Synchronous hybrid learning in times of social distancing: A report and case study on benefits, trainer's challenges, and guidelines

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Abstract

Higher education institutions (HEI) use different learning formats, such as onsite lectures or online seminars, to support their students learning. In the last decades, higher education actively supported an increase of online offerings to foster flexibility and freedom. Due to the Covid-19 pandemic learning circumstances in higher education transformed dramatically, and many HEIs were forced to shift all their courses to online learning formats. Some institutions implemented synchronous hybrid learning (SHL) as a solution between extremes that balances different needs in times of social distancing. This article outlines the benefits, trainer's challenges, and guidelines that can be ascribed to SHL under the circumstances of the current pandemic.

The results show that SHL strengthens communication and supports learning. On the one hand, SHL is an innovative, inclusive format, which supports social competencies, multiple perspectives, dynamic interactions, and immediate student-student as well as trainer-student feedback. On the other hand, SHL relies on students' equipment and depends on students as well as trainer adaption and reliable technology. Nevertheless, this report shows that SHL is a promising format, which can close one part of the digital divide between students. Future SHL endeavours should thus be carefully prepared and supported by the hosting HEI. Specifically, trainers and students should be trained on how to use the required technology, and trainers should learn about the pedagogical benefits and implementations of SHL by using protocols and chat trackers.

Introduction

White et al. suggested, in 2010, that higher education should transfer onsite learning to a synchronous hybrid learning format and wrote that in "future years, it is anticipated that universities will have inadequate physical facilities to meet the demands of an increasing student population. Additionally, with warnings of impending pandemics, universities need to be prepared to deliver courses in alternative ways to ensure continuity of instruction" (p. 34). In the beginning of 2020, this prediction came true.

In the first Covid-19 wave (February 2020 – June 2020) many European higher education institutions (HEIs) switched to distance learning or no learning sessions at all, and they now face the challenge of possible second and third waves and a rocky path back towards their usual learning sessions. Synchronous

hybrid learning (SHL), a format in which face-to-face students and online students can learn together at the same time seems to be a preferred solution for HEIs.

This article discusses SHL before and after the Covid-19 outbreak and highlights how potential and challenging this learning format is. By describing one European case of synchronous hybrid learning from July 2020, and by summarising discussions, critiques, and gaps related to synchronous hybrid learning before February 2020, this article compares in detail benefits, trainer's challenges, and guidelines in both periods, before and after the Covid-19 outbreak.

The following questions lead the discussion of the results: Is SHL an appropriate learning format considering the possibility of future Covid-19 waves? How can higher education remain a social place and a place of communication? How can SHL establish communication between trainers and students as well as between students and students? How inclusive and exclusive is SHL?

The sudden demand for synchronous hybrid learning

Europe's higher education "plays a unique role. Demand for highly skilled, socially engaged people is both increasing and changing. In the period up to 2025, half of all jobs are projected to require high-level qualifications … [w]ithout higher education institutions (HEIs) and systems that are effective in education, research and innovation … Europe cannot respond to .. challenges" (EC, COM, 2017, p. 2). Higher education strives "to develop world-class education and training" (EC, COM, 2017, p. 2).

Since February 2020 HEIs have been confronted globally with a situation never seen before. Due to the Covid-19 pandemic, many HEIs shifted learning sessions into distance mode to provide learning opportunities while socially distancing. (For different national higher education reactions see Crawford et al. 2020.) Observable indicators for this transition in the spring of 2020 are the increased demand for distance education exemplified by a drastic growth of Massive Open Online Courses (MOOCs) visitors (see the graphic below) and fast-growing stocks of online education providers (see Kindig 2020).

Synchronous and asynchronous sessions distinguish the field of distant learning. Martin et al. (2017) describe the first as "(a) permanent separation (of place) of the learner and instructor during planned learning events where (b) instruction occurred in real time such that (c) students were able to communicate with other students and the instructor through text-, audio-, and/or video-based communication of two-way media that facilitated dialogue and interaction" (p. 5). In contrast to the first is the latter form in which students determine their own learning pace and time.

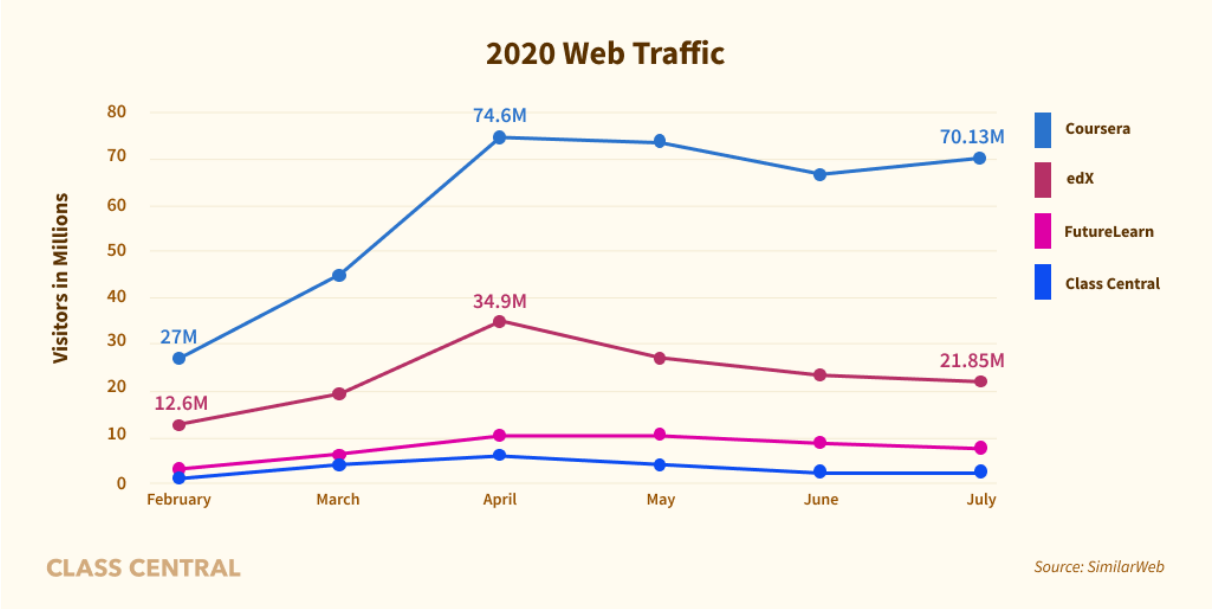

Figure 1: MOOCs visitors during the pandemic (Sha at Claas Central, 2020, https://www.classcentral.com/report/mooc-stats-pandemic/)

The sudden transition towards more distant learning sets an enormous peak on top of the steady growth of distance learning over the last decades in all parts of the world (see Palvia 2018 and Kumar 2017). In opposition to a voluntary turning towards distant learning, the global pandemic and its effects forced a lot of higher education institutions to involuntarily leave their buildings and conduct their learning sessions in the distance. That is why this massive peak in 2020 differs from former developments. Many institutions in Europe decided to transition into distance education only for eight weeks or for one semester (Crawford et al. 2020 and Hall et al. 2020). Pointing out that as soon as the pandemic would allow regular onsite learning sessions, they indicated that they would return to the usual format of teaching (Crawford et al. 2020). As time has shown, however, the pandemic expanded, and higher education institutions started to prepare for a "new normal" (Triyason 2020, Recio, S. & Colella, C. 2020) during and after the Covid-19 pandemic.

One way, HEIs adapted to this situation was to implement SHL to bring alternatives to their students and to balance stakeholders' expectations as soon as national, and respectively regional infection risks dropped. To facilitate SHL, HEIs needed different technical tools such as cameras, microphones, flatscreens, stable internet connectivity, and new software.

Many technological skilled trainers designed SHL sessions in the last 20 years (Raes et al. 2019). Nevertheless, no label was established internationally. That is why it is no surprise that the sudden demand, led stakeholders to use a diverse collection of names. Some trainers in England call it "hybrid learning", administrators in Spain refer to "liquid learning", and students in Germany call it "mixed f2f and online". Even the educational tech community uses different terms. Li et al. (2020) describe such sessions as blended synchronous learning (see table 1). Zydney et al. (2020) write of "blended synchronous learning environments", Bell et al. (2014) "synchromodal" and Beatty (2019) as well as Para and Abdelmalak (2016) call it "HyFlex".

Cyber Classroom	Physical Classroom	Simultaneous	Term
No	Yes	-	Traditional learning
Yes	No	-	Online learning/ E-learning
Yes	Yes	Yes	Blended synchronous learning
Yes	Yes	No	Blended asynchronous learning

Table 1: Distinction of the terms related to blended learning from Li et al. 2020, p. 2.

An SHL case report from Spain in times of COVID-19

In July 2020 an HEI in Spain, due to the ongoing health risk, asked trainers to teach their students in SHL sessions. This chapter outlines one case by summarising a written experience report from one trainer, who taught two sessions in the SHL format. The room was equipped with a one-directional camera and microphone, two large screens, one for presentation and one to display the remote students. The trainers were asked to bring their laptops.

The trainer (T) from this case taught two sessions with 50 enrolled students, 20 face-to-face and 30 online. Although 50 students enrolled for this course, in both sessions, only three face-to-face students appeared onsite, and 20 students logged in online. As a resume, T states: "After my first seminar in SHL format, I feel heavily overloaded."

The HEI from this case report switched to SHL, due to the Covid-19 situation in Spain. After teaching online from March 2020 until the end of June 2020, this HEI requested trainers to offer SHL as a special treat and a guess from T, (perhaps) for visa purposes. T teaches Business Ethics and usually concentrates on vivid discussions. The HEI offered T training to get used to the new technology. Nonetheless, T's students did not receive any instruction and also experienced the SHL format for the first time. "The day we had our class, I told my students at the beginning that for me it was the first time and that I needed their support and that I relied on their cooperation." Although T typically communicates her expectations and learning objectives and asks the students about their expectations, she skipped it in these SHL sessions because she did not know how to communicate with her face-to-face and remote students at the same time. She received positive feedback on the use of quizzes and polls, and said, that with this method she could connect to all students. T switched her communication strategies between the two groups. In the first session, she asked her face-to-face students' oral questions and in the other meeting her remote students. T used a chatroom and appointed a chat tracker with the task to bridge the gap between the two groups. Unfortunately, this person failed sometimes and was not always on time.

The HEI offered T a technical assistant, which she could call in case of technical failure. She says: "I felt insecure with the hardware … I was afraid that my online students could get lost. Whenever you switch from the PPT to the video, you should not forget to share the new contents. And then you have to jump back to the PPT." T usually uses flipcharts or whiteboards and missed the flexibility of being able to use them. On top of that, one onsite student "forgot her charger in one session and because of COVID-19 restrictions, I was not allowed to share my laptop with her."

As her primary challenge, T describes the lack of eye contact with the remote students. “In the first session, I was speaking to the onsite students, because the online students were on the screen behind me. The next day I went much closer to the camera, and I had my laptop next to me; so I spoke into the camera, and when somebody answered I could see them in my laptop.”

SHL Guidelines, Opportunities and Trainer’s Challenges in times of COVID-19

Why use SHL? A systematic review from Raes et al. (2019) outlines different benefits of why higher education institutions started SHL before the pandemic. Next to the wish to increase recruitment rates and to eliminate the need to teach the same course twice, SHL was implemented to increase freedom and flexibility, to include outside expertise, and to offer more elective or specific courses. HEIs can use SHL to give access to education regardless of place, to provide equal learning opportunities, to strengthen social relations between all students, and to guarantee continuity of instruction (Raes et al. 2019). In opposition to that, the Covid-19 case on hand says that their institution offered SHL as a special treat and (maybe) to counteract students’ current travel and visa restrictions. These arguments stress that the innovative, attractive, and location-independent factors of this learning setting led to its use in July 2020.

Martin and Parker (2014) summarise benefits of the more general field “synchronous online learning” in comparison to asynchronous online learning. They say it is more effective in enhancing social competencies, encourages the exchange of multiple perspectives, enhances dynamic interactions among participants, strengthens social presence, fosters the exchange of emotional supports, provides immediate feedback, supplies verbal elements, and raises student satisfaction (p. 193). (See also Chen et al. 2005 and Weiler 2012).

A closer look at the report on hand reveals SHL as a possibility for communication in which learning can be engaged. The report does not explicitly state pedagogical purposes, why SHL was used and does not refer to social competencies or multiple perspectives but names innovation as the driving force. This finding is in line with the fact that the management level of the HEI – and not trainers themselves – requested the use of SHL. Moreover taking into account that SHL equipment such as 360° conferencing cameras, omnidirectional microphones, speakerphones and so on, are currently purchased also in many enterprises, the movement towards SHL in higher education seems to be a part of a general tendency towards an innovative way to guarantee synchronous communication in times of social distancing.

Li et al. (2020) report previous challenges in SHL sessions “such as poor engagement and support, leading to low learning efficiency” (p. 2), and the systematic review from Raes et al. (2019) lists, e.g. more coordination, additional operations with the technical platform, and technical challenges with audio and video components as trainer challenges. The report, on the other hand, describes overtaxing as a primary trainer challenge and emphasises technical related communication problems, low trainer-student and student-student interaction, and the absence of eye contact.

Following the guidelines from Raes et al. (2019), the trainer from the case activated students with quizzes and poles. Furthermore, she appointed one student as chat tracker, as Raes et al. (2019) and Zydney (2019) suggested. Unfortunately, the chat tracker failed sometimes and was not always on time. So, although the

chatroom was up and running, remote students had trouble interacting on time. On top of that, conducting the polls and quizzes was difficult with the installed technology and took a long time.

The case report underpins previous findings on technical problems in SHL sessions and documents, specifically technical-based communication problems. White et al. already reported in 2010 "specified technology problems with hearing the instructor's live lecture, watching the video clips, problems with .. hardware (e.g., computer freezing, slow time to update software), or feeling removed from regular classroom discussion and activities due to the discontinuation of the live questions and comments" (p. 38). Weitze et al. (2013), Bower et al. (2015) and Cunningham (2014) etc. also reported these technical problems, and Zydney et al. (2019) prioritised them beginning with audio issues, network issues, and lag times.

SHL is a technical based learning session. The report shows that participation in these sessions is based on both the HEIs' and the students' equipment. The example of one student missing their charger exemplifies that even onsite students need appropriate material.

Discussion

The sudden demand for SHL is a reaction to the different learning conditions before and after February 2020 in higher education. In the times of recent crises, SHL seems to be one solution to restore the disadvantage between students with and without internet access and functional connectivity (UNESCO 2020), while keeping campus as the primary place of learning and identification. SHL facilitates inclusion by allowing students to decide between on-campus or off-campus learning sessions and enables the management level of HEIs to adapt to governmental and administrative directions concerning social distancing.

In practice, SHL requires its remote students to have both appropriate hard- and software and points a finger at the so-called digital divide between students (Gonzales et al. 2020 and can Dijk 2008). Depending on what equipment the HEI provides, remote students, and sometimes even the face-to-face students, need assistance to secure appropriate hard- and software (see the example form the case report above). SHL seems to be inclusive at first sight. Nevertheless, participants need to be well equipped for a session to run smoothly and without technical challenges. Although SHL enables – in contrast to online learning - the inclusion of students without internet access or functional connectivity at home by providing the opportunity of a face-to-face session for some students, this learning format is still based on the individual use of hard- and software, which van Deursen and van Dijk prove again to be unequally distributed in 2019. By prioritising SHL, HEIs can take a step towards balancing the "physical access" divide of their students but have to keep in mind that at the same time they are building upon the unequally distributed "material access" of their students.

The report on hand outlines that to teach an SHL session is a challenging endeavour, especially when trainers are not voluntarily choosing this format but are required to use it. Although T learned how to use the technology, she did not receive any training in pedagogical adaptions. Her overall tone in the report draws a challenging picture.

The advantages of SHL to bridge the gap between fostering excellent learning and adapting to different stages of infection risks can be used when appropriate technology is at hand. The comparison between both periods, before and after the Covid-19 outbreak, shows that decisions upon using SHL consider both, guaranteeing communication and pedagogical purposes. Whereas securing communication is taken into account, the report indicates that in times of social distancing, pedagogical purposes can be overlooked. To concentrate on social competencies, to use the exchange of multiple perspectives, to foster dynamic interactions among all students, to provide immediate student-student and trainer-student feedback, are primary benefits of SHL while enabling a campus/group identification. Specific methods, such as chat trackers and communication protocols (see Zydney et al. 2020) should be used to promote these benefits. When reliable technology is at hand, and trainers, as well as students, learn before the session how to use the technology and how to communicate properly between the different groups, SHL can be a format with many advantages in times of social distancing.

Ethics

All applicable international, national, and institutional guidelines for social science were followed. All procedures performed in this case study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. Informed consent was obtained from the participant involved in the case study. The author declares that she has no conflicts of interest. A protocol of the case is available at Julia.priess-buchheit@hs-coburg.de.
Declarations of interest: none.

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