

Capturing the successes and failures during pandemic teaching: An investigation of university students' perceptions of their faculty's emergency remote teaching approaches

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Abstract

This research investigates teacher candidates' experiences during two semesters of imposed remote instruction during a pandemic. Through qualitative research interviewing, the perceptions of a purposeful sample of five preservice teachers were captured to investigate the faculty's emergency remote teaching approaches. The theory-based interview guide was developed based on six concepts, namely, feedback, care, student engagement, choices, collaboration, and autonomous learning. The results present factors affecting the quality of feedback. Several challenges were identified in the way and the timing in which content was structured, presented, and released. The interviewed participants' engagement levels were determined by regular synchronous interaction, highly structured learning platforms, and precise communication. The challenges of collaboration, a lack of social cohesion, and a lack of adaptations made to the digital curriculum affected students' motivation, engagement, and efficiency levels. Distinct structures, clearly communicated purposes, and a well-defined organization were considered to be key to ensuring learning autonomy. The study contributes to refocusing efforts with a view towards post-pandemic teaching.

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Introduction

In most parts of the world, instruction was moved online literally within the span of a few days in mid-March 2020. On-campus students and faculty were thrust into a remote learning format due to COVID-19. Many faculty members were overwhelmed with the challenges of abrupt mass technology infusion and scrambled to cobble together online courses for their students (Bawa, 2020) while some students were faced with the challenges arising from the lack of “technical knowledge, self-discipline, or effective time management to succeed” (Nowrie, 2021: 9).

How have students’ expectations for the future of education changed? How can their new expectations be translated into instructional approaches more effectively? Enabling “inclusive, personalized, and engaging hybrid learning experiences to bring students together beyond simple videoconferencing and recording of lectures” (Curtin, 2021, para. 5) will be the next big milestone with a view to post-COVID-19 education. The authors agree with Curtin’s (2021) assertion that “while the response of higher education institutions to the pandemic should be applauded, the work is just beginning” (para. 4). Decisions will need to be made about which components of online learning should be permanently embedded in post-pandemic teaching (Curtin, 2021).

One key term that has often been used is emergency remote teaching (ERT). ERT has been defined as shifting face-to-face (f2f) classes to remote delivery modes during a crisis situation with the intent to restore the previous format as soon as the crisis has abated (Bawa, 2020; Hodges et al., 2020). The switch to ERT happens quickly without much advance notice, an extremely narrow preparation window, and varying levels of training and support for faculty. Typically, in ERT, it is unlikely that faculty will take full advantage of the affordances of the online environment as they are waiting to return to their usual delivery format.

Online education, in contrast, is purposefully designed for online delivery of instruction. The design and development of an online learning module requires meticulous and intentional planning, refinement, and systematic evaluation, typically over a period of six to nine months (Hodges et al., 2020). This process should be aligned with nine online learning design options, which include modality (i.e., on-campus, online, hybrid, HyFlex), pacing, student-tutor ratio, pedagogical approach, tutors’ and students’ roles, synchrony of online communication and interaction, function of online assessments, and the feedback source and channel (Beatty, 2007, 2019; Espasa et al., 2019).

To respond to students’ expectations for post-pandemic education, digital and physical components should be seamlessly integrated (Grajek, 2020). Carefully constructed educational scenarios will have to provide a combination of digital, physical, and hybrid elements, while courses with a single learning modality will become the exception. Rather than returning to pre-pandemic academic culture, the delivery of instruction is expected to be agile and maximally flexible. Rapanta et al. (2020) have described the pandemic “as a catalyst that highlighted the need for educational change towards more flexible models and practices that best respond to the complexity and unpredictability of today’s fast and interconnected but still fragile society” (p. 941). The next step is to harness what has worked well during pandemic teaching in order to improve institutional practices (Nowrie, 2021).

The present study aims to identify what has worked well during two semesters of remote teaching, what has not worked well from students’ perspectives, and how these insights might help

to refocus teacher presence and students' learning in the future of higher education teaching (Rapanta et al., 2020).

Literature review

The literature review revolves around six key concepts.

Feedback

Feedback can take many forms and definitions. "Feedback can be just the mark; it can be the correct answers; it can be the correct answers with some comments; or it can take the form of comments and explanations" (Espasa et al., 2018: 501). The type of feedback depends on the phases of learning. Whereas beginning learners will benefit from corrective feedback, process feedback is more suitable for learners as they become more knowledgeable. At the highest proficiency level, students will benefit most from conceptual feedback (Hattie and Yates, 2014). However, students can only be responsive to feedback if the learning objectives are known and understood. Objectives should be expressed as desired outcomes and cross-referenced to a sequence of milestones and subgoals (Hattie and Yates, 2014). However, if the outcomes fail to be specific or the students do not have a clear sense of what success looks like (e.g., worked example), tutor feedback might be more disorienting than helpful.

Feedback can influence the amount of effort that students put into an activity (Hattie and Yates, 2014). If students are aware that supportive, specific, and timely feedback is available for certain tasks, they are willing to invest more time (Northcraft et al., 2011). They can make the connection between the availability (and quality) of feedback and the importance of the tasks. Especially when working toward difficult goals, knowing that relevant and supportive feedback is available increases students' commitment to working harder in order to reach these goals, which is not the case when goals are easy to reach (Hattie and Yates, 2014).

The feedback channel (i.e., audio, video, or written) also plays an important role. In online learning units described in Robinson and Wizer (2016), feedback to students was not only provided via scored rubrics, but it was also accompanied by screen-captured videos showing a student's completed product and the instructor feedback. Espasa et al. (2019) investigated to which extent the feedback channel was associated with personalization, clarification, and accessibility. Students preferred the video channel over the audio and the written channel because it enabled more interaction and dialogue with the tutor and engendered a stronger sense of closeness between students and faculty (personalization). Video feedback also provided more clarity about the assignment and promoted reflection regarding students' learning processes. To create online learning environments with high levels of dialogic feedback, it is recommended that tutors provide feedback before the task is completed, integrate opportunities for systematic and substantive peer feedback, and allow students to resubmit after acting upon the feedback they received (Espasa et al., 2018).

Gikandi and Morrow (2016) investigated the impact and timing of peer feedback. Formative peer feedback has been shown to promote active learning, create meaningful engagement, and affirm students' roles as knowledgeable participants. Immediacy of peer feedback and providing students with a sufficient amount of time to react upon the feedback are two key factors to create successful peer-peer learning support (Gikandi and Morrow, 2016).

Wang et al. (2021) identified 11 categories of feedback and classified them into different levels based on the feedback model by Hattie and Timperley (2007). These 11 types of feedback include diagnostic feedback, feedback for justification, feedback for improvement, feedback on

complementary teaching, motivational feedback, feedback as praise, feedback for enhancing time management, connective feedback, feedback to encourage use of feedback, feedback to foster communication and help-seeking, and emotional feedback. The effectiveness of feedback also varies depending on whether it is individual or at a group-level. Group-level feedback is unlikely to benefit students who have already mastered an objective, while students who have not yet mastered an objective often tend to ignore feedback (Hattie and Gan, 2011).

Creating effective feedback in online learning environments requires careful planning. To create online learning environments with high levels of dialogic feedback, tutors should provide feedback before the task is completed, integrate opportunities for systematic and substantive peer feedback, and allow students to resubmit after acting upon the feedback they received (Espasa et al., 2018). Cramp (2015) emphasizes the importance of regular and sufficient interaction as well as consistent tutor and peer feedback in order to support academic success.

Feedback has also been investigated from the perspective of care and consideration toward students. Frequent constructive developmental feedback demonstrates that instructors care for their students and that “they have not given up on them or on their learning” (Bandura and Lyons, 2012: 523).

Care

Care and an instructor’s presence are two factors that may be instrumental in promoting students’ online learning success. An instructor’s presence in an online environment is determined by “availability, affirmation, and authenticity” (Robinson et al., 2017: 41). Engaging students in meaningful conversations, creating a setting to encourage peer learning, and infusing human elements to an online class are indicators of pedagogical care (Robinson et al., 2017).

Velasquez et al. (2013) reported on teachers with an exceptional caring approach. Their study aimed at describing how the construct of ‘care’ manifests itself in an online environment. Seven themes emerged from their analysis, namely, creating shared experiences, sustaining continuous dialogue, carefully observing and responding to students’ online activity, creating structured and organized learning environments, attending to students’ individual academic needs by offering support and constructive feedback, taking care of students’ well-being, and responding to students’ reactions by giving and obtaining feedback through dialogue (Velasquez et al., 2013). Shared experience refers to the instructor collaborating synchronously with a student to develop shared understanding. Continuous dialogue refers to the frequency with which the instructor initiates dialogue (rather than waiting for students to reach out for support), teacher-student disclosure, the clarity of the student-teacher communication, and teacher accessibility. Continuous dialogue also involves promptness of the exchange, which refers to the speed with which teachers react to students’ requests and how fast they provide support. For example, the students surveyed in Velasquez et al. (2013) highly appreciated the 24-h response time to get instructor support. They expressed that the teachers’ availability and receptivity to their individual concerns meant that they truly cared for them. Care has also been linked to the structure of the online learning environment. Instructional design choices emphasize flexibility in terms of how and when students complete an assignment and the provision of multiple options (e.g., retaking quizzes, resubmitting assignments). These design choices were interpreted as instructor care and consideration toward the students (Velasquez et al., 2013).

Demonstrating pedagogical care and respect means inviting students’ input on classroom practices, responding to their suggestions on how to improve these practices, and encouraging students to “risk their ideas and questions” (Bandura and Lyons, 2012: 525). A caring approach also

emphasizes “dialogue, modeling, provision of practice, attribution of best motive, and scaffolding for the student” (Bandura and Lyons, 2012: 523). Behaviors or strategies that students perceive as demonstrating pedagogical caring and respect include instructor preparation and enthusiasm, encouragement and a safe environment, recognizing diversity of students’ learning approaches, involving students and checking on their comprehension (e.g., retracing steps to support all students’ understanding), providing constructive developmental feedback, and demonstrating instructor availability by answering students’ questions promptly and clearly (Bandura and Lyons, 2012). All of these practices combined will enhance student engagement. Other tools to increase student engagement will be discussed in the next section.

Student engagement

Student engagement is an essential factor in retaining online learners and in preventing feelings of isolation (Bolliger and Halupa, 2018). A key concept determining student engagement in online environments is *transactional distance*. The geographical distance between students and faculty can create transactional distance, which may cause learners to feel a cognitive and emotional distance (Moore, 1993). Bolliger and Halupa (2018) investigated student perceptions of engagement, outcomes, and transactional distance in online courses. They used the Revised Scale of Transactional Distance (RSTD) (Paul et al., 2015) to capture online students’ perceptions of transactional distance in three areas, namely, student-teacher, student-content, and student-student distance. Their findings showed that transactional distance is a valid predictor of student engagement. Teachers can reduce the transactional distance to students by signaling accessibility, offering support, and giving prompt feedback on students’ academic performance. The transactional distance between students and content can be reduced by creating tasks that require synthesizing ideas into new, more complex understandings; evaluating and assessing information, results, and conclusions; and applying theoretical concepts to real-world contexts (Paul et al., 2015). Similarly, dialogues between students to exchange ideas, share peer feedback or negotiate different perspectives can help to reduce the transactional distance between students.

Bolliger and Martin (2018) explored which strategies are perceived as promoting learner-to-learner engagement, learner-to-instructor engagement, and learner-to-content engagement in online learning environments. From the instructors’ perspective, the most valuable strategies include instructor presence, personal and frequent communication with students, and relevant course content. Other beneficial strategies include student collaboration on projects (i.e., learner-learner engagement), instructor feedback (i.e., learner-instructor engagement), and well-structured courses (i.e., learner-content engagement). The least valuable strategies include “the provision of a lot of textual information or content, inclusion of discussions or lounges that were used for administrative reasons (e.g., seat time), and incorporation of inflexible synchronous sessions” (Bolliger and Martin, 2018: 575).

All three types of engagement are critical to ensuring effective online teaching and learning. Instructors viewed icebreaker discussions, interaction during student presentations, and peer review as (very) important factors to increase learner-learner engagement. To increase learner-instructor engagement, the most highly rated strategies included posting regular announcements, email reminders, an informal Q & A forum, using student names, sharing grading rubrics, course orientations, and activities promoting reflection. To foster learner-content engagement, the most valuable strategies included structured discussions, realistic scenarios, and student engagement with content in multiple media formats (Bolliger and Martin, 2018).

A meta-analytic review by [Woldeab et al. \(2020\)](#) challenges the widely held belief that student-faculty interaction in online settings is inferior compared to f2f settings, thereby curbing student engagement. Their study showed that online students actually tend to interact more with the tutor through questions than they get involved in peer interaction. One obstacle could be students' individual pace and progress in asynchronous course formats. Tutors who wish to promote student engagement in online environments should actively create opportunities and tasks to interact with their students, for example, by crafting ideas for projects requiring student-teacher partnership or by engaging students in critical inquiries ([Woldeab et al., 2020](#)). Tutors will need to make informed choices when planning ways to create and sustain student engagement in virtual environments, including the consideration of learner choices, which will be discussed next.

Choice

Choice is a concept commonly referred to in various pedagogical frameworks. Similar to other concepts that are critical to effective online instruction, such as, collaboration, feedback, student-autonomy, self-regulation, tutor and peer support, reflection, and interaction, the notion of 'choice' is a key component of culturally responsive pedagogy and Universal Design for Learning (UDL).

UDL is a framework designed to augment equitable learning opportunities for all learners with differing abilities ([Kumar and Widemann, 2014](#); [Rose and Meyer, 2002](#)). It builds on three major principles encompassing three guidelines each and a total of 31 checkpoints ([CAST, 2018](#)). The first principle requires instructors to provide multiple means of engagement to guarantee learners' access to learning. [Ginsberg \(2005\)](#) emphasizes the importance of student choice to increase personal relevance, which in turn helps to recruit interest, sustain effort, and foster self-regulation, all of which are guidelines of the first UDL principle of providing multiple means of engagement. The second UDL principle refers to multiple means and representations of information enabling learners to access learning content in their preferred ways. The third UDL principle refers to multiple means of action and expression to provide varied opportunities for students to demonstrate their learning ([CAST, 2018](#); [Kumar and Wideman, 2014](#); [Rose and Meyer, 2002](#)). One key premise is that barriers in the learning context be removed by "proactively and intentionally designing instruction that provides flexible pathways and choice" ([Rao et al., 2020](#): 219).

Providing choice has been associated with increased engagement. [Boothe et al. \(2020\)](#) investigated how choice impacts student engagement in an online environment with a focus on the third principle of UDL (i.e., multiple means of action and expression) as a way to evaluate student learning. Their students in the teacher education program were free to choose how they wanted to demonstrate their learning. They created or composed a video, audio, presentation, research paper, poem, instructional handouts, children's storybooks or participated in a professional development opportunity ([Boothe et al., 2020](#)). They enjoyed being allowed to make a choice and reported that they would transfer this experience to their own future classrooms. Giving choices helps to embrace all the different ways in which students prefer to learn.

Instructors who emphasize personal relevance and choice when creating learning activities help to create a positive attitude toward the learning experience ([Robinson and Wizer, 2016](#)). The Motivational Framework for Culturally Responsive Teaching by [Wlodkowski and Ginsberg \(1995\)](#) emphasizes the importance of *developing attitude* by creating favorable dispositions toward learning, including the provision of choices regarding content, interaction, ways of demonstrating learning, assessment, and feedback modality. For example, flexible discussion formats can accommodate students' preferred choices regarding group size. Similarly, students should be allowed to choose their preferred communication tools, such as chat, video, audio, or text. Considering

students' preferences regarding synchronous or asynchronous interactions is an important component of online course design.

There is extensive research available about the implementation of UDL principles in online instruction. In a study about online instructors' familiarity with UDL (Westine et al., 2019) and their implementation of UDL guidelines, the UDL guidelines suggesting options for communication, expression and comprehension were the most frequently used. In contrast, only a minority of instructors allowed students to choose in which way or format they wanted to demonstrate their learning. Similarly, findings by Capp (2020) indicated that while instructors are skilled in providing differentiated instruction, they are less confident in allowing students to choose how they would like to show mastery of their learning. Instructors demonstrated higher self-efficacy in applying the first UDL principle (i.e., multiple means of representation) but reported feeling less confident about how to implement the second and third UDL principle (i.e., multiple means of expression and action, multiple means of engagement) (Capp, 2020).

Providing choices also plays an important role in planning collaboration.

Collaboration

Collaborative learning in an online environment requires additional considerations compared to f2f teaching. The physical isolation of students in online learning environments has been widely reported. A lack of interaction may result in feelings of alienation, withdrawal, and disconnection (Phirangee, 2016). Teamwork, relationship, and interaction should be purposefully planned in online instruction.

Intentionality in the design of collaborative environments can take many different forms and shapes. Examples include activities that facilitate rich encounters among learners and instructors, help create a sense of cohesion and belonging, encourage learners to share their knowledge base and experiences with peers, foster positive student-teacher and peer interactions, and emphasize student-teacher partnership (Nussli & Oh, 2020). For example, the set-up of an online discussion forum in terms of group structure, organization, and expected student activity levels may affect the nature and degree of deep learning (Johnson et al., 2017).

Collaboration also plays a prominent role in *ubiquitous* learning, which is an offshoot of mobile pedagogy. Ubiquitous learning encompasses ten dimensions. These include peer interaction, self-regulated learning, scaffolded learning opportunities in authentic contexts, personalized learning, positive learning effects, and increased learner motivation (Huang et al., 2011; Hwang et al., 2008, 2010; Peng et al., 2008). Ubiquitous learning enhances the interactivity of the learning process because it offers a common platform for students and e-tutors to interact with each other. It also emphasizes the notion of learning community in digital environments as it builds on collaborative projects designed to engender a sense of cohesion among learners.

Davidson and Katopodis (2020) make five recommendations for successful online collaboration, namely, structuring group projects around real-world issues, requiring the tutor (rather than the students) to create an equitable distribution of labor, creating "pods large enough to guard against ghosting" (para. 12), providing project timelines with clear phases and checkpoints, assigning pre-work, and eliminating competition for grades within groups by using contract grading in which roles, tasks, and deadlines are specified. Several of these recommendations will also help to foster learning autonomy, which is the last of the six concepts framing this study.

Learning autonomy

Students' learning autonomy is promoted in an environment that allows and requires them to actively control their own learning progress. Digitally mediated environments help increase students' learning autonomy by giving them the control over personal choices and empowering them to make decisions on how to best support their own learning processes (Dell et al., 2015). Similar to the concepts of *self-regulation, reflection, support, collaboration, cooperation, feedback, interaction, and choices*, the concept of learning autonomy is an integral component of multiple pedagogical paradigms, for example, UDL and mobile pedagogy. Mobile learning offers great potential to promote learning autonomy (Huang and Chiu, 2015; Lee et al., 2015) by supporting students in learning in their own pace at their individual level and monitoring their progress, thereby reducing teacher-dependency incrementally.

Establishing student-teacher partnerships to share responsibilities, decision-making, problem-solving, and assessment processes with students are effective ways to promote learner autonomy (Hung et al., 2004). Learner autonomy can be fostered by using online course tools that purposefully optimize autonomy (Robinson and Wizer, 2016).

The literature review concludes with a short introduction to HyFlex, which is anchored in several of the concepts reviewed and is expected to be a key driver in the future of hybrid education.

HyFlex

The term HyFlex stands for Hybrid-Flexible, which combines online and f2f learning (*hybrid*) with *flexibility* in allowing students to choose if they wish to attend f2f sessions or online sessions without incurring a "learning deficit" (Beatty, 2019: 1). Several of the concepts reviewed in this section align with the four fundamental values of the HyFlex model, namely, *learner choice, equivalency, reusability, and accessibility*, which are grounded in the principles of UDL. Learner choice allows learners to flexibly choose their participation mode (e.g., synchronous, asynchronous, online, offline) for any given unit, topic, or week. Equivalency ensures that all participation modes lead to the same or similar learning outcome, although it is the most difficult value to implement according to Beatty (2019). Reusability capitalizes the use of artifacts produced both by classroom students (e.g., pictures of flipchart posters, discussion notes) and online students (e.g., chat logs, asynchronous discussion posts) as valuable learning supports for the entire class, regardless of the participation mode. Accessibility is meant to ensure that all participation modes provide equitable access to content, activities, and resources and to equip students with the necessary skills set to access the technology (Beatty, 2019).

Gap in the literature

Although there is a large body of research evaluating online and hybrid teaching, the research on ERT is only just starting to grow. While there is ample research about the six key concepts that are the main focus of this study, there is limited research investigating the connection between ERT and these six concepts specifically. There also appears to be a lack of research describing undergraduate students' perceptions of faculty's skills in providing ERT with a focus on these six concepts. These insights can assist educators and instructional designers in refocusing education. This study can add to the growing body of research on the teaching effectiveness in hybrid learning environments.

Methodology

Purpose and research questions

This qualitative research investigates teacher candidates' experiences during two semesters of (imposed) remote instruction. The study was framed by the following six questions: *What role does feedback play in online learning, how can instructors demonstrate nurturing and caring, what can educators do to promote student engagement, what are effective ways to provide choices to their students so they can demonstrate their learning in multiple ways, how can educators promote collaboration among students, and how can educators foster autonomous learning?*

Participants

A purposeful sample of five undergraduate students studying in a teacher education program in Switzerland participated in this interview study. There were five criteria for selection. The first criterion was that all interviewees needed to be third- or fourth-year students enrolled in a Bachelors program for primary education (i.e., teacher training program) at a university in the German-speaking area of Switzerland. Second, they had completed two semesters of (imposed) online learning (i.e., spring and fall of 2020). Third, they had received at least 2 years of f2f instruction within the same department prior to the migration to online learning. Fourth, they needed to be rather fluent in English for interviewing purposes. Fifth, they needed to feel comfortable talking about online learning and technology.

To obtain the sample, the first author presented the research goal of this study in one of her classes and asked for volunteers. Ten out of 11 students (ten female/one male) would have met all of the above criteria. Four female students were willing to be interviewed. The male student participating in the pilot interview was not part of the same cohort and was contacted separately. He also met all five criteria for selection. Within their three (or four) years of study, these students had attended both f2f and remote classes with various faculty members from different departments at the Institute for Primary Education. All five interviewees had taken classes with the first author and all interviewees, except for one, had previously met the interviewer (second author) either in-person when he hosted several f2f teaching sessions as a Fulbright Specialist in 2020 or remotely on the occasion of a guest lecture in 2019.

Interviews

The second author conducted semi-structured one-to-one interviews with each participant between January 27 and 10 February 2021. The interviews lasted between 35 and 47 min. The total duration of all interviews was 214 min. The total number of words produced (including interviewer's questions and comments) was 43,901 words.

Interview questions. The full interview guide, including the protocol, is attached in the [appendix](#). The same author conducted all interviews to ensure consistency. The interview questions were peer-reviewed and pilot-tested. A meticulous audit trail was created in the development and revision of the interview questions as well as in the coding procedures. All three authors were involved in the development of the interview questions, although the third author strictly focused on the peer-review. Automatic audio transcription in ZoomTM was used to generate transcriptions of the interviews. The 29 interview questions were developed in multiple stages ([Table 1](#)).

Table I. Development of 29 interview questions.

Step	Description	Responsibilities
1	Identify key concepts based on a literature review.	Authors 1 and 2
2	Development of interview questions based on the literature review.	Authors 1 and 2
3	For each interview question, the purpose was clearly formulated and tied to the research questions.	Authors 1 and 2
4	In-depth peer-review resulting in the reformulation, clarification, and specification of some interview questions. Several follow-up questions were added. Specific examples were added.	Author 3
5	Pilot interview with a male student in Switzerland.	Author 2
6	Analysis of responses to ensure that the interview questions measured what they were designed to measure. No changes were necessary.	Authors 1 and 2
7	The participant of the pilot-interview had a high level of technology adoption, which is why it was decided to review the questions again after the second interview.	Authors 1 and 2
8	First interview with a female student in Switzerland was conducted.	Author 1
9	Immediate review of the responses after the interview. No changes were necessary.	Authors 1 and 2

Interview protocol. The interviewees received a brief overview of the research purpose by email in January 2021, namely, how their experiences during two semesters of imposed online learning would help to advance instructors' teaching skills. They were informed that they would be asked to talk about their online learning experiences based on the previous two semesters (i.e., spring and fall of 2020) across *all* of the courses that they had been taking at the Institute for Primary Education, that the interview would be conducted on ZoomTM, that it would be recorded and that it would last between 30 and 45 min. The interviewees (located in Switzerland) then picked a suitable date for the interview with the interviewer (located in the U.S. with a 9 hour time difference). They received a link to a ZoomTM meeting 2 weeks prior to the interview from the interviewer. Three days prior to the interview, they received the interview questions ([Appendix](#)) from the interviewer by email. The interviews were purposefully conducted after they had completed the semester and after the first author had submitted the students' final grades.

Data analysis

The qualitative data emerged from one source, namely, from the live interviews with five preservice teachers. The interview transcripts for this study were evaluated to answer the research questions and better understand the impact of an imposed online learning environment on preservice teachers. The data analysis approach was both deductive and inductive. The major themes were pre-determined as the interview guide was purposefully structured around six theoretical concepts, namely, feedback, care, student engagement, choices, collaboration, and learning autonomy.

The reviewer (third author), having no experience with, or knowledge of the participating preservice teachers, thoroughly analyzed each participant's interview data to allow the themes and categories to emerge, organized by research question. Using the collected and structured data, the reviewer employed a clarifying approach to eliminate any social commentary and highlighting the essential and non-essential material based on the purpose of the study and the research questions ([Kvale, 1996](#)). The data were condensed into themes and categories by combining similar responses and comments. Using this approach, a summary of major ideas was developed for each participant

under each research question. This was used to examine similarities and differences between and among the participant responses. The first author then read all transcripts three times, reviewed the third author's coding decisions, and discussed the coding decisions with the second author.

Results

The results are organized around the research questions. [Table 2](#) provides an overview of the results.

Table 2. Overview of results.

Concept	Themes
Feedback	<ul style="list-style-type: none"> • Factors reducing quality of peer feedback • Role of feedback in clarifying expectations • Impact of feedback on students' motivation • Timing, frequency, and amount
Care	<ul style="list-style-type: none"> • Availability of instructional supports • Student-instructor interaction • Instructor accessibility
Student engagement	<ul style="list-style-type: none"> • Synchronous interaction • Video tutorials • Online platforms • Need for structure • Need for relevance
Choices	<ul style="list-style-type: none"> • Very limited choices regarding modality • Very limited choices regarding topic • No change f2f vs. remote instruction
Collaboration	<ul style="list-style-type: none"> • Challenges of online collaboration • Creating a sense of social cohesion • Splitting up group projects • App-supported collaboration • Efficiency of group work
Learning autonomy	<ul style="list-style-type: none"> • Individual pacing • Increased productivity • Clear instructions and assessment criteria • Access to content

Feedback

Three interview questions were designed to capture the frequency of feedback, to which extent the received feedback helped students to understand the course expectations, supported students' learning, and helped to sustain their motivation throughout the semester. The dominant themes that emerged included factors reducing the quality of peer feedback; the role of feedback in clarifying expectations; the impact of feedback on students' motivation; and the timing, frequency, and amount of feedback.

Factors reducing the quality of peer feedback. When students were asked to provide peer feedback on each others' work (e.g., oral presentations, written work, or poster presentations), they were guided by a checklist to help with the peer assessment, a criteria grid showing the descriptors at different levels of performance, or they received a set of prompts to frame their peer feedback. One student described the impact of the feedback that she provided to and received from her peers. Not knowing her peers well and only meeting them for short periods of time online were reasons why she made less of an effort to formulate solid feedback and why she was less honest about her evaluation of her peers' performance. Conversely, the feedback that she received from her peers was at the surface level and barely supported her learning process.

Sometimes I also caught myself not actually doing it very thoroughly because you don't know the other student really well. So you sometimes don't know how well they're going to take it, and you know the communication when it's just on paper and you have to check a few boxes, it's really impersonal. And that sometimes held me back from actually being sincere and writing down what I actually think. And sometimes I gave feedback that was maybe a bit too good, and I also felt like that's what I received a lot of just 'excellent, excellent, excellent' that didn't really help me a lot.

Role of feedback in clarifying expectations. A recurring answer was that the remote instruction caused insecurities regarding task fulfillment. Students argued that "working online made it hard to know if you were on track" and that it created an "insecurity of being on track and passing" the course. All interviewed students mentioned being unsure about the instructors' expectations in many different courses, for example, "...there were many times where I was really unsure what they exactly wanted from me." This insecurity was further intensified by inconsistent feedback practices and limited tutor accessibility. A f2f environment was perceived as being easier to stay on track than an online environment.

Impact of feedback on motivation. In the few courses in which instructors provided regular feedback throughout the semester, the instructor feedback was perceived as motivating. Feedback also helped to counteract feelings of isolation. Conversely, in the courses where instructors did not provide feedback or only provided feedback once at the end of the semester, students' motivation decreased. Limited instructor accessibility to answer students' questions about task fulfillment criteria further aggravated students' frustration levels.

Timing, frequency and amount of feedback. Students usually received tutor feedback at the end of the semester. In rare cases did they receive sporadic feedback on assignments or mini-projects. Although the students appreciated receiving summative feedback from their tutors after submitting their final projects, it would have been more helpful to receive formative feedback earlier in the semester.

...mostly just in the end of the semester, so when everything is done already. And of course it's nice to receive feedback so that your work is valued, but it doesn't really help you for your learning, right, so it was a bit too late.

"Even a little bit of feedback helped" as long as it was regular and timely. Students' appreciation for tutor feedback was higher when they received it soon after students had turned in (or presented) the deliverable. Understandably, tutor feedback was perceived as being less helpful when it was received several weeks later. They all would have preferred more consistency across courses and

they all would have appreciated receiving timely instructor feedback on a more frequent basis to better support their learning process. “It needs to be done regularly to really support the learning process, so you can actually use that [feedback] in other situations.”

Care

Three interview questions were designed to explore instructor behaviors and strategies that were perceived as nurturing and caring, to inquire about instruction supports (e.g., through frequent communication, instructor accessibility, open lines of communication), how instructors demonstrated that they cared for their students’ learning, and to which extent they were available for support. A great disparity emerged in terms of availability of instruction supports, student-instructor interaction, and instructor accessibility.

Availability of instructional supports. Even if students did not take advantage of tutor support, they appreciated if (and when) it was available to them. However, the offer of support was highly inconsistent. Students’ answers ranged from “I felt like we were left hanging ... there wasn’t much instruction at all, no support” to “some instructors offered feedback sessions via Webex™ or Zoom™, which I didn’t use that often, but it was at least it was there, so it felt like we could approach the instructor if we wanted to.” Some tutors signaled interest in students’ work progress and regularly reached out to students. “When we had the assignments ... where are you? How can I help? And there were others who didn’t really check in at all.” The need for support was higher when task descriptions were unclear and required contacting the tutor. However, delayed tutor responses complicated the process of obtaining instructional support.

I sometimes had to wait one week before I got the answers. And I think that’s especially when they didn’t ... provide enough material or when they were not clear enough, a lot of questions came in so they needed time to answer all these emails that came in, because ... the instruction of the task was not clear enough.

Student-instructor interaction. In some classes, tutors provided regular synchronous meetings, which were appreciated for various reasons. For instance, the meetings were perceived as an opportunity for tutors to show signs of caring and nurturing.

And there again some professors really make the effort just by knowing your names, because we have quite small classes. We’re only 15 to 25 people in a class and some really made sure to know your name. They knew what project you were working on, what you were interested in. They sometimes remembered just small things and that just showed that they actually will [sic] see you as a person, and not just one of 200 students. And that and also the feedback just show that they really care. If they also maybe just provided extra material if you were interested in something or provided tasks that could be done very individually, regarding your interest, if they just try to make it as fun and as creative as possible, that really showed that they care about this and want to make it as good of a situation as it could in those times of online learning.

Instructor accessibility. Some instructors kept open lines of communication, sent out regular emails, and encouraged students to reach out to them if they had any questions or needed support. Some instructors were good at responding to students’ emails in a timely manner, even if they had not explicitly encouraged students to reach out to them. Some instructors, however, were barely

accessible for questions, were late in responding to questions, or even failed to respond at all. In very rare cases did tutors communicate right at the beginning of the semester that students should try to contact their peers if they had any questions and that they should refrain from contacting the tutor.

Not receiving an answer to a question was challenging because it would mean that the students sometimes had to discontinue working on their assignment until they heard back from the tutor. "... when you really need an answer and really soon and it comes 1 week later, that's not very pleasant." In some cases, students needed to send follow-up emails to the tutors to get an answer.

Although all students repeatedly mentioned the usefulness of synchronous online check-in meetings with the instructor and their peers, they also appreciated optional attendance. Students enjoyed the social contact with their peers during these meetings but also emphasized that these sessions should be kept short (no more than 1 hour) and that the time should be used for highly interactive tasks, such as having the opportunity to work in a small group with two or three peers in a separate breakout room. Using this time for 'live' lectures should be discouraged.

Student engagement

Two interview questions were designed to capture what supports or instructions the tutors provided to help students engage with the course materials and the course activities. Synchronous interaction, video tutorials, online platforms, the need for structure, and the need for relevance emerged as key themes.

Synchronous interaction. Live meetings where students could ask questions and have peer discussions were perceived as motivating and beneficial to their learning as long as such discussions were framed by clear goals and specific prompts. "I liked it when we went to small groups and were able to exchange [sic] there, but what was very important is that we ... had guiding questions. The tutor made it very clear what we should talk about." When students knew ahead of time that they needed to prepare materials (e.g., reading an article) and present it during synchronous class time, it increased their motivation and they experienced increased learning. "The Zoom™ meetings where you could discuss with your peers or ask them questions and then have a discussion that really also motivates to read your article, summarize it so you're prepared and so that you can actually benefit."

Video tutorials. Having access to video tutorials and audio-recordings (i.e., podcasts) was perceived as being helpful and engaging. "Some [tutors] provided videos tutorials for some tasks or just the PDF with the most important steps." They appreciated being able to download resources from the online course site. One student indicated that it was difficult to process written and audio-only instructions and that a video tutorial would have been preferable. "I missed something I had to write down and forgot to give that to the instructor. So if there was some video or just talking it through helped me a lot more than just plain written text."

Online platforms. Different instructors used a large variety of online platforms and programs. The statement, "When used well, platforms helped" indicates that some platforms were used more effectively to mediate learning than others. One concern was that "figuring out the technology was time consuming". There was an urgent need for clear instructions on how to use online platforms, the need for clear task descriptions, and the need for immediate, easy and unrestricted access to these platforms.

...programs that are accessible so that I don't have a lot of problems or that I need to switch to a specific internet browser. I had some programs where I needed to use Chrome instead of Firefox. To figure that out was time-consuming. If the task is clear, it says 'hey you need to use Chrome,' then it's okay. But if you don't know that, when you spend like one hour trying to figure out why the program doesn't work, it's lost time that you cannot get back.

Need for structure. Students appreciated a clear structure to the LMS, the syllabus, the course calendar, and the task descriptions. Some instructors were perceived as "doing very well with the online platform". But it became clear that without structure, students had difficulties scrambling together the assignments, which also affected their ability to engage with the content and activities. One student mentioned, "don't know if it improved engagement but structure was important", indicating that structure may have played a role in task engagement. This statement was concurred by another student who argued that it was "...super difficult to find the information you want. So actually what helped me the most is this structure." Several interviewees mentioned that they had struggled when the material was either unclear or hard to find.

I had one teacher who gave a lot of assignments, but these assignments were all over the place. So we had the semester plan, we had PowerPoint presentations, and we had something else. And in every one of those tools, s/he put assignments. But they were not all in one document together, so I had to go to three places to take what I need instead of just having one, for example, a semester plan, where I see the week, I see the topic that we will engage in. The homework that I have to do with the assignments and when they are due. For the teacher it was clear, everything was clear, s/he didn't understand why I couldn't find certain things. Or I didn't quite know that they had an assignment and extra assignment, but that was because (s)he put the assignments in three different places.

Need for relevance. More time was committed to a task or an assignment if students perceived it as meaningful to their skills set as future teachers. One student put it like this, "My first thought, and always, was like 'Do I need that to be a teacher?'" and right when my answer was 'no, that's not so much needed,' then I was not very interested in it, and I did the bare minimum."

Choices

One interview question was designed to capture if students had choices in demonstrating their learning, for example regarding the modality. Overall, there was unanimous agreement that few and limited choices were available. There appeared to be little to no difference compared to previous semesters delivered f2f.

In some classes, students were able to choose a topic while the modality was imposed on them. In other classes, students were free to choose the modality while the topic was assigned to them. "You could contact the tutor and say 'that's my idea, I would like to do it like this,' and then she gave you a feedback if it's okay or not, and that's something I appreciated." Students were able to decide if they wanted to present 'live' in ZoomTM or pre-record their presentation and upload the video to the collaborative SwitchTubeTM channel for peer and tutor feedback. They were free to choose whether they wanted to write a paper or deliver an oral presentation or what kind of music style they wanted to pick for their music project. It appears that there was no major change regarding choices when comparing f2f (i.e., prior to spring 2020) and remote instruction.

You have that choice, but you did have the choice before we went to online learning so essentially ‘no’ ... the course design stays the same, but within the course the smaller tasks that we had to do from week to week, some instructors actually gave us the choice what we want to do.

Collaboration

Three interview questions were designed to capture the interviewees’ positive and negative experiences of peer collaboration as well as the differences between f2f and remote collaboration. The key themes that emerged included the challenges of online collaboration, creating a sense of social cohesion, splitting up group projects, app-supported collaboration, and efficiency of group work.

Challenges of online collaboration. One main reason why collaboration in a remote setting was challenging was that some students failed to show up for online meetings to discuss the group work assignment. “You cannot force them, whereas before, when you met them in university or something different [sic], you know you could approach them and say, ‘you just left us there hanging. We were waiting for you.’” Typical issues with group work appeared to be aggravated by the remote setting. “Groups are difficult with people who don’t share your ambition or values and it made [it] harder online, trying to find times to collaborate and do a video call.” F2f environments were perceived as more effective in mediating group work. “In f2f settings we could just talk every week before the class or 10 min after and just do it like that, that made it a lot easier.” The remote collaboration (or lack thereof) also appeared to affect some students’ learning, as one interviewee mentioned, “When working online, groups cannot check with other groups to compare understandings.”

Creating a sense of social cohesion. There was consensus that the remote environment was not conducive to promoting collaboration or creating a sense of cohesion. There were group projects in which students “never really talked” to each other. They would split up the work as efficiently as possible and everyone would focus on their individual portion of the project.

For that project, I would have loved to have more face to face contact or classes in a regular sense, so we could actually talk to each other, have time given [sic] by the teacher where we could speak to each other, because I think it was kind of a lack of engagement between us. We didn’t really know each other, so we just made our own thing and we were done with it.

Overall, there was consensus that f2f settings increase social cohesion, with the exception of a few occasions when students experienced a sense of togetherness despite the remote setting; this was dependent on group composition and dynamics.

Not only did students talk more to each other in f2f settings than in remote settings; they also clearly expressed the benefits of f2f meetings. The social aspect in terms of getting to know people and building up a personal connection was one of the reasons. “I do prefer the f2f group work setting in that sense, also just [to] get to know the people.” Brainstorming and visualizing ideas together was another factor. “What I missed sometimes it’s just to sit with other people and talk about something while we write something down. So if I have an idea, I sometimes like to draw it or to write it down.”

Some students also mentioned surprisingly positive experiences with online class meetings. “It was not always mandatory to have the camera on for us [sic]. So in some modules you did not see any faces, but it went quite well. I was very surprised how much myself [sic] but also my peers were

engaged.” Mainly, this was observed when students were asked to informally report on their learning and their projects or when they were engaged in group discussions or mini-tasks in virtual break-out rooms.

Splitting up group projects. It was emphasized that the collaboration was different in the online setting than during previous f2f semesters. “Working together was not the same as if you would meet and work together.” One reason was that it would have been impractical to be online and collaborate in real-time. “When I had to do group work, we also had the feeling that it’s too complicated to work [it] through [together].” Instead, students pragmatically decided to split up the work.

... that aspect of being together ... got lost in another group project I did where we never really talked. We had maybe one meeting and there was one meeting with the teacher as well. And we had in the end the presentation together. So everyone just recorded their own audio and then gave it to the next one, they recorded their audio and made their PowerPoint slides and to the next one, and so on. So it wasn’t really a group project, more a project where everyone kind of in the end put in their own slide.

App-supported collaboration. Using apps for group facilitation was popular for several reasons.

Even though you never met in real life, you kinda started friendships. You made a Whatsapp™ group and then you started to talk about the task you had to do. But then you also started to use this Whatsapp™ group for ‘what do we need to do there’ or ‘what do you need’ or ‘does someone understand this?’

This may get back to the idea of needing other humans to assist in helping stay on track and understand expectations.

Efficiency of group work. There was clear consensus that the remote setting saved time, especially in terms of zero travel time. “Nowadays we use Zoom™ to chit chat with each other, we have Whatsapp™ and other social media that [sic] we can just press a button, you know, and call everyone from the group and it made it easier to meet online than offline.” The group size was also mentioned as an important factor. “Because a group of two can easily meet. A group of three and a group of four, it’s really hard to find a time that works for everybody.” F2f settings were associated with more time spent on social conversation, whereas the remote setting was rather associated with efficient group work. But, overall, a real sense of collaboration tended to be lacking.

Learning autonomy

The final three interview questions were designed to capture examples of projects, course formats, instructional approaches and supports that allowed students to work independently. Four key themes emerged, namely, individual pacing, increased productivity, clear instructions and assessment criteria, and access to content.

Individual pacing. Students associated several experiences and observations with ‘independence’. For example, they reported that being able to re-watch online video tutorials helped them to process content at their own pace. “...online tutorial videos you could go back and look at multiple times helped to support independence.” A flexible schedule was also mentioned repeatedly when discussing the asynchronous ‘offline’ modality. “We could also just do the tasks in our own time, and

maybe not in those 2 hours that the course would take place usually, so that allowed me to be more independent.” The availability of online quizzes was appreciated as it accommodated learners’ wishes to work at their own pace. For example, after reaching a pre-defined score (e.g., 80%), they were able to move on to the next task.

Increased productivity. The flexible schedule was perceived as increasing productivity. “It helped me to be more productive because I wasn’t forced to work from like nine to five. I could also work in the nighttime or on the weekend and just be a bit more free in that sense.” However, not everyone was able to cope well with this new-found freedom. “I was quite disciplined so I can’t really say that I struggled with that, but I do know from [sic] friends who did struggle not having that structure.”

There were concerns about the synchronous aspect when students were expected to be present online and in real time for an extended period of time. “I struggled more when I had to attend every single week for like 4 hours of video calls from eight to 12, then I just yeah that wasn’t really my thing.” Being ‘unbound by space and time’ was appealing to all interviewees.

We could decide on our own when do we want to do the task, how do we want to do it, where do we want to do it. You could do it whenever you want it to so you could also like just not do it, and then do like all the things at the end of the first half of the semester.”

There was great variation in terms of due dates. Some classes required weekly submissions, whereas other classes required task completions by mid-semester or just one single submission by the end of the semester.

Clear instructions and assessment criteria. It was emphasized that learning autonomy was highly dependent on the provision of clear assessment criteria and detailed task descriptions. Students relied on having access to a “criteria grid so everything needs to be clear, I need to be able to read the instructions and say ‘Okay, ... I can go and do the work’. But if I needed some kind of instruction, it’s very time-consuming.”

Access to content. Students appreciated having access to all materials at the beginning of the semester. “At the beginning of the semester they [the tutors] prepared all the tasks for every week and then they gave you a weekly video update, which was always on the top [of the Moodle page].” Rather than releasing the content on a weekly basis, providing immediate access to all weeks at the beginning of the academic semester helped to increase autonomy. In order to help students keep track of activity completion, some tutors used the ‘checklist’ function on the LMS that allows students to check off completed activities and see a visual progress bar that shows what percentage of the list they have completed so far. “...and also these files where you could do the check thing ... and then you could like do a tick and you knew, ‘okay it’s done’.”

Discussion

The discussion is organized around the six major concepts, namely, feedback, care, student engagement, choices, collaboration, and learner autonomy and the corresponding research question.

Feedback

What role does feedback play in online learning? The interviewees wished for more timely and frequent feedback from their tutors to better support their learning. However, for faculty members with hundreds of students each semester, it might be impractical to provide frequent 1:1 feedback. For example, it would be inconceivable to create the type of feedback that [Robinson and Wizer \(2016\)](#) describe, namely creating a screen-captured video showing the student's completed product including the instructor's feedback. The participants also repeatedly mentioned that they would have liked to obtain sporadic feedback on their progress throughout the semester in order to know whether they are on the right track and how to improve their work. This request seems very reasonable and echoes [Espasa et al. \(2019\)](#) who reported about a significant increase in the quality of students' second drafts after incorporating the tutor's feedback on their first draft.

The participants were more motivated to work on tasks if they received supportive, specific, and timely feedback, whereas a lack of feedback affected their motivation levels. Some types of feedback were regarded as more instrumental in sustaining their engagement levels. From among the 11 categories of feedback identified by [Wang et al. \(2021\)](#), the participants in this study emphasized the value of motivational feedback, feedback as praise, connective feedback, as well as feedback to foster communication and help-seeking. Based on the interviewees' answers, it is unclear whether the irregularity of feedback affected their academic success, as described in [Cramp \(2015\)](#). Regular tutor feedback was clearly identified as the instructor caring for them and their learning success ([Bandura and Lyons, 2012](#)).

Care

How can instructors demonstrate nurturing and caring? The interviewees appreciated whenever a tutor was available to engage students in meaningful conversations, which underscores the importance of an instructor's presence in an online learning environment building on "availability, affirmability, and authenticity" ([Robinson et al., 2017: p. 41](#)). It was appreciated when instructors created 'spaces' that helped to compensate for the spontaneous student-student and student-teacher interaction ([Rapanta et al., 2020](#)) that would mostly be missing in a remote setting. Several constructs related to the notion of care were identified in the interviewees' answers. Continuous dialogue in which the tutor reaches out to the students ([Bandura and Lyons, 2012](#); [Velasquez et al., 2013](#)) assured them that the tutor cared about their learning. In a similar vein, a structured learning environment and responding promptly to the students' queries were frequently mentioned indicators of pedagogical care, which aligns with [Velasquez et al. \(2013\)](#). Some participants mentioned the instructor's preparation and enthusiasm ([Bandura and Lyons, 2012](#)). However, constructive developmental feedback, which is also an indicator of pedagogical care ([Velasquez et al., 2013](#)), was barely mentioned. Pedagogical care is intricately intertwined with student engagement.

Student engagement

What can educators do to promote student engagement? Multiple references were made to the concept of transactional distance, which has been shown to determine student engagement in online environments ([Paul et al., 2015](#)). Some faculty members were able to reduce the transactional distance to their students by actively signaling that they were available for questions and by encouraging students to reach out to them if they needed instructional

support. However, giving prompt feedback on students' performance, which is also a critical strategy to reduce transactional distance (Paul et al., 2015), was mostly absent.

The findings concur with the strategies described in Bolliger and Martin (2018) to increase engagement. In particular, instructor presence was highly valued, as evidenced by personal and regular communication between students and the instructor, including feedback, regular announcements, email reminders, grading rubrics, and activities promoting reflection (i.e., learner-instructor engagement). Students also appreciated opportunities during synchronous meetings for learner-learner engagement, which is another way to reduce transactional distance. They enjoyed discussing ideas with each other to expand, clarify, and challenge their thinking (Bolliger and Martin, 2018). Similarly, they valued peer feedback on their first drafts. Regarding learner-content engagement, the interviewees repeatedly emphasized the need for well-structured courses as well as content and tasks that are relevant to them (i.e., their own future teaching in primary school). However, there was also evidence of the least valuable strategies according to Bolliger and Martin (2018). The interviewees had to sit through many hours of non-engaging synchronous lectures with a lot of content information that could easily have been replaced by video-recorded lectures for offline viewing.

Choices

What are effective ways to provide choices to students so that they can demonstrate their learning in multiple ways? The instructors provided some options for comprehension, expression, and communication. In particular, their responses indicated connections to the second and third UDL principle (CAST, 2018). Some instructors provided multiple means and representations of information, which allowed students to access learning content in their preferred way. Specifically, access to content was provided through reading materials, podcasts, video tutorials, audio-narrated Powerpoint slides, and synchronous live sessions. Regarding the provision of multiple means of action and expression, the findings indicate that these options were only offered for activities that needed to be completed throughout the semester and mid-term assignments. However, the participants usually did not have a choice regarding the way they wanted to demonstrate their learning in the final assignments. The format for the end-of-term assignments was usually prescribed and left very little room for flexible choices. As opposed to the format (i.e., modality), there was some flexibility regarding topic choice. Students were allowed to either choose their own topic or choose from a pre-selected range of topics.

Collaboration

How can educators promote collaboration among students? The participants highlighted collaborative learning experiences that build on the co-construction of meaning and knowledge, such as, think-pair-share, buzz groups, peer teaching events, group debriefings, virtual poster sessions, and team concept maps. The participants repeatedly mentioned the physical isolation in online environments, which has also been discussed in Phirangee (2016). Opportunities for interaction were highly appreciated because they helped to create a sense of cohesion to some extent, offered a platform to exchange ideas, created a space to learn about each other's work-in-progress, and generated positive interactions with peers and tutors. The findings also align with the principles of ubiquitous learning in mobile learning environments (Hwang et al., 2008, 2010; Peng et al., 2008) emphasizing collaborative projects that engender a sense of cohesion and learning community.

Compared to a f2f setting, the findings indicate that the remote setting makes it easier for ‘free-riders’ who are looking for ways to escape their responsibilities in collaborative projects. Some participants experienced a type of ‘ghosting’ where their text messages, emails, and calls were left unanswered. This forced the ‘diligent’ students to take responsibility for the full workload. In groups with three or more students, the rest of the group could still continue moving forward (Davidson and Katsopodis, 2020) if one group member did not hold up their end of the work.

Learning autonomy

How can educators foster autonomous learning? The majority of statements reflected the idea of being ‘unbound by space and time.’ Learning autonomy can be supported in an online space if a few prerequisites are in place. For example, full and immediate access to the semester contents rather than a week-by-week release; clear instructions and full task descriptions; clear assessment criteria; accessibility to instructor support on an as-needed-basis with a quick turnaround. Any instance of vagueness, ambiguity or discrepancy prevented students from actively controlling their learning process and usually resulted in time-consuming investigations to get a clearer sense of the task requirements and scope. Rather than decreasing teacher-dependency, a lack of clarity regarding assignment actually increased teacher-dependency.

Learning autonomy is intricately intertwined with personal choices. Indeed, the students reported having choices as to when, how, and where to do a task. Some participants mentioned the use of online course tools that allowed them to optimize autonomy and to keep track of their progress (Robinson and Wizer, 2016), such as online quizzes, checklists and visual progress bars in LMS, tutors’ weekly video updates, or just-in-time announcements. The findings can also be juxtaposed with the principles of ubiquitous learning, which emphasizes the ways that personalized curricula support learners in learning independently “without time and spatial limitations” (Huang et al., 2011: 2294).

In summary, the findings echo the following recommendations for educators, irrespective of the instruction delivery mode:

While there is no unique recipe, these activities or tasks should be based on a mix of design approaches (synchronous, asynchronous, online, offline), be described and communicated in an accurate and clear manner, have an adequate level of difficulty for students’ capabilities and expectations, be related to authentic contexts to increase students’ engagement and be accessible to everyone (Rapanta et al., 2020: 937).

Conclusion

The present study was designed to capture the successes and failures during pandemic teaching at a teachers college in Switzerland. The experiences of five undergraduate students during two semesters of imposed online learning were captured in one-to-one interviews. The study was framed by six key concepts, namely, feedback, care, student engagement, choice, collaboration, and learning autonomy. The interviewees’ descriptions of the faculty’s ERT approaches can help educators to refocus and advance their teaching approaches.

Several challenges were identified in the way and the timing in which content was structured, presented, and released. Distinct structures, clearly communicated purposes, and a well-defined organization are key to ensuring learning autonomy. For example, it should not be the students’ responsibility to have to cross-reference a sequence of milestones and subgoals (Hattie and Yates,

2014); instead, it is the instructor's job and must be the result of carefully planned design choices. The participants repeatedly mentioned that whenever they needed to search for key pieces of information in different places (rather than in one single place), they were frustrated, their stress levels increased, and it cost them a lot of unnecessary time.

Challenges were also identified in the discussion of synchronous versus asynchronous sessions. What was missing, however, was a discussion of equivalency. Did the remote instruction result in similar learning outcomes for the students? Although the remote setting was associated with increased learning autonomy and, for some students, with an increased sense of efficiency, it is unclear if their academic outcomes were similar to previous semesters that had been conducted f2f. Beatty (2019) emphasizes that equivalency is not equality. For example, participation in an asynchronous discussion forum will most likely be less socially active than a classroom-based discussion. Similarly, even if students participate synchronously in a live hybrid class, the remote students will most likely not have the same level (and quality) of peer and tutor interaction as the on-site students. It may be incumbent on the instructor to adapt resources, customize activities, and train students so that interaction and flexible participation are possible and ultimately lead to an equivalent learning experience (Beatty, 2019).

The study also reveals aspects of ERT that made the participants' experiences more positive, such as personalized feedback and personalized learning experiences. As pointed out in Espasa et al. (2019), personalized feedback creates a stronger sense of closeness between students and faculty. In ubiquitous learning, personalized learning has been associated with increased learner motivation (Hwang et al., 2008, 2010; Peng et al., 2008). In the future of education, personalized hybrid learning experiences will become increasingly important to bring students and faculty together (Curtin, 2021).

This investigation reveals aspects that we may not have learned without the pandemic. Based on the students' appreciation of flexibility, which positively impacts their learning experience (Curtin, 2021), it can be predicted that they will expect to be able to join any class remotely in the future. These expectations align with the values of the HyFlex model that allows students to choose flexibly from among a synchronous, asynchronous, online or offline option for any given unit, topic, or week (Beatty, 2019). However, there is no true flexibility unless HyFlex courses provide meaningful choices; "without flexibility, all you have is a standard hybrid course" (Beatty, 2019: 2).

Many educators may have doubts about their ability to provide engaging, rich, and high-value teaching in online environments (Curtin, 2021). Given the influence of student engagement on their sense of community and, in turn, on their academic performance, educators need training in providing an optimal online learning environment. More universities should offer focused and specialized faculty training, such as the Certified Online Instructor (COI) program, to be better prepared for the ubiquitous availability of education that is expected in post-pandemic times.

Limitations

The sample was very small and there was a gender imbalance with four female participants and only one male participant. However, this gender imbalance is an accurate representation of the teacher population in Switzerland. The interviews were conducted in English, which is a foreign language for all five participants. Although their proficiency in spoken English ranged from good to native-like proficiency, they may not have been able to capture all the finer subtleties and nuances that they would have been able to convey in their first language.

The research was conducted in a limited socio-cultural and geographic setting in which interviewees had access to state-of-the-art computers and reliable high-speed internet.

Another limitation is that several questions would have required an introduction into key concepts or different categorizations. For example, the participants were not introduced to the different types of feedback. They could have been more specific in their answers if they had been asked about feedback for improvement, feedback for motivation, emotional feedback, group-level feedback, etc. This explains why some of their statements were more of a general nature.

Future research

This study has explored teacher candidates' experiences during two semesters of forced remote learning. Future studies investigating university professors' experiences during an imposed period of online instruction would help to create a more comprehensive understanding of ERT. Also, it would be imperative to compare teacher candidates' academic achievements when instruction is offered in-person, in a hybrid setting, or fully online. One way to do this would be to use a standardized teacher preparation exam and compare the test scores of candidates from various years and across several modalities used by universities. In addition, more research is needed to better understand hybrid and HyFlex (Beatty, 2007, 2019) settings and the nuanced differences between these two models. Students' appreciation for the brevity of synchronous online sessions indicates their interest in *micro-learning* as an e-learning modality, which could become increasingly relevant for the future of education but also requires investments into faculty training and support. Finally, further investigation of students' expectations of instructional and assessment flexibility would help to refocus future e-learning.

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Author Biographies

Natalie Nussli (EdD) is a graduate from the University of San Francisco and the Middlebury Institute of International Studies at Monterey. She is an active instructor in the School of Education at the University of Applied Sciences and Arts Northwestern Switzerland (FHNW). As a researcher in the field of hybrid education and virtual learning environments, she has a strong interest in all fields related to mobile pedagogy. Her work is shaped by the belief that there is a need to refocus instructional efforts to provide students with flexible, seamless and intentionally designed learning spaces. She is an advocate of the HyFlex model (Beatty, 2019) and is currently exploring the ways in which HyFlex mediates the physical, virtual and interactional space.

Kevin Oh is a Professor and Chair of the Learning and Instruction Department at the University of San Francisco. He received his doctorate in Special Education at the University of Virginia. Professor Oh currently trains in-service teachers in the special education program at USF, where he emphasizes the importance of teacher training and the critical role of using culturally responsive teaching for in-service teachers. He also prepares teachers to utilize technology appropriately and effectively, and trains them to investigate how technology can be integrated into the curriculum for high-need students with disabilities in urban school settings.

Jason Davis received his Ed.D. from the University of San Francisco in Special Education, a M.Ed. in Educational Leadership from George Mason University, his M.S. in Special Education from Old Dominion University, and a B.S. in History from Radford University. A professional educator for over twenty years, Dr. Davis focused much of his career working with at-risk students and those identified with special needs. As a teacher and school principal, he devoted his time to finding ways

to support the needs of diverse populations. In this pursuit, his work at Millersville University has emphasized the power of highly qualified teachers using evidence-based practices to support student growth. His research interests include using technology to enhance teacher reflection, overcoming the transition shock from university to the K-12 classroom, and encouraging teachers to embed evidence-based practices into their classrooms.

Appendix

Interview

Interview Protocol

- Thank you for participating in this interview.
- This interview will be recorded on Zoom™ and the interview content will be transcribed.
- By participating, you give us permission to use your responses for research purposes.
- Only our research team has access to the transcripts and the video recordings. Your name will not be disclosed to anyone outside the research team. Your data will be confidential.
- If you wish to stop the interview at any time, please let me know.
- In this interview, we are interested to hear about your online learning experiences across **all of the classes** you have been taking in the past two semesters.
- As mentioned in our email to you, we are trying to learn from your experiences (as students) so that we as educators can improve our teaching skills. We are hoping to learn how and what we can change to improve our online presence during non-pandemic times.

Interview Questions

Concept	#	Questions	Examples
Feedback	1	To which extent did you receive regular peer feedback?	
	2	To which extent did you receive regular feedback from your instructor?	
	3	To which extent did this feedback...	
	3.1	...assist you in understanding the course expectations?	
	3.2	...support your learning?	
	3.3	...keep you motivated?	
Care	4	To which degree did your instructors provide learner support?	<i>Regular communication between students and instructor, instructor accessibility, keeping open lines of communication, instructor commitment to assist and support students</i>
	5	Do you believe your professor made an effort to get to know the students?	
	6	How did the instructors show that they cared about your learning?	
Student Engagement	7	What did the instructor do to help you engage with the course materials?	
	8	Did the instructor provide supports or instructions to engage you in course activities?	

(continued)

(continued)

Concept	#	Questions	Examples
Choices	9	Please describe if you had choices to demonstrate your learning. In other words: To which extent were you free to choose the modality to show your knowledge?	UDL-types of assessment for technology-rich environments: <i>e-portfolio, audio or video recording, blog or vlog, concept map, data visualization, discussion forum, infographic, panel discussion, learning log.</i>
Collaboration	10	First, please describe the collaboration with your peers during your online experience.	
	11	Now please compare the collaboration during your online experience with the collaboration that you previously had in a face-to-face setting: What was different?	
	12	What went well and what did not go well regarding collaboration during your online experience?	
Learning autonomy	13	Can you give examples of projects or course formats that allowed you to work independently?	
	14	What instruction or supports helped you to work independently?	
	15	How did you go about completing this task? (i.e., based on prior knowledge or new content knowledge from course?)	