Research Matters / 36
A Cambridge University Press & Assessment publication

ISSN: 1755-6031

Journal homepage: https://www.cambridgeassessment.org.uk/our-research/all-published-resources/research-matters/

Synchronous hybrid teaching: how easy is it for schools to implement?

Filio Constantinou (Research Division)

To cite this article: Constantinou, F. (2023). Synchronous hybrid teaching: how easy is it for schools to implement? *Research Matters: A Cambridge University Press & Assessment publication, 36*, 75–87. https://doi.org/10.17863/CAM.101746

To link this article: https://www.cambridgeassessment.org.uk/Images/research-matters-36-synchronous-hybrid-teaching-how-easy-is-it-for-schools-to-implement.pdf

Abstract:
'Synchronous hybrid teaching' (SHT), defined as the concurrent delivery of online and in-person teaching, is an instructional mode employed by many schools during the COVID-19 pandemic to minimise learning loss for students who had to self-isolate at home. Since then, there have been calls for SHT to be retained as an instructional strategy post-pandemic to enable students who would otherwise miss school (e.g., students with certain mobility issues, health conditions and/or family circumstances) to still attend classes. To explore the feasibility of this proposal, this qualitative study drew upon the SHT experiences of primary and secondary teachers in different parts of Europe. The findings indicate that SHT is a demanding mode of instruction, one involving four different types of challenges: co-ordination challenges, administrative challenges, interaction challenges, and engagement challenges. More importantly, they demonstrate that SHT can struggle to consistently provide on-site and remote students with comparable learning opportunities and experiences. Through exposing the challenges involved in SHT, the study identifies directions for improving the quality of SHT in the future. It also calls for SHT employed during the pandemic to be referred to as 'emergency SHT' rather than merely as 'SHT'.

Synchronous hybrid teaching: how easy is it for schools to implement?

Filio Constantinou (Research Division)

Introduction

In recent years, there have been various calls to make teaching and learning spaces more flexible, to allow them to better cater for the needs of the increasingly diverse student population (see e.g., Raes, 2022; Wang et al., 2018). One such flexible space is that created by the concurrent combination of in-person and online instruction, allowing both on-site and remote students to attend lessons simultaneously. This merging of modalities, known as "synchronous hybrid learning" (Raes et al., 2020), "blended hybrid model" (Bartlett, 2022), "concurrent classroom" (Ladd, 2020), "synchromodal teaching" (Bell et al., 2014) or "dual-mode teaching" (Centre for the Enhancement of Teaching and Learning, 2020), is more commonly encountered in higher education. Its introduction may represent, to some extent, an attempt to respond to the declining number of students enrolling in traditional, in-person university programmes following an increase in the offering of distance-learning ones. This hybrid form of instruction, or "synchronous hybrid teaching" (henceforth SHT), provides higher flexibility and, as such, can be particularly attractive to learners who are given the option to attend lectures either remotely or in person depending on their personal and/or professional circumstances and commitments (Bower et al., 2014; Gosper et al., 2010). However, despite its appealing nature, SHT is still an "emerging practice" in higher education, with research in this area being "in its infancy" (Raes et al., 2020, p. 286).

Research in SHT is even more limited in the context of primary and secondary education, where SHT is a much less frequently occurring or discussed mode of teaching. The first time SHT surfaced as an instructional possibility in primary and secondary schools internationally was the COVID-19 pandemic. During the pandemic, infected students and their close school contacts were required to stay at home for a period of time to help reduce the spread of the virus. To minimise the disruption to these students' learning, many schools around the world attempted to implement SHT. Following this experience, SHT has been viewed by many as one strategy that schools could adopt post-pandemic to make learning more flexible and more inclusive (see e.g., International House World Organisation, 2020; Joshi, 2023; Weller, 2021). For example, with SHT, ill students, students with mobility issues, as well as international students needing to spend some time in

their home country, would still be able to attend classes. This would, in turn, help to mitigate the learning loss they would otherwise experience.

While the potential benefits of employing SHT are unquestionable, the ease with which this mode of teaching can be implemented in primary and secondary education is not sufficiently understood. To help examine this issue, this study interviewed a number of primary and secondary teachers about their experience of using SHT in schools in different parts of Europe during the COVID-19 pandemic. The study illuminates various challenges confronted by teachers and students during SHT, thereby identifying a number of important obstacles that need to be overcome for SHT to be smoothly implemented in schools and for it to function as an effective instructional strategy.

Method

This research was part of a larger mixed-methods project which sought to record and understand teachers' experiences of planning and delivering lessons during the COVID-19 pandemic. The project involved a questionnaire completed by teachers from around the world, and follow-up in-depth interviews with 13 of the questionnaire respondents, all based in different parts of Europe (for more details about the project's methodology and findings, see Carroll & Constantinou, 2022, 2023). The present study drew upon the experiences of the interviewees, specifically 12 of them (as one did not engage in SHT). As shown in Table 1, the 12 interviewees represented a diverse group: they were based in different countries, worked in different education sectors (primary and secondary), had different roles within their school, taught different subjects, and their teaching experience ranged from 6 to 35 years. It is worth noting that all teachers interviewed were based in schools in Europe, while the majority of them worked in the private sector. This may have restricted, to some extent, the range of experiences captured through the interviews. It is likely that SHT outside of Europe and in the state sector may have manifested itself somewhat differently.

The interviews were semi-structured and lasted approximately 90 minutes each. They were conducted online in June and July 2021, and were used to collect more in-depth information about how teachers experienced the COVID-19 disruption. During the interviews, the teachers were invited to describe and reflect on their experiences of teaching during the pandemic, including those concerning SHT. Written informed consent was obtained from all interviewees (see BERA, 2018).

The interview transcripts were analysed thematically (Braun & Clarke, 2021) in MAXQDA (VERBI Software, 2021). The analysis centred around the challenges involved in implementing SHT. Overall, four different types of challenges were identified, all of which are exemplified below through relevant interview extracts.

Table 1: Interview participants (N=12).

Characteristics		N
School location	UK	6
	Cyprus	1
	Italy	2
	Romania	1
	Spain	1
	Switzerland	1
Education sector	Primary	2
	Secondary	10
School type	State-funded	3
	Private	9
Gender	Female	7
	Male	5
Position in the school	Teacher with a leadership role (e.g., head of department)	7
	Teacher without a leadership role	5
Subject area*	Creative subjects (e.g., art, design and technology, music)	2
	Humanities and Social Sciences (e.g., English language, literature, history)	5
	Science and mathematics	3

*This category concerns only the secondary teachers (the primary teachers taught all subjects).

Findings

The interviewees' experience of SHT seemed to be overall negative, hence the focus of the analysis on the challenges involved in using this instructional mode. In general, the participants found SHT particularly demanding and did not think it had led to high-quality learning for all students. In fact, they described it as the worst of the three types of teaching they employed during the pandemic (the other two being fully remote teaching, and socially distanced fully in-person teaching):

> "It's the worst of the choices, hybrid is the worst..."

> "Full online teaching is definitely preferable to hybrid which is a nightmare."

> "Hybrid teaching is much more difficult than all one [fully remote teaching] or all the other [fully in-person teaching]."

> "Not have hybrid – you either are at school or not at school. That's it. You can't have this two-way thing, it's just horrible."

The analysis identified four different types of challenges experienced by teachers during SHT: (a) co-ordination challenges, (b) administrative challenges, (c) interaction challenges, and (d) engagement challenges. These are described and exemplified below.

Co-ordination challenges

Teachers described SHT as a "juggling act". Operating simultaneously in two different instructional modalities felt like being "pulled in two different directions":

> "And I don't think any teacher, including myself, really succeeded or thrived in those conditions, because it really was a juggling act in terms of you had maybe 18 people in the classroom demanding your attention, and then you had to keep the 2 or 3 online included as well. So, it was a really poor second best in terms of delivering teaching to the learners."

> "Teaching entirely online obviously is far from ideal, but you can focus entirely on one thing. Hybrid teaching was where I felt most pulled in two different directions."

Co-ordinating on-site and remote learning activity proved particularly challenging in practical subjects like music, as well as in subjects entailing a strong conversational component like English:

> "A lot of the time that we've been open we've been teaching classes with half the class present in the room and also teaching with pupils online, which is really difficult, especially in a practical subject like music, to try and get anything meaningful happening in both places. That is the biggest challenge."

> "I've never had more than 75 per cent in the classroom for this whole academic year. I've always had at least 25 per cent simultaneously learning remotely, so that's been very difficult in terms of – you know, as an English teacher, in terms of classroom discussion, debate, it's been quite hard to manage."

Administrative challenges

Teaching concurrently on-site and remote students seemed to place considerable administrative demands on teachers. Examples of administrative tasks that had to be carried out by teachers using SHT included setting up the technology in the classroom at the beginning of the lesson, uploading relevant resources on the online platform for the benefit of the remote students, and marking work which had been submitted online:

> "And it was just practical elements. Our lessons are very short. Our single lessons are only 35 minutes. So, in terms of getting in in the

> beginning of the lesson to a classroom, setting up all the technology, logging on to Teams, taking the register, administratively at the beginning of lessons, it's very, very time-consuming, so that was quite tough."

> "If they're hybrid, that's really, really hard, because you have to upload all the work for the online students, you also have to download the work for the online students, you have to mark on the screen, and all that sort of stuff."

The communication with the remote students before and after the lesson, often involving multiple email exchanges, also proved administratively demanding and time-consuming:

> "It's complicated, and also the extra work to make sure that you send all the work to her [remote student] in advance, then receiving millions of emails, of course, because she's not with you face-to-face to ask you those questions. So, when you send the PowerPoint and the activities, all the millions of emails, 'I don't understand this activity' – normal things that when you are in the classroom one-to-one, it's easier."

Interaction challenges

Another aspect of teaching and learning that was negatively impacted during SHT concerned the quality and quantity of interactions during the lesson. The interactions most affected were those between on-site and remote students, as well as those between the teacher and remote students. The analysis identified three factors, or types of constraints, that seemed to restrict and undermine these interactions: (a) sound-related constraints, (b) visual constraints, and (c) cognitive constraints.

Sound-related constraints

Technical difficulties often caused delays in the verbal interaction between on-site and remote students. These delays resulted in remote students not having as many opportunities as their on-site classmates to speak and to actively participate in the lesson:

> "They [remote students] often had quite patchy wi-fi connections, so if you asked them questions there was a time lag. Getting them involved was really difficult and often as a teacher you ended up just saying 'Look, just listen and follow us as best as you can because it's just not working in terms of including you in the lessons, no matter how much we try it'. So, that was my general experience of having learners both at home and in the classroom."

Apart from the issue of time lag, there was also the problem of poor sound quality which deprived remote students of further participation opportunities such as that of "reading out loud" in English lessons:

> "Things like reading, in English, we do a lot of reading out loud so it's difficult for them to do reading out loud, because again, the [on-site] students can't necessarily hear them very well. So, I think it was quite an isolating experience for those students, but I think it was probably better than them not joining at all."

However, it was not just the on-site students who had difficulty hearing their remote classmates. The reverse problem also occurred. Remote students often had difficulty hearing what was being said in the classroom by their peers and/or the teacher:

> "The sound quality isn't always that good. I mean, I've got a very loud voice, I'm a teacher, you know, but the discussions that we have – they [remote students] can't necessarily hear the other students' answers, especially if those students are quite quiet."

> "When I listen back to my own recordings, the quality is awful. One of the main things that I really noticed is that in terms of the sound, if – and I've got quite a good laptop with quite a good microphone, but if I move really at all, even if I stand up or if I move at all around the classroom even to write on the board, the quality of the sound is very, very poor. So, it means that the remote learners can't really hear the teacher speaking, if the teacher is not sitting directly in front of the computer at all times."

Remote students' inability to hear well on-site students' verbal contributions resulted in teachers repeating them, thereby compromising the flow and quality of classroom discussions:

> "It led to quite an unnatural way of working on my part, where we teachers found ourselves almost having to repeat everything that the students in class said, so that the online ones could hear."

> "It was very, very unnatural, and I think it [having to repeat things] has certainly curtailed the discussions and the quality of discussion that we would usually have."

Visual constraints

The quality of SHT was further compromised by various visual constraints. For example, remote students often struggled to read what was written on the whiteboard, or had difficulty seeing the teacher and generally what was taking place in the classroom:

> "If you're writing on the whiteboard, it's not always that clear using the camera, what exactly you're writing."

> "I think the quality of understanding and of seeing what's happening in the classroom was poor for the remote learners."

To help alleviate the problem of visual accessibility faced by remote students, some teachers sat in front of their laptop and avoided moving around the classroom. However, this rendered the lesson more static and less interactive, while attaching a "lecture-style" character to it:

> "When we had learners online and learners in the classroom at the same time, you were kind of shackled to the computer screen as well because you had people who were watching you through the camera onscreen, so it was difficult to move away from the screen at the same time. So, all of those things meant that all of the best practice in teaching quickly reverted to teaching from the front in almost a lecture-style approach."

> "What it took away was the animation of me moving around, I'm just sitting in front of a laptop and using the laptop as a remote device … So, it makes for a very static lesson."

Another visual constraint related to teachers' difficulty, or inability, to see remote students clearly and use visual cues, such as students' body language, to assess their level of engagement in the lesson:

> "The most difficult part of hybrid teaching is not being able to just do the informal assessment, of reading [remote] students' faces, their body language, their level of attention, their level of engagement. You can't read that when it's hybrid, it's harder."

Cognitive constraints

SHT can prove particularly attentionally demanding for teachers, as it requires simultaneously attending to, and managing, two different groups of students which are not equally visible and have distinct circumstances and needs. The considerable cognitive challenge that this process entails sometimes resulted in teachers losing sight of the remote students who were often fewer in number and therefore easier to be overlooked or to be "forgotten". This tended to restrict even further the interaction between remote students and the teacher:

> "I think completely online teaching is better than hybrid, because your whole concentration is fully on that. With hybrid teaching, a majority of kids are in the class. They are there right in front of you, right? Then you have these three or four kids who are online. There's nothing wrong with them, they're just online. I do the same [art] demonstration to the whole class, so both sides can see it. However, I'm then going to go straight to the people in my class, I'm going to ask people 'Any questions? No? OK. All right, anybody else? Any questions?' 'Yes, we've got this thing' 'OK'. Dealing with them, dealing with that. Then I'm going to go around and have a look to see what they're doing. But the people online, unless they put their camera on, because there might be a problem or they can't do the thing, by the time I've got around

> 24 people or whatever it is, there's not much time, 45 minutes, there's not much time to really deal with them. So, I would say my teaching in hybrid of the people online isn't great. Usually what happens is I end up saying at the end of the lesson 'Hi, guys, sorry about you guys, I forgot about you'."

> "I spoke to one of the kids I have the other day who's been online all year and he's like 'Oh, Miss, I like being online because I can get up late in the morning and I can do what I want and the teachers sort of forget about me a bit and that's quite nice because then I don't have to work so hard,' and things like that."

> "The challenge was to remember that I have to connect with the [remote] student, because you arrive to the lesson and you start, and you forget about that student, that was challenging."

Engagement challenges

Another set of challenges that tended to compromise the quality of SHT pertained to student engagement. As many of the interviewees noted, remote students seemed to be less engaged in the lesson than their on-site counterparts:

> "And the other one, I think, is about motivation, because I feel that students being at home are less motivated, less engaged, less willing to take part in the lessons."

In some cases, this lower motivation and engagement may have resulted from practical obstacles, such as attending the lesson from a different time zone and/or while surrounded by family members or other potential sources of distraction:

> "Because we have a lot of international students, many of them were still at home and hadn't travelled back for particular reasons. So, there have been some pupils that have learnt online all of this time since we've been open again. But from Malaysia, Singapore, like they're learning at different times of night, so a lot of them they were showing me out the window of their house and it's like 11 o'clock at night and they're in a lesson here in the middle of the day, so it's been really tricky for students learning remotely."

> "I think it's not the same when you are at home and with your brother, your sister, or something."

Some of the remote students engaged in what one interviewee described as "ghosting", exploiting probably the invisibility granted to them by the remote nature of their attendance. Ghosting involved logging into the online session to give the teacher the impression of attendance and then engaging in a different activity that was unrelated to the lesson:

> "We had quite a lot of ghosting – you know, where they logged on in the beginning and then they went and did something else, and then they logged off at the end of the lesson – and that was quite hard to track … We call it ghosting yeah, where you kind of sign on and then you go off and watch Netflix, and then you come back 40 minutes later and you go 'I'm still here.' That was quite hard to police."

Discussion

SHT, which was employed by many schools around the world during the COVID-19 pandemic to mitigate learning loss for students who had to stay at home, drew attention to its affordances and to the possibility of it being used as an instructional strategy post-pandemic to render lessons more inclusive. To explore the feasibility of this proposal, this study drew upon the experiences of primary and secondary teachers who used SHT during the pandemic while working in schools in different parts of Europe. Its aim was to develop a better understanding of SHT and to gain insight into schools' readiness to implement it. Overall, the findings of the study suggest that SHT, albeit providing students with more flexibility, is a demanding mode of teaching, one involving four different types of challenges: (a) co-ordination challenges, (b) administrative challenges, (c) interaction challenges, and (d) engagement challenges.

Synchronous hybrid teaching: a socio-technical process

SHT emerged as a socio-technical process, one shaped by the interplay between the social and the technological environment. While the social environment, including teachers, students and their characteristics (e.g., teachers' and students' competence in using the technology), certainly affected how technology was used in hybrid lessons, it was the technological infrastructure with its various inherent limitations as well as failures that seems to have been more impactful, affecting the social environment in decisive ways. The study provided various examples of how "the technological" influenced "the social", such as:

- Technical difficulties caused by malfunctioning or inadequate technological infrastructure (e.g., sound delays, poor sound quality) prevented remote students from fully and actively participating in the lesson, while also curtailing classroom discussion.
- The lack of additional cameras in the classroom forced teachers to sit in front of their laptop to ensure that remote students could see them, which in turn rendered the lesson more static.
- Setting up the technology at the beginning of the lesson, uploading all relevant learning resources and managing the email communication with remote students after the lesson, increased teacher workload.
- Co-ordinating interactions and activities across two different media increased cognitive load, resulting in teachers experiencing "hyper-zoom" or "hyper-focus" (Raes et al., 2020; Zydney et al., 2019).
- The nature of remote, computer-mediated communication enabled "ghosting", while also depriving teachers of the opportunity to access remote students' body language and use it to assess their level of engagement in the lesson.

Many of the challenges described by teachers seem to be similar not only to those encountered in SHT in higher education (see e.g., Bower et al., 2014; Raes et al., 2020), but also to those experienced in hybrid meetings in the workplace (see e.g., Saatçi et al., 2019). These commonalities arguably suggest that "synchronous hybridity" constitutes a distinctive communication modality which is socio-technical in nature and is characterised by its own set of challenges.

Is synchronous hybrid teaching a genuinely inclusive mode of instruction?

One of the most appealing features of SHT is the flexibility it can provide. With SHT, students who would otherwise miss school (e.g., students with certain health conditions, mobility issues and/or family circumstances) are still able to attend lessons (provided, of course, that they have access to at least an electronic device and an internet connection, which might not be the case in less affluent contexts).

Even though it can afford flexibility, SHT may often struggle to operate as an effective inclusion strategy. This is due to its inability to consistently provide the two groups of students involved, that is, on-site and remote ones, with comparable learning opportunities and experiences. In particular, the findings of the study point to an asymmetrical relationship between on-site and remote students, with the latter having fewer opportunities to actively participate in the lesson than the former. As the interviewees noted, remote students had overall fewer opportunities to contribute to classroom discussions, had more difficulty following the lesson (e.g., difficulty seeing what was written on the whiteboard; difficulty hearing what was being said in the classroom), received less attention from the teacher who was "pulled in two different directions" and was more likely to attend to the needs of on-site students, received less personalised feedback during the lesson as a result of being less visible to the teacher, and were exposed to more distractions (e.g., surrounded by family members) and temptations (e.g., "ghosting"). These asymmetries are likely to have resulted in remote students being more excluded than included in the lesson, while also impeding the development of a sense of community, or "co-presence" (Bower et al., 2014), between remote and on-site students.

While these phenomena undermined the quality of SHT during the pandemic, they should not be viewed as inherent features of SHT or as insurmountable obstacles. SHT during the pandemic was employed as an emergency solution and, as such, its implementation was not accompanied by appropriate planning and/or the necessary infrastructure. For SHT to deliver the desired learning outcomes for all students, there needs to be adequate investment in both the technological and social infrastructure of the teaching and learning space. Investing in the technological infrastructure would involve, for example, equipping the classroom with professional microphones, cameras, speakers and monitors, as well as ensuring that both the school's and the remote students' internet connection is sufficiently fast and reliable. Improving the social infrastructure, on the other hand, would require, for instance: providing teachers with appropriate training to help them cope with the technological and pedagogical demands of SHT;

familiarising remote students with the functionality of the online platform and introducing them to techniques they can employ to tackle possible technical issues; and developing routines and norms that can allow learning to continue when technical difficulties arise. To differentiate SHT carried out during the pandemic from more carefully planned and delivered forms of SHT found in many higher education institutions worldwide, it is suggested that the former is referred to as "emergency SHT" and not merely as "SHT".

Future directions

Through identifying four different types of challenges involved in delivering SHT in schools, this study hopes not only to have further illuminated SHT but also to have pointed to useful directions for improving SHT in the future and rendering it a truly inclusive mode of instruction. However, due to its small scale, this investigation needs to be complemented by further research. Future research into SHT in primary and secondary education could examine, for example: (a) the experiences of a larger number of teachers from a wider range of educational settings across the world to help develop a broader and more nuanced understanding of the phenomenon of SHT, (b) the experiences of students, both remote and on-site ones, to help provide a more holistic picture of the shortcomings as well as affordances of SHT, and (c) the effectiveness of different strategies for delivering SHT.

References

Bartlett, L. (2022). Specifying hybrid models of teachers' work during COVID-19. *Educational Researcher, 51*(2), 152–155.

Bell, J., Sawaya, S., & Cain, W. (2014). Synchromodal classes: designing for shared learning experiences between face-to-face and online students. *International Journal of Designs for Learning, 5*(1).

BERA. (2018). *Ethical guidelines for educational research* (4th ed.). London: BERA.

Bower, M., Dalgarno, B., Kennedy, G. E., Lee, M. J., & Kenney, J. (2014). Blended synchronous learning: A handbook for educators. Office for Learning and Teaching, Australian Department of Education.

Braun, V., & Clarke, V. (2021). One size fits all? What counts as quality practice in (reflexive) thematic analysis? *Qualitative Research in Psychology, 18*(3), 328–352.

Carroll, M., & Constantinou, F. (2022). Learning loss in the Covid-19 pandemic: teachers' views on the nature and extent of loss. *Research Matters: A Cambridge University Press & Assessment publication, 34*, 6–25.

Carroll, M., & Constantinou, F. (2023). Teachers' experiences of teaching during the Covid-19 pandemic. Cambridge University Press & Assessment.

Centre for the Enhancement of Teaching and Learning. (2020). *Dual-mode teaching: introduction*. The University of Hong Kong.

Gosper, M., McNeill, M., Phillips, R., Preston, G., Woo, K., & Green, D. (2010). Web-based lecture technologies and learning and teaching: a study of change in four Australian universities. *Research in Learning Technology, 18*(3), 251–263.

International House World Organisation. (2020, August 13). *International House schools offering hybrid classes*.

Joshi, K. (2023, April 19). Is hybrid learning the future of education? Top insights from leaders. *Emeritus*.

Ladd, T. (2020, June 19). Optimizing concurrent classrooms: Teaching students in the room and online simultaneously. *Forbes*.

Raes, A., Detienne, L., Windey, I., and Depaepe, F. (2020). A systematic literature review on synchronous hybrid learning: gaps identified. *Learning Environments Research, 23*, 269–290.

Raes, A. (2022). Exploring student and teacher experiences in hybrid learning environments: does presence matter? *Postdigital Science and Education, 4*, 138–159.

Saatçi, B., Rädle, R., Rintel, S., O'Hara, K., and Nylandsted Klokmose, C. (2019). Hybrid meetings in the modern workplace: stories of success and failure. In H. Nakanishi, H. Egi, I.-A. Chounta, H. Takada, S. Ichimura, & U. Hoppe (Eds.), *Collaboration Technologies and Social Computing* [CRIWG+CollabTech 2019] (pp. 45–61). Springer.

VERBI Software. (2021). *MAXQDA 2022* [computer software]. Germany: VERBI Software. https://www.maxqda.com/

Wang, Q., Huang, C., & Quek, C. L. (2018). Students' perspectives on the design and implementation of a blended synchronous learning environment. *Australasian Journal of Educational Technology, 34*(1), 1–13.

Weller, S. (2021, April 10). *Why I'm happy working as a hybrid teacher*. TES.

Zydney, J. M., McKimmy, P., Lindberg, R., & Schmidt, M. (2019). Here or there instruction: Lessons learned in implementing innovative approaches to blended synchronous learning. *TechTrends, 63*, 123–132.