



Vol.8 No.1 (2025)

Journal of Applied Learning & Teaching

ISSN : 2591-801X

Content Available at : <http://journals.sfu.ca/jalt/index.php/jalt/index>

Adapting and thriving: From emergency remote teaching to blended learning

Vienne Lin^A

A

Centre for Learning Enhancement and Research, Chinese University of Hong Kong

Paul Lam^B

B

Centre for Learning Enhancement and Research, Chinese University of Hong Kong

Keywords

Blended learning;
case study;
emergency remote teaching;
Hong Kong higher education;
outside the classroom.

Abstract

The COVID-19 pandemic has had a profound and lasting impact on education, with change and consequences that extend beyond its duration. The emergency remote teaching (ERT), the sudden shift from face-to-face to online instruction, left many educators worldwide unprepared. While cases of ERT abound, existing literature focuses primarily on ERT in the classroom setting. There is also a paucity of studies exploring the longer-term impact of ERT on the educational landscape. This case study interrogates how educators in the context of Hong Kong higher education navigated and advanced teaching beyond the classroom during ERT. It further explores the transition and lasting impact of pandemic-implicated educational practices. As diversity is the primacy underlying the case study approach (Stake, 1995), four cases were selected based on various disciplines, technologies, and pandemic-implicated educational practices in Hong Kong. The findings reveal that these pandemic-implicated practices do not simply revert to the normal after the pandemic, which was the original face-to-face instruction. Instead, they evolve into blended learning practices at various levels, including activity-level blending, course-level blending, and programme-level blending. The paper concludes by discussing the pedagogical implications of the "new normal" when blended learning becomes a prevalent form of teaching.

Correspondence

viennelin@cuhk.edu.hk ^A

Article Info

Received 5 March 2024
Received in revised form 2 October 2024
Accepted 1 December 2024
Available online 2 January 2025

DOI: <https://doi.org/10.37074/jalt.2025.8.1.2>

Introduction

The COVID-19 pandemic has had a profound and lasting impact on education, with change and consequences that extend beyond its duration. More precisely, the pandemic has forced stakeholders worldwide to act and react swiftly, radically, and arduously in unprecedented times of emergency. When face-to-face teaching was halted in the early months of the pandemic and intermittently during subsequent waves, many higher education (HE) institutions transitioned to emergency remote teaching (ERT). Due to the far-reaching effects of the pandemic, a large body of ERT literature has flourished. Some literature collected perspectives from students and parents during the pandemic (Ewing & Cooper, 2020; Mshigeni et al., 2021; Seabra et al., 2022) while others chronicled the lived experiences of practitioners globally as they navigated ERT, both individually and collectively (Alterri et al., 2020; Anzovino et al., 2020; Mahaffey, 2020; Mulrooney & Kelly, 2020; Linden & Gonzalez, 2021; Usher et al., 2021).

The existing ERT literature has effectively captured the immediate changes brought about by the pandemic, such as the temporary transition to online teaching (O'Dea & Stern, 2022), and a range of success and bittersweet stories during ERT (Appel & Robbins, 2021; Shinaset al., 2022; Vanleeuwen et al., 2020). Nevertheless, three issues regarding the impact of the pandemic on education remain under-addressed. First, the majority of the literature primarily focuses on ERT *in* the classroom setting. In other words, learning that occurs *outside* the classroom is largely unknown. Second, there is also a paucity of empirical studies exploring the *evolving* educational practices *beyond* ERT. While the ERT paradigm rests not on *sustainability* but on the *temporality* of teaching practices (Hodges et al., 2020; Iglesias-Pradas et al., 2021), many ERT practices, in fact, have been much improved through periodic feedback loops over the past two years (Moore et al., 2021). As such, there is a potential for pandemic-implicated educational practices to be continued or sustained after the initial times of emergency (Moore et al., 2021). Third, the discourse in the ERT literature often concentrates on the overall change in the mode of instruction but fails to address the specific areas of change and how change took place when the teaching modality shifted.

This paper seeks to address the three research gaps aforementioned by examining how educators in the context of Hong Kong HE navigated and advanced teaching outside the classroom in the pandemic and beyond. Specifically, drawing inspiration from the influential Technological Pedagogical Content Knowledge (TPACK) framework (Mishra & Koehler, 2006; Shulman, 1986, 1987), this study investigates changes and adaptations that occurred within three knowledge domains, namely content, pedagogy, and technology, during ERT. This theoretical framework is chosen for its suitability and immediate relevance to the study, precisely because of its focus on teacher knowledge. In fact, teaching requires high cognitive skills, where teachers simultaneously leverage their knowledge of subject matter, teaching methods, and technology (ibid.). Such knowledge enables them to navigate in the unexpected situations, as in the case of the pandemic. The two research questions (RQs)

are:

RQ1. In what ways did educators modify their content, pedagogical approaches, and utilisation of technology during the period of Emergency Remote Teaching (ERT)?

RQ2. How and why have pandemic-implicated educational practices been sustained?

Literature review

Emergency remote teaching

The COVID-19 pandemic upended higher education (HE) institutions worldwide from early 2020 and throughout the two subsequent years, with potential effects that may persist for years to come. In early 2020, a myriad of social distancing policies was in place to mitigate the spread of the coronaviruses. Of particular significance to the HE was the policy of transition from face-to-face to online instruction. As highlighted by Hodges et al. (2020), there is a glaring difference between online teaching as a planned and structured approach and the abrupt and temporary shift in teaching modality during the pandemic. More concretely, such temporality of change from face-to-face, hybrid, or blended courses to fully online instruction should be distinctively referred to as emergency remote teaching (ERT). This distinction is necessary precisely because online teaching involves careful and coherent design and planning which is in stark contrast to ERT where teachers scrambled to teach remotely without sufficient time for necessary amendments (Hodges et al., 2020; Moore et al., 2021; Iglesias-Pradas et al., 2021).

Due to the abrupt shift in the teaching modality, many teachers were left unprepared. Teachers' high level of unpreparedness can be attributed to a lack of practicality, such as the unfamiliarity with using technology-enhanced educational or communication tools or having limited or no prior experience in teaching remotely (Appel & Robbins, 2021; Khan, 2021; Maddumapatabandi & Gamage, 2020; Vanleeuwen et al., 2020). However, at a more fundamental level, the lack of readiness can be attributed to the perceptual shift in the teaching paradigm. Traditionally, the classroom has been viewed as a closed system, with teaching and learning confined to a physical space. In contrast, e-learning operates as an open system that allows students to learn without temporal and spatial limitations (Khan, 2021). This shift raises important questions and challenges for teachers, such as what to expect in the online learning environment, what forms of interaction hold significance, or even how to gauge student engagement when their cameras are turned off.

In the context of higher education in Hong Kong, universities underwent an ERT seesaw situation in response to different epidemiological waves of the pandemic in the city. The word 'seesaw' epitomises the constantly swinging modes of instruction that occurred from February 2020 to May 2023. It shall follow that while each university in Hong Kong has its own administrative policies, institutional agendas, priorities, and teaching calendars, they followed similar timelines

for implementing ERT practices during the pandemic. The timelines that follow are based on the experience of a particular university as an illustrative example. In the second term of the 2019-2020 academic year, all local universities implemented their first ERT where all teaching was moved until further notice (The Chinese University of Hong Kong [CUHK], 2020). When the COVID-19 situation improved, Hong Kong higher education institutions returned to face-to-face instruction in the first term of the 2021-2022 academic year (CUHK, 2021). However, ERT was reintroduced when the Omicron variant had a significant impact locally and globally (CUHK, 2022a). Following the Omicron-induced wave, face-to-face teaching resumed starting from the 2022-2023 academic year onwards (CUHK, 2022b). Despite a recent uptick in Hong Kong from April to May 2023, no emergency measures or ERT were restored (CUHK, 2022c).

The ERT seesaw situation in Hong Kong confirms a fundamental assumption underlying ERT, which suggests that the original teaching modality will generally be resumed once the crisis subsides (Hodges et al., 2020). However, it raises the question of whether pandemic-implicated educational practices can be fully returned to their original state.

The present study

The present study is part of a larger cross-institutional project which explores different virtual teaching and learning (VTL) strategies adopted beyond the classroom in four public universities in Hong Kong. The project encompasses three main areas of investigation, including VTL educational practices concerning new learning venues, internationalisation, and extracurricular activities. Informed by Stake (1995), the present study adopts an instrumental collective case study approach to deriving a general understanding of the lived experience of educators who transitioned into and beyond ERT.

Method

Participants

Four participants, also referred to as cases, were recruited by the project lead and co-leads from four different public universities in Hong Kong through the cross-institutional project. All four public universities are research-intensive and have student enrolments ranging from 6,000 to 20,000. While most students are local Chinese from Hong Kong, there are also non-local students, including international and Mainland Chinese students. There were general and specific sampling criteria. The first general criterion required participants to be involved in virtual teaching and learning (VTL) roles within the four universities under study. The second general criterion was that participants must have experienced the transition to ERT where they carried out pandemic-implicated educational practices. This means that the participants had either adapted their practices or adopted new initiatives during ERT. As balance and variety are essential in case selection (Stake, 1995), specific criteria were established to recruit participants from various disciplines and

across different types of curricula, including both curricular and extra-curricular activities, as well as different forms of VTL, such as simulated or online approaches. Guided by the sampling criteria, potential participants were identified through the professional networks of the project lead and co-leads, as well as desktop research on university websites, including annual teaching and learning conferences. Prior to data collection, ethical approval was obtained from the research ethics committee. Initial contact was then made with the four participants to explain the purposes of the study and to confirm their willingness to participate. A consent form detailing participants’ rights, such as the ability to withdraw from the study, confidentiality, and anonymity, as well as how data would be stored, was provided.

Table 1 specifies the demographics of each participant, including their institutions, pandemic-implicated practices, disciplines, teaching experiences, and examples of courses they teach or projects they manage. In particular, teaching experiences are not solely confined to the act of teaching but also include the commitment to supporting student learning and experiences through various initiatives, such as research, professional development, and reflection (Advance HE, 2020). Each participant was assigned a pseudonym to protect their identities.

Table 1. Participant demographics.

Cases	Institutions	Pandemic-implicated practices	Disciplines	Teaching experiences	Examples of courses/projects
Roger	A	E-learning student ambassador programme	Information Technology	15 years +	Gamification and digital learning applications
Katie	B	VR job interview practice tool	Language Education	7 years +	Business communication; Cultures and beliefs
Bonnie	C	Online exchange project	Linguistics and Translation	15 years +	Linguistics; language pedagogy
Hudson	D	Online peer mentoring service-learning project	Communication	3 years +	Public speaking; Interpersonal communication

Data collection

Upon obtaining the ethical approval, qualitative data were collected between December 2021 and June 2023 using semi-structured interviews. Each of the four participants underwent two interviews: one pre-interview and one post-interview. The pre-interview instrument contained six questions related to the course or programme design, teaching and learning strategies, and future plans for the courses or programmes. The post-interview instrument included two sets of questions. The first set, consisting of five questions, was used if the participants had continued the pandemic-implicated practices discussed in the pre-interviews. For example, one question asked, “Have you expanded the scope of your initiative or made changes to it? How and why?” The second set of post-interview questions, covering four questions, explored why the participants did not continue their pandemic-implicated practices. However, since all participants in this study continued their practices, only the first set of interview questions was used.

All pre-interviews were conducted either face-to-face or online, with an average duration of 50 minutes. For the post-interviews, three out of the four were conducted online, while one was conducted in a written format due to a scheduling conflict. The post-interviews were intentionally designed to be shorter than the pre-interviews, with an average duration of 25 minutes. Such design was to focus specifically on following up with the participants regarding the changes and sustainability of their previously discussed pandemic-implicated practices, rather than starting anew with questions about their practices. This approach sought to build rapport with the interviewees by demonstrating familiarity with and appreciation for their work. Although the post-interviews did not repeat some background questions about their work, participants were free to describe or mention what they did as they wished. All interviews were audio-recorded and subsequently transcribed for data analysis purposes.

Data analysis

Thematic analysis was chosen as the method for analysing the data because it provides the researchers with the flexibility to make sensible choices about how analysis can be conducted, with the caveat that thematic analysis is not an 'anything goes' approach (Antaki et al., 2003). In Braun and Clarke's (2006, p. 79) words, "[t]hematic analysis is a method for identifying, analysing and reporting patterns (themes) within data". It also explores patterns and shared meaning across the datasets which can address the two research questions. Specifically, data were analysed both deductively and inductively. As for the theoretical frameworks, this study used two coding schemes for the two respective RQs. The first RQ was guided by the Technological Pedagogical Content Knowledge (TPACK) framework (Mishra & Koehler, 2006; Shulman, 1986, 1987) where data were analysed according to themes regarding content, pedagogy, and technology. The second RQ followed Graham's (2006) proposition of blended learning models, namely activity-level, course-level, and programme-level blending, as well as some major benefits for the blends.

Apart from the deductive approach, data were also examined inductively following the six stages of analysis. These stages include familiarisation of data, generation of initial codes, development of themes, theme reviews, theme naming, and report writing (Braun & Clarke, 2006, 2020). The data were read and re-read to gain insights into the subject matter. Notes and key points were taken to capture some early observations. For example, phrases, such as "(a) synchronized participation" (Bonnie), "visit this material again and again" (Roger), and "practise anytime" (Katie) highlighted that technologies could move learning beyond temporal and spatial limitations and were subsequently coded and clustered under the theme of the value of blended learning. Referencing Graham's (2006) suggested rationales for blended learning, possible sub-themes of the value of blended learning could be enhanced access and added flexibility. However, this study identified that the benefits of blended learning are not confined to time and space, but also extend to people, such as "across continents" (Bonnie). Therefore, a sub-theme of expanding the parameters of

learning (see below) was used.

Results

RQ1. In what ways did educators modify their content, pedagogical approaches, and utilisation of technology during the period of Emergency Remote Teaching (ERT)?

The first research question was addressed using data collected from the pre-interviews. This paper reveals that all participants made adaptations within the three knowledge domains. In the content domain, educators modified the sequencing and quantity of their teaching content. They also created opportunities for student-generated content. Within the pedagogy domain, a student-centred learning approach was adopted in the pandemic-implicated initiatives. In terms of the technology domain, Information Communication Technology (ICT) and Virtual Reality (VR) were utilised. Table 2 below provides a summary of the four pandemic-implicated practices and the corresponding areas of adaptation.

Table 2. An overview of the four pandemic-implicated practices and the corresponding areas of adaptation.

Cases	Institutions	Disciplines	Pandemic-implicated practices	Modality	Adaptation in terms of		
					Content	Pedagogy	Technology
Roger	A	Information Technology	E-learning student ambassador programme	ERT	Sequencing	Student-centred (student-student)	ICT (Zoom)
Katie	B	Language Education	VR job interview practice tool	ERT	Quantity	Student-centred (student-computer)	VR
Bonnie	C	Linguistics and Translation	Online exchange project	ERT	Role of content generation	Student-centred (student-student)	ICT (Zoom)
Hudson	D	Communication	Online peer mentoring service-learning project	ERT	Role of content generation	Student-centred (student-student)	ICT (Zoom)

The adaptation of content

During the transition to ERT, educators in the four datasets implemented various adaptations in terms of content. The adaptations encompassed three different approaches: change in content sequencing, adjustments in content quantity, and the facilitation of student-generated content.

Change in content sequencing

The sequential change in content is exemplified in Roger's e-learning student ambassador programme. This programme provides students with opportunities to enhance their skills in information technology (IT), media, communication, as well as teamwork to support peers in the wider community. The training includes essential IT and digital skills, such as multimedia editing, desktop publishing, web design, basic programming, and digital animation. By design, the training sessions were intended to take place face-to-face

on campus. The first training session on the introduction to photography was conducted in-person. However, due to the transition to ERT, all in-person instruction was moved online until further notice. In the original plan, the second and third training sessions were dedicated to videography and audio recording, as well as lighting techniques. This sequencing was based on the shared foundational principles between photography and videography, particularly in terms of lighting and focusing. Nevertheless, these sessions were swapped with sessions on audio editing and video editing. This adjustment allowed students to engage in hands-on practice remotely with their own digital electronic devices.

Adjustments in content quantity

The increase in the number of practice content is particularly evident in the case of Katie's VR job interview practice tool. The VR tool is specifically designed for a business communication course which seeks to enhance the learning needs of students in job searching and the early stages of their careers. The course and the tool introduce strategies for navigating various communication challenges that new graduates may encounter in various workplace settings. In the initial design, only one lesson was allocated for the in-person job interview practice due to various constraints, such as the already packed teaching schedules, limited in-class time, and a large cohort of students. The high demand for more job interview practice was reflected in Katie's mid-term and end-of-term course evaluations, as many students remarked that "more interview practice please as it is very valuable". With the introduction of the VR practice tool, students now have access to a significantly greater number of practice opportunities as they can learn anytime and anywhere. For instance, students using this tool can engage in extensive practice and repetition through the built-in exercises, which cover fifteen types of professions, three levels of difficulty, and three types of duration. This allows students to enhance their interviewing skills through repeated practice and exposure to different scenarios.

The facilitation of student-generated content

Students took the initiative to generate content in the two outside-classroom learning opportunities. Bonnie's online exchange project was developed as an internationalisation-at-home initiative to address the prolonged suspension of physical exchanges due to the pandemic. Students from Hong Kong and Turin, Italy, were given both structured and unstructured opportunities to interact through online meetings and WhatsApp where they gained insights into their respective linguistic and intercultural differences. Specifically, participants from both sides were tasked with collecting photos that showcased the linguistic landscapes of their respective cities. These photos were then presented and discussed in virtual classes. In Hudson's online peer mentoring service-learning project, university students serving as mentors took an active role in content creation. The mentors attended training to enhance their academic and psychological awareness in areas such as examinations, university interviews, time management, self-efficacy, confidence, peer communication, and more, so that they can

better equip themselves to answer potentially challenging questions raised by their fellow mentees. Upon completion of the training, the mentors designed a set of common admission interview questions, conducted two online communication training workshops, and facilitated seven mock university interviews with their mentees. This mentor-led initiative aimed to enhance the mentees' interviewing skills while providing valuable guidance and support during the university admission process.

The adaptation of pedagogy

Under the theme of the adaptation of pedagogy, teachers' efforts to promote student-centred learning become prominent across the four cases. In particular, the core notion of the student-centred learning is to design learning that facilitates students' active engagement where they have the ownership and autonomy of their learning (Arman, 2018; Hoidn, 2017). In this case study, students' role in their own learning is evident through two significant forms of interaction, namely student-student interaction, and student-computer interaction.

Student-student interaction

Opportunities for student-student interaction were actively constructed in various ways. For example, Roger's e-learning student ambassador programme aimed to equip a cohort of eight to ten students with some fundamental digital skills so that they could create a supportive digital learning experience for their peers at the university. Bonnie's online exchange project provided a rich platform for student-student interaction at an international level. Students from Hong Kong and Turin had designated time for icebreaking conversations in order to establish connections and foster cross-cultural understanding. Additionally, they collaborated on a project focused on exploring the linguistic landscape of their respective cities. Hudson's online peer mentoring service-learning project facilitated student-student interaction across educational sectors. A group of 30 university students served as mentors and provided communication training specific to university interviews to a cohort of 30 secondary school students. This service-learning project was significant because it provided additional support and resources necessary for students with little cultural and economic capital to thrive in their educational pursuits.

Student-computer interaction

Katie's VR job interview practice tool places a strong emphasis on empowering students and cultivating their sense of autonomy and ownership in their learning process. This application sought to enhance students' job interview skills by providing them with valuable support, including built-in interview exercises and mini lessons. With the VR tool, students were granted unlimited opportunities to practise job interviews and received immediate feedback on their performance. They could self-assess their performance while benefiting from auto-generated feedback tailored to

their specific selections of scenarios. This iterative process enabled students to continuously refine their interview skills and gain self-awareness. In addition to the interview exercises, the tool offered a range of mini lessons. These self-directed learning materials, such as pre-recorded videos on job-seeking, enriched students' learning experiences by allowing them to engage with these resources anytime and anywhere.

The adaptation of technology

To aid the transition into ERT, the use of technology can be broadly categorised into two types. The first and most prevalent type of technology was the use of Information Communication Technology (ICT). In the three cases examined, namely Roger's e-learning student ambassador programme, Bonnie's online exchange project, and Hudson's online peer mentoring service-learning project, were mediated by the videoconferencing tool, Zoom. Educators, students, and peers were able to interact with each other by speaking up in online meetings, sharing their screens to display documents or presentations, having access to the instant chat function, and casually providing feedback by pressing the thumb-ups or emojis. The second type of technology identified in one of the cases was Katie's incorporation of Virtual Reality (VR) into a course. VR technology created simulated 3D environments for students to practise interviews with an avatar interviewer. The immersive setting also allowed students to develop a sense of presence as if they were actually participating in authentic job interviews.

RQ2. How and why have pandemic-implicated educational practices been sustained?

The second research question was answered by analysing data collected from the post-interviews. Different from the pre-interviews, the post-interviews focused on the development of the previously discussed pandemic-implicated educational practices. This study identifies one overarching theme that emerged across all four datasets, namely the notion of continuity and sustainability through blended learning. In other words, educators in the post-pandemic era have adopted blended learning as their prevailing teaching modality. Within this overarching theme, there are two salient sub-themes, which are the levels and the value of blended learning. Blended learning can take various forms and operate at different levels (Graham, 2006). From the four cases examined, three levels of blending have been identified. These blends include activity-level blending, course-level blending, and programme-level blending. A summary of the cases can be found in Table 3.

The levels of blends

Blended learning at the activity level

Activity-level blending refers to a learning activity which involves both face-to-face and computer-mediated components (Graham, 2006). In this case study, Bonnie's

Table 3. The continuity and sustainability of the pandemic-implicated educational practices.

Cases	Pandemic-implicated practices	Relation to the pandemic	Transition trajectories (pre- and peri pandemic)	Current teaching modality (post-pandemic)	Levels of blending
Roger	E-learning student ambassador programme	Pandemic-adapted	Face-to-face → ERT	Blended	Programme-level
Katie	VR job interview practice tool	Pandemic-adapted	Face-to-face → ERT	Blended	Course-level
Bonnie	Online exchange project	Pandemic-derived	ERT new initiative	Blended	Activity-level
Hudson	Online peer mentoring service-learning project	Pandemic-derived	ERT new initiative	Blended	Course-level

online exchange project is incorporated as an activity-level blending component in the current instruction. While the online exchange project was developed as a rescue plan during the pandemic, this initiative has proved to be an effective learning activity for students to participate in cross-cultural communication remotely and safely. The partnership between Hong Kong and Turin, Italy remains unchanged. Students of both sides share the same learning opportunity as the previous cohort. What changes in the current teaching is the physical location of the online exchange. In the post-pandemic era where in-person teaching has resumed, Bonnie now brings participants from Turin at a distance into the lecture hall where the Hong Kong cohort is located. Students in Hong Kong now have the opportunity to engage in learning not only with peers and the teacher face-to-face, but also simultaneously interact with peers overseas by computer-mediated technology.

Blended learning at the course level

Course-level blending consists of both face-to-face instruction and computer-mediated activities within a specific course or learning experience (Graham, 2006). A range of classes or learning components are arranged and sequenced chronically or simultaneously to achieve the intended learning objectives (Graham, 2006). Two cases, namely Katie's VR job interview practice tool and Hudson's online service-learning project, have evolved into examples of course-level blending in the post-pandemic era. For example, Katie's VR job interview application continues to serve as a supplementary practice tool in the compulsory language course once face-to-face teaching resumes. Another instance of course-level blending is Hudson's online service-learning project. This project, which has been embedded within a course on interpersonal communication, continues to operate as a course-level blending approach. Originally designed and delivered entirely online, the project has now transitioned to a blended model that combines 80% online and 20% offline components. The orientation meetings between mentors and mentees and the online workshops and training provided by the university students remain unchanged and continue to be conducted remotely. These online components ensure that the project maintains its accessibility and flexibility which allows participants to engage in collaborative and interactive activities regardless of their physical locations. The 20% offline component of the project refers to the closing ceremony. After working together remotely on the online learning components, the

student groups now come together for a two-hour face-to-face event as part of the closing ceremony.

Blended learning at the programme level

While programme-level blending is frequently referred to as a degree programme (Graham, 2006), in this case study, a programme is defined as a range of online and offline activities, tasks, or resources that are offered within a particular timeframe. In the case of Roger's e-learning student ambassador programme, face-to-face training sessions have resumed after the pandemic. However, the programme utilises a learning management system to host a variety of supplementary learning materials. These online resources, curated based on training topics such as photography, videography, and video and audio editing, serve as valuable supplements to the face-to-face training sessions and would not replace the training *per se*. Roger added, "Just because we finished with the pandemic, it doesn't mean that we finished with Zoom or online learning. But it will keep continuing. It will keep evolving because I don't think online learning will just end it like that. I think offline and online will work together". As the e-learning student ambassador programme is now blended, students can revise and revisit the materials according to their own interests, needs, and time alongside the in-person training classes. Additionally, the online repository serves as a contingency plan in the event of future emergencies, such as the need for another round of ERT if there is a sharp uptick in confirmed COVID-19 cases. This added flexibility enables teachers to seamlessly deliver teaching content either online or offline, depending on the circumstances.

The value of blended learning

In response to the evolving educational practices influenced by the pandemic, the reasons for changes are often mentioned during the interviews. This brings the value of blended learning to the fore. Three prominent sub-themes are identified, including expanding the parameters of learning, improving inclusivity, as well as enhancing pedagogy.

Expanding the parameters of learning

The traditional notion of learning has long been associated with a physical classroom where teaching and learning take place (Khan, 2021). However, this case study demonstrates a departure from this conventional approach by offering a range of learning opportunities beyond the confines of a physical classroom. Students no longer learn with temporal, spatial, or participatory restrictions. For instance, Roger's e-learning student ambassador programme provides students with supplementary learning resources so that they can conduct self-study at their own pace. Similarly, Katie's VR job interview practice tool enables students to gain additional practice anytime and anywhere. Furthermore, Bonnie's online exchange project offers students across continents to participate in (a)synchronised activities and cross-cultural communication. Likewise, Hudson's online

peer mentoring service-learning project brings together university and secondary school students from different educational sectors to co-construct learning. The parameters of learning in terms of time (anytime), place (anywhere), and people (anyone) are thus extended.

Improving inclusivity

The notion of creating a more inclusive and equitable learning experience for students of diverse backgrounds, be they socio-economically, linguistically, or academically, prevails across the datasets. Bonnie's online exchange project is a vivid case in point. Not all students are financially prepared for a physical exchange, according to Bonnie in charge of the project. The project would allow students from less fortunate background to experience cross-cultural and cross-institutional collaboration without incurring additional costs. Another example is Hudson's online peer mentoring service-learning project. This initiative specifically targets disadvantaged secondary school students and provides them with valuable insights and practice for navigating highly competitive university entrance interviews. Hudson recalled that there was a "significant variation of language proficiencies among the [mentees]. This is something that I did not expect... very unfortunately, several [mentees] could not even introduce themselves properly in English. ... [But] this is the real taste. At least they know their ... I can't say, I can't use the word defects, but at least they know their weakness. Right? So they can better prepare themselves at least a year earlier." This community service is a crucial initiative to widen access in higher education precisely because students from disadvantaged backgrounds often lack the information and support essential for them to navigate choices (Bowl, 2003; Marshall, 2016).

Enhancing pedagogy

Pedagogy refers to "the instructional techniques and strategies that allow learning to take place" (Siraj-Blatchford et al., 2002, p. 10). Hudson's online peer mentoring service-learning project highlights the role of student involvement and participation in its course design. Students were provided with opportunities to take on active roles as mentors by leading workshops and creating learning materials for the course. Hudson remarked that the course would not have been possible without the students' leadership and contributions. He said, "I can't do this project without the help of my students because I just serve as the role as a teacher. I give them some guidance, some advice, but they are the one who listen to my advice and tailor make some training materials for their mentees. They are not using my own, lecture handouts. No, they created their own and delivered the concept maybe in an easy or more friendly manner". Likewise, Katie's VR job interview practice tool exemplifies an effective pedagogical practice. With a large cohort of over 100 students, providing timely and personalised feedback on interview performance would have been challenging with limited human resources. However, the utilisation of an auto-generated feedback system enables students to receive valuable feedback promptly.

Discussion

The findings of this study revealed two significant patterns in the pandemic-implicated educational practices that took place outside the classroom. First, there are four interconnected aspects of change and adaptation observed across the cases. More concretely, as the pandemic upended the educational landscape at both local and global levels, the most prominent change was the immediate and temporary shift in teaching modality and its primary role in inducing change in the three elements of knowledge bases, namely content, pedagogy, and technology. To emphasise its importance, the gear representing ERT, as the teaching modality, in Figure 1 below is depicted as the largest. In other words, the change in modality becomes the decisive factor in engendering change and adaptation in the other three aspects.

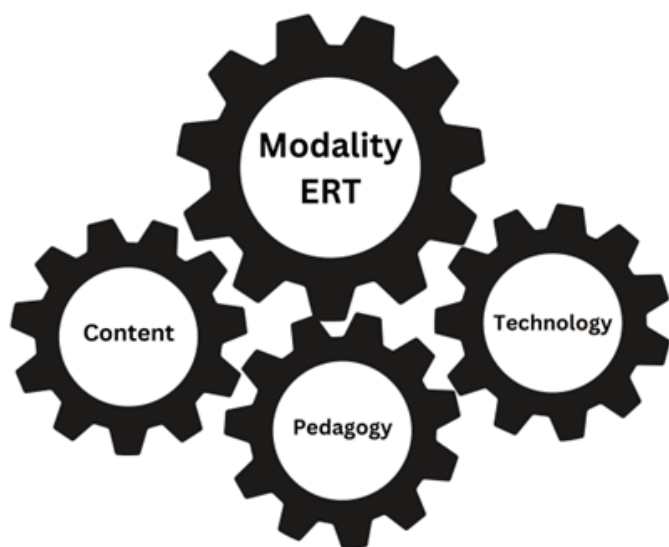


Figure 1. Imagining gears in motion–The four interlocked aspects of change and adaptation during ERT.

In contrast to the extensive focus on technological pedagogical content knowledge, as highlighted by Mishra and Koehler (2006), Koehler et al. (2007), and numerous other scholars (Zimmermann et al., 2021; Valtonen et al., 2020; Joo et al., 2018), this paper shifts its attention towards identifying specific aspects of change and adaptation within the three fundamental knowledge domains during the pandemic. The change and adaptation examined in this study, as addressed in Research Question 1, encompass areas such as content sequencing, content quantity, the role of content generation, the enhancement of student-student and student-computer interaction, as well as the utilisation of information communication technology and virtual reality.

As in Figure 1 above, the three other interconnected aspects of change and adaptation are content, pedagogy, and technology. The gears representing these knowledge domains are of equal size, emphasising the equal importance of content, pedagogy, and technology in recognising the dynamic adaptation that occurred across the cases. In the wider ERT literature, some studies have examined a particular knowledge domain, such as how instructional strategies

facilitated the transition to ERT (Bao, 2020). Others have analysed challenges pertinent to technologies, content, students, pedagogy, and time management (Jung et al., 2021). Our study aligns with the ERT literature in highlighting Zoom as one of the most widely used ICTs when instruction moved online abruptly (Oliveira et al., 2021).

The second pattern observed in this study revolves around the sustainability of these pandemic-implicated educational practices. They continue as blended learning at three levels, which are the activity-level, course-level, and programme-level blending. In essence, the four cases, whether derived or adapted from the COVID-19 pandemic, did not simply revert to their original forms. This finding is particularly valuable, considering that consistent patterns or long-term sustainable changes have not been found in the ERT literature (O'Dea & Stern, 2022). One salient reason for the continued practice is the *recognition of value* associated with the blended learning approach. For example, blended learning improves pedagogy by creating opportunities for students to actively engage in and take ownership of their own learning, as evident in some other work (Northey et al., 2015; Bradey, 2015; de Brito Lima et al., 2021; Chen, 2022). Blended learning also constructs an inclusive learning environment for students (Walldorf et al., 2016; Siergiejczyk, 2020). Another possible explanation for the sustainability of these pandemic-implicated practices is the duration of the pandemic, which has allowed for continuous feedback loops (Moore et al., 2021). As a critical accelerator, the pandemic has driven many educators to engage in trial and error and to discover the value and possibilities of integrating different teaching modalities. The extended timeframe has provided educators with the necessary time and space to explore and refine their approaches.

As blended learning becomes a prevalent form of teaching in the new normal, there are three general yet practical pedagogical implications to consider, including why to blend, what to blend, and how to blend. The reasons for blending and the content to be blended are closely intertwined. Educators are advised to reflect on the purpose behind each blend. For instance, can incorporating an online learning component address specific challenges in teaching, such as enhancing student engagement or performance, facilitating higher-order thinking, or managing large class sizes? If blending can improve teaching and learning, educators can subsequently design courses and programmes that align with the intended learning outcomes. Determining how to blend would be more complex. Educators should consider the roles of blended components, such as whether the online learning component will complement, supplement, or potentially replace certain aspects of teaching and learning content. As educators interact with diverse students and pedagogical contexts, there is no recipe for a 'perfect' blend. However, it is essential to establish a system or channel that enables open and timely feedback loops. Formative assessments, rather than relying solely on summative evaluations, can come in handy. Periodic feedback can be gathered from students and co-developers where appropriate and applicable, or through critical self-reflection.

Additionally, three specific factors that should be taken into account for out-of-class blended activities. Time and effort are often two key resources. It is not difficult to imagine that blended teaching and learning would demand extra time and workload, as each element of blends requires thoughtful design and thinking (Tomei, 2004, 2006). However, it would be useful if such additional inputs are evaluated against the *value* of blended initiatives. In other words, do the blends add value and meaning to student learning? This consideration is exemplified by Hudson's candid remark. He commented, "There are seven sections of mock interviews. Personally, I think this is time-consuming for me because each interview section lasts 45 minutes [But] I want to create a more authentic experience for them, so I must organize this number of sections—seven sections". Students' reception should also be considered. Non-classroom activities typically anticipate more engagement and involvement from students, as compared with traditional lecture halls and tutorials. In the words of Claiborne et al. (2020), these experiences can be "student-centric". Given that some students may not be comfortable or familiar with being the focus of attention or being active participants beyond the classroom, it would be beneficial for these non-classroom activities to be *co-created* with students, rather than *created for them*.

Conclusion and limitation

This case study seeks to explore how educators in the context of Hong Kong HE adapted and advanced teaching practices outside the classroom during the pandemic and beyond. Two significant patterns were identified from the cases. First, ERT as the provisional teaching modality played a pivotal role in driving changes in content, pedagogy, and technology. Second, the pandemic-implicated educational practices do not revert to the original form but instead continue to evolve into a blended learning approach. Three levels of blends are identified, including activity-level, course-level, and programme-level blending. The decision to blend also sheds light on the different advantages of the mixed modes. These benefits are expanded learning parameters, improved inclusivity, and enhanced pedagogy.

One potential limitation of this case study is its small sample size, as only four cases were examined. Therefore, caution should be exercised when generalising the findings to other contexts. However, this study places emphasis on the concept of particularisation, which can effectively capture the unique essence of each case. Due to the rich contextual information provided, readers can comprehend and make informed decisions regarding the relevance of the findings to their own pedagogical contexts (Stake, 1995). To address the limitation of the small sample size, this study capitalises on balance and variety of pandemic-implicated practices across different institutions, disciplines, and types of curricula (Stake, 1995).

Seventeen years ago, various e-learning researchers envisioned the future of education to be centred around blended learning (Massy, 2006). Graham (2006, p. 28) made a notable remark: "[a]lthough it is impossible to see entirely what the future holds, we can pretty certain that the trend

toward blended learning systems will increase. It may even become so ubiquitous that we will eventually drop the word *blended* [emphasis in original] and just call it learning ...". And now, after three years of the pandemic, it is safe to reaffirm that blended learning is the optimal approach to take.

Acknowledgments

This work is supported by the University Grants Committee Funding Scheme for the Inter-institutional Collaborative Activities entitled Establishing Effective Virtual Teaching Strategies to Support Learning beyond the Classroom from 2021 to 2023. We would like to thank the inter-institutional teams for conducting interviews with the participants, as well as the anonymous reviewers for their comments on the earlier draft.

References

- Advance HE. (2020). *Fellowship*. <https://www.advance-he.ac.uk/fellowship>.
- Alterri, D., Hindi, M., AlMarar, R., & Shubair, R. M. (2020). Transition to distance learning during the COVID-19 pandemic: Efforts within the Higher Education sector in the United Arab Emirates. *Journal of Applied Learning & Teaching*, 3(2), 31–39. <https://doi.org/10.37074/jalt.2020.3.2.17>
- Antaki, C., Billig, M., & Potter, J. (2003). Discourse analysis means doing analysis: A critique of six analytic shortcomings. *Athenea Digital*, 1(3). 14–35. <https://doi.org/10.5565/rev/athenead/v1n3.64>
- Anzovino, M. E., Mallia, V. A., Morton, M. S., Barker Paredes, J. E., Pennington, R., Pursell, D. P., Rudd, G. E. A., Shepler, B., Villanueva, O., & Lee, S. (2020). Insights and initiatives while teaching organic Chemistry I and II with laboratory courses in the time of COVID-19. *Journal of Chemical Education*, 97(9), 3240–3245. <https://doi.org/10.1021/acs.jchemed.0c00766>
- Appel, C., & Robbins, J. (2022). Language teaching in times of COVID-19: The emotional rollercoaster of lockdown. In J. Chen (Ed.), *Emergency remote teaching and beyond: Voices from world language teachers and researchers* (pp. 3–22). Springer International Publishing.
- Arman, M. S. (2018). Student-centered approach to teaching: It takes two to tango. *The Ahfad Journal*, 35(2), 64–71. <https://www.proquest.com/openview/1ad110e1597a2cdd0618543ed76062e1/1?pq-origsite=gscholar&cbl=5287>
- Bao, W. (2020). COVID-19 and online teaching in higher education: A case study of Peking University. *Human Behavior and Emerging Technologies*, 2(2), 113–115. <https://doi.org/10.1002/hbe2.191>
- Bowl, M. (2003). *Non-traditional entrants to higher education: They talk about people like me*. Trentham Books.

- Bradey, S. (2015, November). Tensions and turning points: Exploring teacher decision-making in a complex eLearning environment. In *Proceedings of the ASCILITE 2015 conference proceedings: Globally connected, digitally enabled* (pp. 31–42). <https://doi.org/10.14742/apubs.2015.993>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Braun, V., & Clarke, V. (2020). One size fits all? What counts as quality practice in (reflexive) thematic analysis? *Qualitative Research in Psychology*, 18(3), 328–352. <https://doi.org/10.1080/14780887.2020.1769238>
- Chen, J. (2022). Effectiveness of blended learning to develop learner autonomy in a Chinese university translation course. *Education and Information Technologies*, 27(9), 12337–12361. <https://doi.org/10.1007/s10639-022-11125-1>
- Claiborne, L., Morrell, J., Bandy, J., Bruff, D., Smith, G., & Fedesco, H. (2020). *Teaching outside the classroom*. Vanderbilt University Center for Teaching. <https://cft.vanderbilt.edu/guides-sub-pages/teaching-outside-the-classroom/>
- de Brito Lima, F., Lautert, S. L., & Gomes, A. S. (2021). Contrasting levels of student engagement in blended and non-blended learning scenarios. *Computers and Education*, 172, 104241. <https://doi.org/10.1016/j.compedu.2021.104241>
- Ewing, L. A., & Cooper, H. B. (2021). Technology-enabled remote learning during Covid-19: Perspectives of Australian teachers, students and parents. *Technology, Pedagogy and Education*, 30(1), 41–57. <https://doi.org/10.1080/1475939X.2020.1868562>
- Graham, C. R. (2006). Blended learning systems. In C. J. Bonk, & C. R. Graham (Eds.), *The handbook of blended learning: Global perspectives, local designs* (pp. 3–21). Pfeiffer.
- Hodges, C. B., Moore, S., Lockee, B. B., Trust, T., & Bond, M. A. (2020, March 27). *The difference between emergency remote teaching and online learning*. EDUCAUSE. <https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning#fn14>
- Hoidn, S. (2017). *Student-centered learning environments in higher education classrooms*. Palgrave Macmillan. <https://doi.org/10.1057/978-1-349-94941-0>
- Iglesias-Pradas, S., Hernández-García, Á., Chaparro-Peláez, J., & Prieto, J. L. (2021). Emergency remote teaching and students' academic performance in higher education during the COVID-19 pandemic: A case study. *Computers in Human Behavior*, 119, 106713–106713. <https://doi.org/10.1016/j.chb.2021.106713>
- Joo, Y. J., Park, S., & Lim, E. (2018). Factors influencing preservice teachers' intention to use technology: TPack, teacher self-efficacy, and technology acceptance model. *Educational Technology & Society*, 21(3), 48–59. <https://www.jstor.org/stable/26458506>
- Jung, I., Omori, S., Dawson, W. P., Yamaguchi, T., & Lee, S. J. (2021). Faculty as reflective practitioners in emergency online teaching: An autoethnography. *International Journal of Educational Technology in Higher Education*, 18(1), 30. <https://doi.org/10.1186/s41239-021-00261-2>
- Khan, B. H. (2021). A global framework for e-learning. In B. H. Khan, S., Affouneh, S. H. Salha, & Z. N. Khlaif (Eds.), *Challenges and opportunities for the global implementation of e-learning frameworks* (pp. 1–14). IGI Global. <https://doi.org/10.4018/978-1-7998-7607-6.ch001>
- Koehler, M. J., Mishra, P., & Yahya, K. (2007). Tracing the development of teacher knowledge in a design seminar: Integrating content, pedagogy and technology. *Computers in Education*, 49(3), 740–762. <https://doi.org/10.1016/j.compedu.2005.11.012>
- Linden, K., & Gonzalez, P. (2021). Zoom invigilated exams: A protocol for rapid adoption to remote examinations. *British Journal of Educational Technology*, 52(4), 1323–1337. <https://doi.org/10.1111/bjet.13109>
- Maddumapatabandi, T. D., & Gamage, K. A. A. (2020). Novel coronavirus (COVID-2019) pandemic: Common challenges and responses from higher education providers. *Journal of Applied Learning & Teaching*, 3(2), 40–50. <https://journals.sfu.ca/jalt/index.php/jalt/article/view/263/263>
- Mahaffey, A. L. (2020). Chemistry in a cup of coffee: Adapting an online lab module for teaching specific heat capacity of beverages to health sciences students during the COVID pandemic. *Biochemistry and Molecular Biology Education*, 48(5), 528–531. <https://doi.org/10.1002/bmb.21439>
- Marshall, C. A. (2016). Barriers to accessing higher education. In C. A. Marshall, S. J. Nolan, & D. P. Newton (Eds.), *Widening participation, higher education and non-traditional students* (pp. 1–18). Palgrave Macmillan.
- Massy, J. (2006). The integration of learning technologies into Europe's education and training systems. In C. J. Bonk, & C. R. Graham (Eds.), *The handbook of blended learning: Global perspectives, local designs* (pp. 419–431). Pfeiffer.
- Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. *Teachers College Record*, 108(6), 1017–1054. <https://doi.org/10.1111/j.1467-9620.2006.00684.x>
- Moore, S., Trust, T., Lockee, B., Bond, A., & Hodges, C. (2021, November 10). *One year later . . . and counting: Reflections on emergency remote teaching and online learning*. <https://er.educause.edu/articles/2021/11/one-year-later-and-counting-reflections-on-emergency-remote-teaching-and-online-learning>
- Mshigeni, S., Sarwar, E., & Kimunai, E. (2021). College students' educational experiences amid COVID-19 pandemic. *Journal of Applied Learning & Teaching*, 4(1), 38–48. <https://doi.org/10.37074/jalt.2021.4.1.20>

- Mulrooney, H. M., & Kelly, A. F. (2020). COVID-19 and the move to online teaching: Impact on perceptions of belonging in staff and students in a UK widening participation university. *Journal of Applied Learning & Teaching*, 3(2), 17–30. <https://doi.org/10.37074/jalt.2020.3.2.15>
- Northey, G., Bucic, T., Chylinski, M., & Govind, R. (2015). Increasing student engagement using asynchronous learning. *Journal of Marketing Education*, 37(3), 171–180. <https://doi.org/10.1177/0273475315589814>
- O'Dea, X. C., & Stern, J. (2022). Virtually the same?: Online higher education in the post Covid-19 era. *British Journal of Educational Technology*, 53(3), 437–442. <https://doi.org/10.1111/bjet.13211>
- Oliveira, G., Teixeira, J. G., Torres, A., & Morais, C. (2021). An exploratory study on the emergency remote education experience of higher education students and teachers during the COVID-19 pandemic. *British Journal of Educational Technology*, 52(4), 1357–1376. <https://doi.org/10.1111/bjet.13112>
- Seabra, F., Abelha, M., Teixeira, A., & Aires, L. (2022). Learning in troubled times: Parents' perspectives on emergency remote teaching and learning. *Sustainability*, 14(1), 301. <https://doi.org/10.3390/su14010301>
- Shinas, V. H., Ly, C. N., & Ozden, S. Y. (2022). *Cases on practical applications for remote, hybrid, and hyflex teaching*. IGI Global. <https://www.igi-global.com/book/cases-practical-applications-remote-hybrid/276085>
- Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher*, 15(2), 4–14. <https://doi.org/10.3102/0013189X015002004>
- Shulman, L. S. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review*, 57(1), 1–22. <https://doi.org/10.17763/haer.57.1.j463w79r56455411>
- Siergiejczyk, G. (2020). Virtual international exchange as a high-impact learning tool for more inclusive, equitable and diverse classrooms. *European Journal of Open, Distance and E-Learning*, 23(1), 1–17. <https://doi.org/10.2478/eurodl-2020-0001>
- Siraj-Blatchford, I., Sylva, K., Muttock, S., Gilden, R., & Bell, D. (2002). *Brief No: 356 researching effective pedagogy in the early years*. <https://dera.ioe.ac.uk/id/eprint/4650/1/RR356.pdf>
- Stake, R. E. (1995). *The art of case study research*. Sage Publications.
- Tomei, L. A. (2004). The impact of online teaching on faculty load: Computing the ideal class size for traditional, online, and hybrid courses. *International Journal of Instructional Technology and Distance Learning*, 1(1), 39–50. <https://doi.org/10.4018/IJOPCD.2019070101>
- Tomei, L. A. (2006). The impact of online teaching on faculty load: Computing the ideal class size for online courses. *Journal of Technology and Teacher Education*, 14(3), 531–541. <https://doi.org/10.4018/IJOPCD.2019070101>
- The Chinese University of Hong Kong [CUHK]. (2020, January 31). *CUHK to start online teaching on 17 February and extend the work-from-home arrangement for staff to 9 February*. <https://www.cpr.cuhk.edu.hk/en/announcement/cuhk-to-start-online-teaching-on-17-february-and-extend-the-work-from-home-arrangement-for-staff-to-9-february/>
- The Chinese University of Hong Kong [CUHK]. (2021, June 16). *Teaching arrangements for term 1 2021-22*. <https://www.cpr.cuhk.edu.hk/en/announcement/teaching-arrangements-for-term-1-2021-22/>
- The Chinese University of Hong Kong [CUHK]. (2022a, January 23). *Important announcement: Online learning and work-from-home*. <https://www.iso.cuhk.edu.hk/eDM/202201/0123/english.html>
- The Chinese University of Hong Kong [CUHK]. (2022b, May 13). *Teaching arrangements for term 1 2022-23 and updates on vaccine pass*. <https://www.cpr.cuhk.edu.hk/en/announcement/teaching-arrangements-for-term-1-2022-23-and-updates-on-vaccine-pass/>
- The Chinese University of Hong Kong [CUHK]. (2022c, December 23). *Teaching arrangements for term 2, 2022-23*. https://www.gs.cuhk.edu.hk/general_announcements/TeachingArrangementsforTerm2202223
- Usher, M., HersHKovitz, A., & Forkosh-Baruch, A. (2021). From data to actions: Instructors' decision-making based on learners' data in online emergency remote teaching. *British Journal of Educational Technology*, 52(4), 1338–1356. <https://doi.org/10.1111/bjet.13108>
- Valtonen, T., Leppänen, U., Hyypiä, M., Sointu, E., Smits, A., & Tondeur, J. (2020). Fresh perspectives on TPACK: Pre-service teachers' own appraisal of their challenging and confident TPACK areas. *Education and Information Technologies*, 25(4), 2823–2842. <https://doi.org/10.1007/s10639-019-10092-4>
- VanLeeuwen, C. A., Veletsianos, G., Johnson, N., & Belikov, O. (2021). Never-ending repetitiveness, sadness, loss, and "juggling with a blindfold on": Lived experiences of Canadian college and university faculty members during the COVID-19 pandemic. *British Journal of Educational Technology*, 52(4), 1306–1322. <https://doi.org/10.1111/bjet.13065>
- Walldorf, J., Jähnert, T., Berman, N. B., & Fischer, M. R. (2016). Using foreign virtual patients with medical students in Germany: Are cultural differences evident and do they

impede learning? *Journal of Medical Internet Research*, 18(9), e260–e260. <https://doi.org/10.2196/jmir.6040>

Zimmermann, F., Melle, I., & Huwer, J. (2021). Developing prospective Chemistry teachers' TPACK—A comparison between students of two different universities and expertise levels regarding their TPACK self-efficacy, attitude, and lesson planning competence. *Journal of Chemical Education*, 98(6), 1863–1874. <https://doi.org/10.1021/acs.jchemed.0c01296>