over 80. The qualitative feedback shows students' primary concerns were around the lack of interaction with teachers and peers, and the difficulty in using asynchronous recordings, particularly face-to-face recordings, to engage with the course content.

Pilot Stage

In Semester 2, 2018, a pilot was undertaken for each course in the MBA and EMBA programs to run regular webinars instead of just audio or video recordings. Each course was required to have at least 4 webinars over 12 weeks with the first webinar held in Week 1 for orientation. The School drafted a guideline entitled “Online Minimum Standards” that detailed the expectations of the online delivery (see Appendix 1 for the latest version). Instructions and training on how to use Collaborate Ultra software were provided via workshops to staff. Figure 4.1 provides a screenshot of the Collaborate Ultra interface.

During Semester 2 adoption, it was noted some students had technical issues with setting up the system. Students also reported they didn’t feel online drop-in sessions added value because it only offered the opportunity to ask teachers questions, but lack of engagement with peers. Staff reported the attendance in some courses was low; particularly for the ones that only provided drop-ins. The GTS and OSI scores for the MBA programs were 68.5 and 70.1, respectively (see Table 4.1 for data). This is on par with the results from Semester 1 with the GTS score slightly lower and the OSI score slightly higher. Note: the 3 voluntary MBA courses were still on the Semester 2 course list, and achieved a score relatively consistent with Semester 1. For JD, the GTS was 80.3 and OSI 81.0, again slightly better than Semester 1. The GTS and OSI scores of the MBA programs were still considerably lower than the JD, even with the adoption of the webinars.

Fig. 4.1 Collaborate Ultra interface

Table 4.1 Summary of GTS and OSI mean including the standard deviation over three stages

	Voluntary adoption stage	Pilot stage	Mass adoption stage
EMBA/MBA	S1 2018	S2 2018	S3 2018
n	73	132	83
Survey population	326	305	194
Response rate (%)	22	43	43
No. of Courses	15	14	9
GTS Mean (%)	69.4	68.5	87.2
GTS Std Dev (%)	23.3	22.7	13.3
OSI Mean (%)	69.8	70.1	84.1
OSI Std Dev (%)	27.2	21.8	17.9
n	75	87	14
Survey population	302	224	70
Response rate (%)	25	35	20
No. of Courses	18	18	4
GTS Mean (%)	77.7	80.3	90.0
GTS Std Dev (%)	24.5	25.9	10.1
OSI Mean (%)	80.2	81.0	95.0
OSI Std Dev (%)	26.4	29.4	10.0

Note Voluntary adoption stage: no management intervention

Pilot stage: MBA and EMBA programs adopted webinars and received training

Mass adoption stage: all programs adopted webinars and received revised training and guidance
n denotes the number of student responses

Mass Adoption Stage

Based on the feedback from staff and students, the professional development and guidance were revised to ensure the pedagogical components were appropriately incorporated into the support and guidance given. The JD program was required to implement regular webinars. Hence, all three programs in the School adopted the synchronous tools formally in Semester 3. The key initiatives to ensure successful implementation were as follows.

Staff Training, Mentoring and Support

By reflecting on the literature (Instefjord & Munthe, 2017; Kopcha, 2012), access, vision and belief are important barriers to overcome. Even if the software is available to staff and training was provided, they may not necessarily feel it is accessible to them, because of their lack of confidence in using the software and doubts about whether it will work.

Therefore, the learning and teaching leadership team conducted an analysis of the hazard zones based on Semester 2 MBA staff feedback (Feedback was collected via teaching review and course enhancement conversations), which included the technical and pedagogical components. The three key areas of concern were the following:

- (a) Setting up the room for students and communicating the correct information to them. On a number of occasions, staff mixed up the web-conferencing rooms they set up and entered a different room from that students joined.
- (b) The first webinar was important to go smoothly. If that one did not go well, students were not interested in attending webinars. Staff also lost confidence in running it.
- (c) How to engage with students to enhance their attendance rate.

Therefore, training was further provided to address the hazard zones. Staff who were less confident with technologies were assigned mentors to support their instructional design, following suggestions from the previous literature (Zhao & Bryant, 2006). The Deputy Dean, Learning and Teaching and the School Online Coordinator acted as the key mentors. Staff were also engaged as voluntary peer mentors to share their experience. For example, sitting together during the training sessions to go through the Collaborate Ultra functions. Elbow-support for the setting up of the webinars and where necessary, a moderator was arranged for the first week's webinar for technical support. The support was provided for three courses by the key mentors and RMIT Online learning designers upon the staff's request. For this research, engagement with synchronous learning was measured using the attendance rate and active participation in the discussions during webinars. Engagement was addressed by the purpose and scheduling discussed below.

Student Training

In addition to the technical issues, students' confidence in using the software impacted their learning experience. Based on the staff feedback and student comments from Semester 2, there was a particular difference between first-time student users and returning users. Staff observed students tended to have much less technical issues later in the semester, likely due to the growing familiarity with the conferencing software. One student's panic about minor issues could affect the spirit of the entire class, for example, coming late to the webinar, frequently logging in or out of the conference room due to unstable internet, or leaving speakers on with noises.

The School, therefore, designed an instructional document for first-time student users (see Appendix 2). They were advised to check their audio and video devices before the first webinar. Also, an explicit reminder to use a headset and mute speakers when not speaking to avoid distraction to others. Staff were asked to upload the instruction document to the Canvas LMS resource area for the orientation week.

Clear Purpose (Meaningful Engagement, Dynamic Interactions and Community Building)

Previous literature (Anderson, 2003; Moore, 1989) reveals that the learning experience is only effective when there are dynamic interactions between student-content, student-teacher and student-student. Face-to-face workshops were conducted for staff to delve into the purpose of the webinars. Academics agreed the purpose of the synchronous tools was to provide meaningful engagement, dynamic interactions and community building. Staff were encouraged to share with each other their pedagogies in the online delivery and what worked and what didn't.

For example, there needs to be an understanding that in the online environment, the attention span of students can be shorter than the face-to-face setting (Chen & Wang, 2018). The webinar needs to be broken down into small sections to enable sufficient interactions among participants. An exemplar webinar structure was circulated to staff, which recommended an icebreaker at the beginning, a series of small mini activities, using topical newspaper articles and bringing industry people to online webinars as guest speakers (see Appendix 3). Typical webinars were recommended to be no more than one-hour duration. Drop-in sessions were advised to supplement the webinars to offer Q&A opportunities, particularly close to the assessment due weeks.

The study also revealed personalized, warm and immediate styles help to facilitate online delivery (Anderson, 2003; Wise et al., 2004). Other interactions complementing the online webinars are also important (Vlachopoulos & Makri, 2017; Woods & Baker, 2004). An updated Online Minimum Standards (see Appendix 1) were developed to explain minimum expectations starting from the very beginning of the course. It requires a welcome announcement in the orientation week, weekly announcements prompting students to complete their tasks, timely feedback on assignments and prompt responses to student queries.

Consistent Scheduling

To resolve the problem of low attendance and engagement, an analysis was conducted to find the features of the courses with a high attendance rate. It was found those courses tend to schedule the webinars in a consistent pattern mirroring the face-to-face class scheduling. That is, there is a designated weekly time for the online webinars, so students can pre-arrange their time to ensure they are available for the webinar. Staff were advised to schedule webinars in a relatively consistent pattern by the leadership team.

As a result, the Semester 3 CES scores were considerably higher than Semester 2 (Note: a smaller number of courses were offered in Semester 3, since it is a summer semester and some students take a break from their studies). Table 4.1 (above) presents the GTS and OSI mean and standard deviation values across the three periods for EMBA, MBA and the JD programs, respectively. The Semester 3 MBA programs achieved a GTS of 87.2 and an OSI of 84.1, much higher than

the Semester 2 results (GTS 68.5, OSI 70.1). The JD program also improved with a GTS and OSI of 90 and 95, respectively. Qualitative comments show students were generally satisfied with the synchronous delivery (Figs. 4.2 and 4.3).

The online lecturers are a great opportunity to interact with the teaching staff and I received great feedback. Interaction with peers is also good, (EMBA student, S3 2018).

Group sessions with lecturers very worthwhile, (MBA student, S3, 2018).

User friendly online interactions by inclusive, positive and passionate lecturers, (MBA student, S3 2018).

I found RMIT Online studies immensely enjoyable and rewarding, (MBA student, S3 2018).

Thoroughly enjoyed XXX’s teaching style and the unit. Thank you XXX for making the subject interesting and interactive, (JD student, S3 2018).

The extra Collaborate Ultra sessions were useful for interaction with the lecturer, (JD student, S3 2018).

Fig. 4.2 MBA programs student survey results

Fig. 4.3 JD program student survey results

Conclusion

This chapter explores successful factors for the adoption of synchronous online tools at scale. Using three programs at GSBL, and undergoing the pilot and mass adoption stages, the study showed that there are four factors that are important when using the webinars to improve online students' satisfaction:

1. Staff training, mentoring and support;
2. Student training;
3. Defining a clear purpose;
4. Consistent scheduling.

As shown in Fig. 4.4, these factors interact with each other and address the barriers to the adoption of technology. Particularly, access, time and professional development are properly addressed in the revised training program. Mentoring is important to build the confidence and strengthen vision and belief for the integration of synchronous tools. Mentoring also tailors the needs of the staff to link to pedagogical context for teaching practice.

Out of all four factors, “defining a clear purpose” is particularly important for ensuring the technology is not considered as a standalone tool, but the means to facilitate meaningful engagement, dynamic interactions and community building (Anderson, 2003; Garrison & Akyol, 2013; Garet et al., 2001). “Staff training, mentoring and support” and “student training” help to ensure this purpose achieves its goals. It consequently leads to the deep and meaningful learning experience of online students, which eventually can improve the achievement of learning outcomes. Out of all learning design components of a webinar, “consistent scheduling” is the factor that aims to enhance student preparation, active participation and continuous engagement.

Fig. 4.4 Framework for successful adoption of synchronous tools at scale

This research project offers a holistic view of the factors that affect the implementation of the webinar tool. Results suggest, to improve student satisfaction, a deep understanding of pedagogies, professional development of staff, student preparation and learning design of the webinar are all important for the success. These factors should not be segregated from each other. The pilot-formal adoption approach also allows a trial on a smaller scale and then improved mass adoption. The findings are important for online instructors and administrators to consider the best ways to promote the use of synchronous tools using appropriate pedagogical models. This study also contributes to the literature on professional development for technology adoption and technology-enhanced learning.

Limitations of This Study

This study used student survey results (GTS and OSI) to measure student satisfaction. Whilst it directly measures the student experience, it does have limitations. It is recommended that future research in this area should undertake more targeted interviews and questionnaires with staff and students to understand their perspectives on the impact of the adoption of synchronous tools on their experience.

Appendix 1: GSBL Online Minimum Standards

Prepare for the semester

- Provide an informative welcome announcement at the beginning of semester.
- Provide students with some of your (the lecturer) background, e.g. professional experience, teaching experience.
- Provide an overview of how Canvas works for the course—where students will find material, how updates will happen, etc.
- Tell students at the beginning of the semester how you will communicate with them, e.g. “I will be loading an announcement every Monday, talking about the topic to be covered that week”.
- Use a forum on the discussion board, or some other mechanism, to allow students to introduce themselves to the lecturer and to other students.
- For courses that have group assessment, ask students to start to look for groupmates in the orientation week.
- In the Announcement section, have a message, in a welcoming tone, saying that if students wish to share information with the lecturer but not other students—send an email.

During the semester

- Have announcements regularly, e.g. a welcome to each unit message. Refer to newspaper articles, current events, YouTube videos as appropriate to give students a sense of authentic learning.
- Use a friendly, open and chatty tone in the announcements rather than too formal.
- Keep Canvas up to date—at least on a weekly basis during the semester.
- Maintain an organised Discussion Board—not just one big forum. Consider having a number of forums. Title each forum to give a strong message as to what goes there.
- Monitor Discussion Boards on a regular basis and send regular announcements/emails. You can subscribe to the forums so you automatically received responses. This may be in a conversational tone to encourage engagement.
- Run regular webinars to engage with students and promote active learning.
- Engage students with interesting interactive activities, e.g. use icebreakers at the beginning of the webinars, prepare some slides and use chat, polling and whiteboards or other tools to interact with students and promote peer learning.
- Schedule the webinars in a relatively consistent pattern, send a reminder to students on the day when the webinar is held and give them a link to the room.
- Consider making video material (usually 6–8 min) to engage students with key ideas in a topic.
- Post podcasts (or recordings of seminars) wherever possible.
- Answer all emails within a time frame, e.g. 48 h. The answer may be—“please put your question on Canvas in Forum X—many students will benefit from your question”.
- Reinforce details of assessment (which must appear in part B) on Canvas at the beginning of the semester. Include a rubric for all assessments on Canvas.
- For courses that have group assessment, ask students to register their groups under the Canvas Groups, give clear instructions on how the group assessment will be marked, how their contributions will be verified and monitor the groups’ activities.
- Tell students at the beginning of the semester when they will get feedback on their work, e.g. major assignment—2 weeks.
- Make clear that all assignments must be submitted through Turnitin located in the assessment section of Canvas.
- All assignment feedback for OUA should be through Canvas Speedgrader. Provide general feedback on how students went in the assessment through announcements in addition to individual feedback.
- If there is an exam, provide some practice material and regular updates on how to prepare and use “feedforward” where possible, i.e. common errors from last semester’s group.

Appendix 2: Collaborate Ultra Instruction for First-Time Student Users

Prepare to Use Collaborate Ultra

Collaborate Ultra is a webinar tool built into your Canvas course site. It also can be used for meetings with lecturers and group work.

You are recommended to use an **echo-cancelling headset** when in a web conference. If you already have an earphone, most of them should be able to do the job. Using PC built-in speakers can cause noises in the background when you speak.

Preferred browser: Google Chrome, Firefox

Step 1: Access and join a session

To find the “Collaborate Ultra” tab, go to the Canvas “Home Page” your course. Click “Collaborate Ultra” menu on the left bottom hand of your Canvas home page. For example:

Usually your lecturer will give you a link to the session they wish you to join. You can then directly click into the link.

Alternatively, you can join the session from Canvas. **Click** the name of the session instructed by your lecturer and **select** “Join session”.

The Collaborate Ultra session will open. Your name, along with other participants/moderators, will be listed in the Attendees list.

If the session you're joining is not yet opened, you can use this room to set up your audio and camera. When you're on the page, click on "Join from a browser". Enter a name and click on "Join Session".

Step 2: Set up camera and audio

When you join a session for the first time, you need to set up your camera and audio to ensure they work properly. Follow the below steps:

1. Open the Collaborate panel on the bottom right-hand side of your screen.
2. Click on My Settings.
3. Then, click on the Set Up your Camera and Microphone.
4. Choose the microphone you want to use. It tells you that you sound great when it is receiving your audio. Select Yes, it's working.
5. Choose the camera you want to use. It tells you that you look great when it is receiving your video. Select Yes, it's working.
6. You can adjust your speaker and microphone volume by dragging the button.

Step 3: Participate in a session

Watch this below short video to get familiar with all menus in Collaborate Ultra.

https://www.youtube.com/watch?time_continue=10&v=1W4sGpVmJaY

You can type chat messages, talk to other attendees, participate in polls and set your status using various functions available.

Even though it is possible for multiple people to talk at the same time, it is recommended that you release the Talk button each time you have finished speaking to avoid a possible echoing effect.

Etiquette

The online environment is great for networking and getting to know one another, and the rules of common courtesy or “netiquette” apply here as they do in any classroom or public area.

Retrieve past recordings

You can view recordings in the courses you are enrolled in. You may be able to download recordings. Instructors must allow session recording downloads for each session.

Go to Collaborate, open the Menu and select Recordings

Go to Collaborate, open the Menu, and select Recordings

Session name / Recording name	Date	Duration
Welcome to week 12 / recording_1	10/02/2019, 21:08	00:02:58
Week 11 session / recording_1	06/02/2019, 21:04	00:39:53
Welcome to week 11 / recording_1	03/02/2019, 22:59	00:09:09
Week 10 session / recording_1	29/01/2019, 21:02	00:43:44
Week 9 Collaborate session / recording_1	24/01/2019, 21:06	00:53:59
Week 8 Collaborate Session / recording_1	15/01/2019, 21:01	00:55:37

By default, only recent recordings appear on the Recordings page. To search for recordings that are not recent, click on Filter by: Show Recent Recordings menu and select “Recordings in a Range”.

Session name / Recording name	Date	Duration
Welcome to week 12 / recording_1	10/02/2019, 21:08	
Week 11 session / recording_1	06/02/2019, 21:04	00:39:53
Welcome to week 11 / recording_1	03/02/2019, 22:59	00:09:09
Week 10 session / recording_1	29/01/2019, 21:02	00:43:44

To view a recording now, click on the recording name. To view additional options, click on the Options menu on the right for the desired recording.

The screenshot shows a table titled 'Recordings' with columns: Session name / Recording name, Date, and Duration. The first row is 'Welcome to week 12 / recording 1' with a date of 10/02/2019, 21:08 and a duration of 00:02:58. A red circle highlights this row, with an arrow pointing to it from the left. Another red circle highlights the 'More options' icon (three dots) in the first row, with an arrow pointing to it from the right.

Session name / Recording name	Date	Duration
Welcome to week 12 / recording 1	10/02/2019, 21:08	00:02:58
Week 11 session / recording 1	06/02/2019, 21:04	00:39:53
Welcome to week 11 / recording 1	03/02/2019, 22:59	00:09:09
Week 10 session / recording 1	29/01/2019, 21:02	00:43:44
Week 9 Collaborate session / recording 1	24/01/2019, 21:06	00:53:59

Appendix 3: GSBL Online Webinar Expectations

- Hold *regular* webinars each semester. The minimum ones include the following:
 - At the very beginning (week 1)—expectations and assessment.
 - In weeks 3–5 around assessment 1, including feedforward hints and tips.
 - Between weeks 6 and 8, including feedback on assignment 1 and feedforward for assignment 2.
 - At the end (week 11 or 12)—focusing on exam preparation.
- *Timing*: Lecturers need to check-in with their cohort to find a suitable time. There will never be a time that suits everyone and this is why sessions should be recorded. Popular times include evenings, weekends or lunchtime. Please try to schedule the sessions in a relatively consistent pattern, which will enhance the attendance.
- A webinar is not a lecture and thus not intended to replace the time students take to read the material and listen to the actual lecture recording. Students are expected to listen to and watch the regular weekly lecture posted.
- Keep the sessions short and sharp (e.g. 40 min to 1 h). Prepare some slides with some key points (e.g. hints and tips, or key topics you have learned, exercises or even a media article to prompt some discussion).
- Check out interactive tools in Collaborate Ultra which can help to engage with the students (e.g. voting polls, whiteboard drawing for ideas, etc.).
- Promote the Collaborate Ultra session via announcements, and you can even include a handy link for them to enter the session directly. The best practice is to send a reminder on the day of the webinar with a link.
- You can use the *standard course room* or you can *schedule separate sessions* for specific times. The latter might be preferable if you wish to give advanced notice and schedule specific sessions in advance. Make sure you give students a correct link to the session.

Don't forget that apart from holding Collaborate Ultra webinars, it's important to maintain the regular good online teaching practice such as the following:

- Sending out regular announcements.
- Being friendly, open and chatty rather than too formal.
- Providing comprehensive, personalized feedback on assignments.
- Ensure the quality of your recordings is high, including greeting online students at the commencement of the audio recording and breaking up audio recordings into logical parts (avoid a lengthy 3-h recording at all cost!).
- Hold discussion board posts and invite students to participate. Newspaper articles are a good prompt for discussions.
- Be available (and respond to emails within 48 h).

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