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University students' (dis)engagement experiences in synchronous sessions during the COVID-19 pandemic

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UNIVERSITY STUDENTS' (DIS)ENGAGEMENT EXPERIENCES IN SYNCHRONOUS SESSIONS DURING THE COVID-19 PANDEMIC

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Abstract: *In the past two years, student engagement in online learning situations has become a mutual concern for educators all over the world. The impact of working in online environments and using video and other communication channels on students' learning experiences is still not fully understood. The present study addresses this question by drawing on students' written reflections and interviews from the Finnish higher education context collected during the COVID-19 pandemic. It uses the qualitative method of thematic analysis to investigate students' experiences of interacting in synchronous sessions and their perceptions on (dis)engagement. The analysis shows the importance of versatile teaching methods and enhanced participation, the use of web cameras and anti-distraction strategies for engagement. In contrast, some aspects, such as communication issues, camera-induced self-awareness, and distractions from one's physical and digital surroundings, pertain to disengagement. The study contributes to a better understanding of the common challenges and affordances of distributed learning environments on student engagement, but also shows individual differences in how these are perceived. The findings have implications for online teaching pedagogy and course design in general and higher education in particular.*

Keywords*: student engagement, emergency remote teaching (ERT), synchronous sessions, distributed learning environments, interview, thematic analysis*

Introduction

The outbreak of the COVID-19 pandemic has made the development of remote teaching more important than ever. It has raised many serious concerns, ranging from the limited resources teachers have to effectively organize their teaching to student wellbeing. How to support active and interactional learning processes and facilitate student engagement in online learning situations has become a practical problem for educators to solve. Earlier research has also highlighted the need to understand the factors that contribute to student (dis)engagement experiences more in depth (e.g., Kahu, 2013; Kahu & Nelson, 2018). This study examines the situated nature of student engagement in synchronous sessions during the COVID-19 pandemic, which has also become known as the era of "emergency remote teaching" ("ERT", Bozkurt & Sharma, 2020; see also Hodges et al., 2020). We focus on the context of Finnish higher education and the experiences of university students who participated in courses conducted using Zoom sessions in spring 2021. Our aim is to analyze the students' perceptions of the aspects of their Zoom sessions that pertain to situated engagement or disengagement. The study answers the following research question: *What themes are central to student (dis)engagement experiences relating to synchronous sessions during the COVID-19 pandemic?*

Drawing on written reflections and interview data from a collaborative project between two universities in Finland, we used the qualitative method of thematic analysis to investigate university students' reported experiences in synchronous sessions. Our analysis shows that the students' perceptions of online engagement are highly complex and, to some extent, even contradictory. By identifying some of the aspects of student engagement in synchronous sessions in the Finnish context, our study contributes to the growing literature on online learning and teaching and offers suggestions for further research in the area. The findings can be used to develop remote teaching practices, for which there is a continuous need (Bozkurt & Sharma, 2020; Nworie, 2021).

Background literature

Student engagement has been investigated from different perspectives in educational research and is variously defined. In general, it is perceived as "a student's emotional, behavioral and cognitive connection to their learning" (Kahu et al., 2019, p. 658) and thereby one of the most important factors in the learning process (e.g., Kahu, 2013; Kahu & Nelson, 2018). Student engagement in higher education in particular is connected to retention and development of critical thinking skills, and it has been characterized as the "active involvement in course activities with continuous efforts to attain desired learning outcomes" (Kucuk & Richardson, 2019, p. 119). It can also be understood at the situated level of learning and as one's mental involvement, i.e., interest and participation in an ongoing learning activity (Philp & Duchesne, 2016), and something that is manifested through one's actions of "thinking, talking, and interacting with the content of a course, the other students in the course, and the instructor" (Dixson, 2015, p. 2). In this paper, we draw on earlier work in the fields of online education, educational psychology, and social constructivism and contribute to a better understanding of how the different levels of engagement manifest in students' reported experiences.

Engagement and online student engagement

Student engagement has been extensively studied during the past decades, and the investigations have built around its three key dimensions: behavioral, cognitive and emotional (e.g., Kahu, 2013; Nkomo et al., 2021; Stone & O'Shea, 2018). Research on student engagement in online learning environments (online student engagement) has found many factors peculiar to these settings. According to a conceptual student engagement framework (Kahu, 2013; Kahu & Nelson, 2018),

there are structural, socio-cultural, and psychosocial factors, deriving partly from one's background and life situation, which influence student engagement and become manifested at different levels of interaction. However, these manifestations vary depending on the context and the individual learner's needs. For instance, O'Shea et al. (2015) illustrate how the lack of support from the teacher and university, insufficient digital skills, and poor routines experienced by adult online students can result in feeling isolated, lonely, and disengaged. In contrast, factors that have been found crucial for successful student engagement include peer community and feeling of belonging (e.g., Delahunty et al., 2014), self-efficacy (Filsecker & Kerres, 2014), good time management skills, and teacher support (see Farrell & Brunton, 2020).

Earlier studies have also identified other aspects that support behavioral, cognitive, and emotional engagement in online learning environments. For instance, versatile use of working methods and materials that activate student participation have been found particularly important (Garrison, 2017; Martin & Bolliger, 2018). Creating opportunities for involvement either in writing or speaking and via synchronous and asynchronous methods is key in supporting skills development and emotional connectedness (Dixson, 2015; Farrell & Brunton, 2020; Stone & O'Shea, 2019). By using questionnaires and students' self-reports as data, Dixson (2015) highlights that interactive, application-learning behaviors, such as responding to discussion forums, can significantly correlate with students' engagement in online courses. When students interact and collaborate with others, they feel more involved in the course and thus more engaged.

Prior literature has underlined the importance of real-time interaction with peers and the teacher as well as participation in learning activities as key factors in generating student engagement and success in online learning (Dixson, 2015; Philp & Duchesne, 2016). However, the practices affecting the situated nature of (dis)engagement and findings from students' in-depth experiences are currently underrepresented but necessary to develop solutions that support active learning behaviors.

The community of inquiry model and engagement in online learning

The Community of Inquiry framework (see Figure 1 below) serves as a useful model for describing and understanding the factors that influence students' engagement in online learning environments (Kucuk & Richardson, 2019). The Community of Inquiry framework provides a model for the collaborative construction of critical inquiry and shared understanding that represents deep and meaningful online learning experiences (Garrison et al. 2000; Garrison, 2017). The Community of Inquiry model is grounded in the constructivist theory of learning (Swan et al., 2009), which draws on Dewey's inquiry-centered approach to learning (Dewey, 1959 as cited in Swan et al., 2009, p. 44) and implies that all learning is *social* and *situated*.

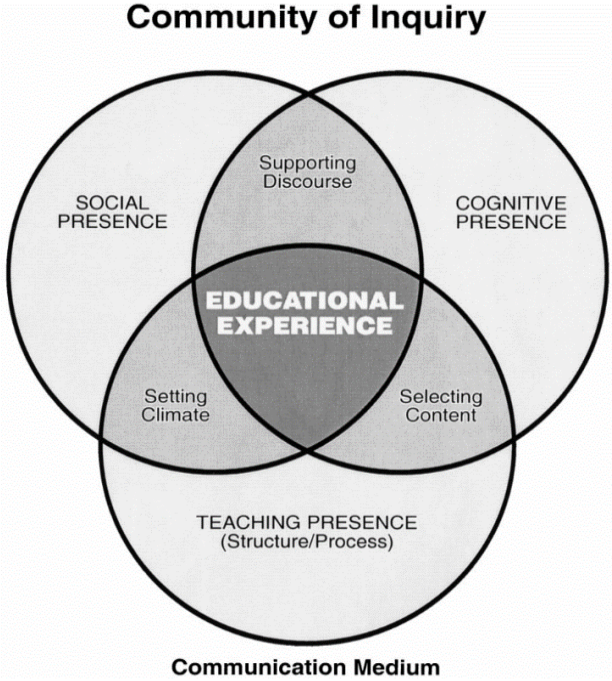

Figure 1. Community of Inquiry Framework (Garrison et al., 2000, p. 88)

Based on the model, three types of 'presence' shape the overall educational experience: social presence, teaching presence, and cognitive presence. Optimal and engaging learning experiences develop at the intersection of the three presences and from the maximization of each. Social presence refers to participants' ability to present themselves in the online learning environment, to identify with a group, and to communicate openly (Garrison et al., 2000; Garrison, 2017). Social presence is thus not only a form of self-projection and representation but also the development of interpersonal relationships in a group of learners. Teaching presence integrates two main functions: the design and the facilitation of the educational experience (Garrison et al., 2000). Cognitive presence is "the extent to which the participants … are able to construct meaning through sustained communication" (Garrison et al., 2000, p. 89). Cognitive presence is built on critical thinking, reflection, sustained communication practices, and purposeful, collaborative inquiry.

The Community of Inquiry model, as developed by Garrison et al. (2000), has also been applied to investigate students' engagement in online learning situations. Kucuk and Richardson (2019) studied structural relationships between engagement, satisfaction, and the three types of presence. They collected survey data from participants in graduate-level online courses and found that cognitive presence was the main determinant of emotional, cognitive, and behavioral engagement. Cognitive presence also had an indirect impact on students' agentic engagement (Kucuk & Richardson, 2019). In addition, an association was identified between teaching presence and the emotional and agentic aspects of engagement. Drawing on survey data, Jackson (2020) also found that cognitive presence had a positive predictive relationship with cognitive engagement and social and teaching presence with behavioral engagement.

Synchronous sessions and the situated nature of engagement

Some studies have focused in greater depth on students' experiences and feelings pertaining to synchronous learning situations, using interview data (e.g., Aagaard, 2021; Philp & Duchesne, 2016). These analyses have shown that there are social and organizational factors that impact on students' situated cognitive engagement, such as a good class design that includes established routines for communication and participation (Jacobi, 2018). Behavioral and emotional engagement in turn can be facilitated by the use of web cameras, since it helps maintain mutual focus on the topic and ongoing activities (Cserző, 2021; Philp & Duchesne, 2016) and build a positive image of others (Castelli & Sarvary, 2021). Furthermore, kinesthetic movements and doing crafts, e.g., knitting, can facilitate active listening, help reduce stress and make one feel more productive and engaged (Corkhill et al., 2014; Massner, 2021).

There are also aspects that have been found to contribute to situated disengagement in online teaching. For instance, Sitzmann et al. (2010) show that interruptions caused by technical issues divert attention from the main task and can lead to cognitive interference and increased information processing demand. Others have found that the use and presence of smartphones may become habitual or non-habitual "digital distractions" that students must learn to minimize (Aagaard, 2021; Swar & Hameed, 2018). Furthermore, some studies have pointed out how, despite its positive effects, the use of web cameras can add to one's cognitive load and contribute to the development of different forms of social anxiety, such as *mirror anxiety*, owing to increased self-focus (e.g., Castelli & Sarvary, 2021; Fauville et al., 2021). All in all, more work is needed to gain an in-depth understanding of the different sides of (dis)engagement and the factors that contribute to students' positive and negative feelings, attitudes, and experiences in online learning environments.

Our study builds on the different notions of engagement and takes an empirical approach to the reported (dis)engagement experiences of students. Overall, we contribute to the pressing need to gain more understanding on the topic in diverse higher education systems, focusing on the Finnish context which has not been studied much compared to other countries, such as Ireland (e.g., Farrell & Brunton, 2020) and Australia (e.g., Kahu et al., 2019). The findings of the study can be used to inform the planning and execution of online and hybrid learning models in the future both in and outside Finland.

Data and methods

The present data were collected in the context of higher education and as part of a collaborative project conducted by researchers from two universities in Finland. The research participants were first- to sixth-year degree students from both sites, including two exchange students who were resident in Finland during the academic year 2020-21. The data collection comprised a two-stage process including written reflections and audio-recorded interviews collected in both universities during the spring term of 2021. The students were recruited during their attendance at university courses, and participation in the research was voluntary. In both stages of the study, we used thematic analysis to identify emerging themes in the data in a systematic manner (see Braun & Clarke, 2006). This methodological procedure was motivated by our research aims: first, we wanted to find out the students' general thoughts and experiences regarding online interaction with peers and teachers in Zoom sessions during the third semester of emergency remote teaching, and second, to delve deeper into the individual experiences of selected students.

In the first stage, we developed a written task based on Oittinen's (2020) framework on interactional spaces in technology-mediated environments, with which our aim was to prompt the

students to think about their behavior in synchronous sessions (see Appendix). The task comprised a template in which the students were asked to reflect on their experiences of interacting and participating in a selected remote session during the COVID-19 pandemic. They were to describe their experiences in relation to the three interactional spaces presented in the framework: the overall meeting space, the local space, and the adjoining spaces, in which their involvement in different interactional dimensions and communication channels is manifested via actions, i.e., talk, text, and bodily-visual displays, produced in and across physical and digital spaces. They were also encouraged to change the size of the spaces to indicate which of them they had felt most engaged with during the selected session. In addition to the framework, supportive questions were provided, and the students were asked to freely write about their experiences and use visualizations (e.g., pictures and drawings) if they so wished. A total of 29 students participated in the first phase during early spring 2021. All the students signed an informed consent and were assured that all personal data would be treated according to the General Data Protection Regulations (GDPR).

After the first-stage data collection, we familiarized ourselves with the written data and worked collaboratively to generate codes and identify frequently occurring themes around the topic of interaction. We then grouped the data, along with excerpts from the written tasks, under the different themes (Braun & Clarke, 2006, p. 87). This procedure enabled us to refine and name the related topics that we had identified and also guided us, after this first stage, to focus specifically on student (dis)engagement. Next, we selected a total of eight students for the interviews, four from each participating university. For the purposes of our study, which we find preliminary in the Finnish context, this data set was sufficient, considering the richness of interviews as qualitative data. The interviews were semi-structured, including a set of questions that allowed room for spontaneous elaboration of the topics. All the interviews were held via Zoom in March-April 2021 either in English or Finnish and lasted approximately 30-60 minutes each. We used the first-stage analysis of the written submissions as the basis for the second stage and for finalizing the interview questions.

The interview questions were framed to explore each student's overall experience of attending remote sessions during the pandemic and elicit detailed descriptions of their practices, feelings, attitudes, and behaviors. The questions ranged from the perceived challenges and affordances of real-time remote sessions (e.g., 'What are the aspects that make you lose focus?') to potential solutions and good practices (e.g., 'What do you feel constitutes good or successful interaction in remote teaching?'). During the interviews, the students were also asked to reflect on their experience from a practical perspective based on the written task submitted in the first stage. The interviews resulted in versatile data that allowed answering the research question and exploring students' (dis)engagement experiences. After the interviews, we compiled extracts from the data for an informed identification of engagement-related themes and categorizations. This paper presents our findings based on the themes that emerged from the interview data, which are complemented by our observations about the written reflections. The purpose of this approach is to both shed light on the in-depth experiences of student engagement but also show how they may be connected to specific situations and themes related to interaction and participation in remote sessions.

Findings

The data show that the students' reported experiences can be associated with different themes related to engagement and disengagement. In the analysis, we focus on perceptions of both, as aspects generally connected to these (e.g., engagement manifested through meaningful interaction in which one is socially and emotionally invested; see e.g., Dixson, 2015) emerged consistently in

the interviews. The themes related to engagement include versatility during sessions and enhanced participation, web camera use, and students' anti-distraction strategies, whereas those concerning disengagement include communication issues, camera-induced self-awareness, and distractions in one's physical and digital environment. Overall, the findings indicate variation in the ways individual students may feel about the tools, strategies, and procedures employed in synchronous remote teaching.

Student engagement in synchronous sessions

Versatility during sessions and enhanced participation

Our analysis of the written assignments already showed that students tend to consider merely listening during synchronous sessions a difficult task. Nearly all the interviewed students also talked about the importance of course design in remote teaching, including the use of interactive tasks, and having a certain degree of versatility in teaching methods. These factors made them feel included and helped them to remain focused in class (see also Martin & Bolliger, 2018). In general, activities, such as having small-group discussions in breakout rooms, were positively perceived as not only promoting active listening but also enhancing opportunities to take part. Furthermore, diverse techniques, such as using polls, queries, online functions, and digital whiteboards, were considered good ways to keep students socially and cognitively engaged:

> "If the teacher, like, activates us, for instance in some lectures we've had like quizzes. In Zoom you can do this kind of a quiz which appears on the screen and then you can easily and anonymously respond, so something like this activates you more than just listening. (…) The kind (of a session) where you have to participate feels beneficial because then you don't drift off to do something else." (Student 2)

The student points out that having to participate "feels beneficial" during remote sessions because it can help keep one's focus from shifting off topic. Furthermore, if learning activities require collaboration and dialogue, the participants are kept occupied in the co-construction of the learning experience. This can ensure an inquiry-based approach and the sharing of the responsibility for teaching presence (Garrison, 2017). This finding is in line with social constructivist approaches to learning, such as that taken by Dixson (2015), who showed the importance of interactive, application-learning behaviors. Activities that support the development of a good social-emotional atmosphere can also decrease anxieties and enhance interaction in the online learning environment (cf. Háhn, 2020).

The data also show how diverse uses of one specific tool, i.e., chat, was valued by the students, as it can support equal participation and interaction without the audible production of turns that can potentially interrupt a speaker. This is described by Student 5:

> "I think it's for some people it might be even easier to just write it down than switch on the microphone and speak because the– well for me it would be easier because I like writing more than I do speaking. So somehow interrupting the whole lecture for me to ask a question, it's a really big step for me, whereas writing the question in the chat it's easier because I don't have to interrupt anything." (Student 5)

The same student described themself as someone who is typically shy in classes and for whom chat is an additional resource that makes it easier to take part in discussions. This student explicitly referred to its importance for engagement also generally:

> "I think it's a good idea to have the chat function because it does bring about more engagement." (Student 5)

As illustrated by our data, the use of versatile teaching methods and interactive tasks (e.g., learner-to-learner and/or learner-to-instructor interaction) can generate higher student engagement in online courses. However, in order to invoke involvement and participation during a remote lecture, i.e., either in an audible or written form, course design and lesson planning merit special attention. One student pointed out that "chat is an underused resource", by which they meant that its use could be better supported and instructed by the teacher. This highlights the importance of teachers' ability to integrate the appropriate use of communication tools into the lesson plan and ensure that students understand how they can and should be applied.

Camera use and bodily-visual cues

The students experienced web camera use as a good way to facilitate engagement in interaction and with each other. According to the interviewees, the way in which sessions unfold affects their engagement in learning. The majority reported that especially during small-group discussions in breakout rooms, in which one was expected to participate orally, it was important to be able to see their peers' bodily-visual cues, such as facial expressions and gestures. As shown by the next extract, web cameras were considered helpful in keeping conversations going.

> "When we're in small groups you can just easily talk over someone if you can't see each other, but when you can see your peer's faces and expressions, you know when someone is about to say something. And then it might actually even help move the conversation forward when the cameras are on." (Student 2)

When the cameras were on, several students also reported feeling morally obliged to pay attention to the video call at all times; they oriented to the maxim "focus your attention on the VC interaction" (Cserző, 2021). This was perceived as a "positive pressure" that helps maintain focus on the topics of the class, as described by one student:

> "When the webcams are on it feels like there is a kind of a connection and you feel that you are more present. And because the others can see you, it feels like no- (or) you have to be more active." (Student 3)

The above extract describes how the use of cameras can also have a positive effect on students' emotional engagement with the group, as they induce an elevated sense of social presence and connectedness (cf. Garrison, 2017). This, in turn, makes building trust and rapport with others and getting to know them easier than is possible via text-based or audio interaction alone (Castelli & Sarvary, 2021). Another student highlighted how the ability to see each other makes for a more collective experience in the sense of "shared presence", saying that having the cameras on makes one feel that "there is a connection and more people are actually present" (Student 5). This implies that the learning experience may become less solitary if cameras are used during remote sessions. However, the next extract shows how the camera use can also arouse mixed feelings and induce interaction engagement and emotional and cognitive disengagement in the same student.

> "Without the cameras discussion stops easily and people might just stop talking. But I think it's more comfortable to not have the camera on. Cameras make discussions awkward [...] because people start to think more about what they look like." (Student 6)

Overall, our findings show how cameras can enhance the building of relationships and overcome the loneliness generated by distance learning (see also Stone & O'Shea, 2019). This topic emerged frequently in the data, and it also describes the more general feelings of anxiety and the need for social contacts during the time students were discouraged from visiting their peers or meeting on campus.

Actions in the physical space as anti-distraction strategies

Some students pointed out that actions in their local, physical space contributed positively to their engagement in the remote sessions. During the months of remote studying, they had developed both pre-emptive and ad-hoc anti-distraction strategies that helped them anticipate and deal with potential perturbations. In relation to the former, proper preparations, including getting dressed, assembling everything needed in class, such as documents, tabs, pens, and bottles of water, and making sure the internet was working, were seen as key in getting into the "mood to study". Many students also reported on the beneficial aspects of clearing their workspace (e.g., their physical desk) before the start of an online session, thereby eliminating potential distractions and maximizing their ability to engage. Desk location was also considered important from the viewpoint of mental well-being: when seated next to a window, one feels more connected to the outside world:

> "I usually keep my like my workspace my physical desk clear of any distractions [...] It's nice because it's right in front of the window so I can see outside [...] that there is a world outside of studying." (Student 5)

Figure 2. Picture from Student 5's written reflection, depicting one's home workspace.

The extract refers not only to the general feeling of loneliness experienced by many students in spring 2021 but also how their everyday lives revolved around their homes and studies. However, the same student (see below) also mentioned other strategies that helped maintain focus in class, such as the ability to move around in the physical space and/or to perform manual activities, for example, knitting:

> "I have the wireless headphones [...] and I can just listen then it's easy for me to stretch or walk around the apartment and sometimes I might do some knitting to help me focus (it's with the)- when I do something with my hands." (Student 5)

Doing other things with one's hands, such as note-taking on paper or in a notebook, were also reported as good ways to remain engaged. Some students found paper more efficient than electronic documents for notetaking in that it better facilitated remembering class contents. As the extract below shows, using Word-documents for this purpose proved distracting:

> "Erh in general if I- I have like some paper document there next to me, or a notebook or something, or then a Word document on the computer, I notice that

> I might start typing at the same time, and then realize I'm missing things because I somehow just focus on the typing." (Student 2)

The above examples illustrate how developing routines, arranging one's physical space and performing activities in it may become important strategies for maintaining focus and engagement during synchronous sessions. Others have reported similar findings on the role of environmental factors such as the physical location and arrangement of the working space (Corkhill et al., 2014; Massner, 2021). Importantly, our analysis also highlights that in online environments, the actions that teachers cannot see but might easily interpret as multitasking or disengagement (i.e., not paying attention) can in fact have a positive impact on students' behavior, motivation and learning experience. These findings underline how anti-distraction strategies manifest both behavioral and emotional engagement (i.e., a desire to learn the course material and find ways to make it relevant and interesting; see Dixson, 2015).

Student disengagement in synchronous sessions

Communication issues and problems with reciprocity

Communication issues, such as ambiguities relating to silences and the difficulties in smoothly upholding a conversation, were frequently mentioned in the interviews. Technical problems, such as a poor internet connection or malfunctioning devices, often prevented the students from full participation and were thus perceived as distracting factors, as described by one student:

> "When the internet connection is bad from uh the teacher's internet collection- eh connection is bad and you can't understand then and um I ( ) really want to listen to them but I can't because the connection is too bad and ( )... It's been frustrating and yeah it's just annoying mm." (Student 8)

If students are unable to fully participate in the class interaction, they may feel excluded, frustrated and less engaged. Having limited or no access to the affordances of the platform is a structural issue (cf. Kahu, 2013), and it can challenge the creation of social presence. As illustrated by the extract above, interruptions owing to technical issues divert attention from the main task and can lead to cognitive interference and increased information processing demand.

The students felt that online, especially in the absence of a video connection, it was more challenging to interpret reciprocity and advance discussions collaboratively. Not being able to recognize peers' voices or take turns without overlapping talk was mentioned as something that can unfavorably affect the overall progression of sessions and one's participation in it, as shown below.

> "It feels a little strange at times, and very often you end up talking at the same time with someone. You don't really know who is talking, especially if there are people with similar voices, so you don't really know who is about to say what, so it's really difficult to take part. If the cameras were on, you'd see who is about talk and there would be at least- at least a kind of a right kind of contact, if that's something you can say." (Student 2)

Another aspect that seemed to result in situated disengagement was varying and unspoken practices for participation and using the microphone. This was seen to hinder opportunities to build a connection with the other group members and perform well in the assigned group tasks. Some students reported feelings of confusion, frustration and even exclusion, as illustrated by the following excerpts.

> "It's very frustrating that some of the time (in breakout rooms) will go to those like silences that people don't- they just don't say anything and they might not even

> open their mic at all [like] they might have it on mute for the entire conversation." (Student 5)

> "That's sometimes ( ) a bit yeah um just frustrating when you're doing group work with three or four people and one of them just doesn't engage in the group work ( ) it's a bit yeah (yeah then) it's annoying or yeah frustrating because you don't know why they don't engage with you." (Student 8)

The latter extract, especially, shows how the feeling of frustration may be connected not only to the perceived inequality in the distribution of labor but also to not knowing the reasons for situated non-participation and disengagement. This could indicate that students perceive interaction engagement as a prerequisite for the development of other forms engagement, such as those related to task performance, collaboration, and learning. However, more research is needed to substantiate this view.

Camera-induced self-awareness

The use of web cameras can lead to an increased level of public self-awareness, which means that students who have their cameras on are more aware of being seen and watched by others (Castelli & Sarvary, 2021). In the data, this generated social anxiety about personal appearance, which influenced some students' behavior and attention in the remote sessions. The two extracts below illustrate the compulsion felt to watch oneself and control one's' behavior when the camera is on:

> "I have had some lectures where cameras are mandatory and then I might borrow one uh borrow a laptop so that I can have a camera and but having the camera on makes me feel a little uncomfortable like I constantly look at myself in the Zoom meeting to see what other people see. And I constantly try to sit up straight and like be on my best behavior so that I'm not doing whatever." (Student 5)

Many students pointed out that camera use should be agreed or at least a prewarning issued prior to sessions. In some cases, the absence of such an agreement led to disappointment and feelings of deception. The next extract shows how this may relate to embarrassment about displaying oneself to others who remain unseen:

> "If in a clas- class many people don't have their cameras on and you do, and also a couple of others do, I feel kind of anxious because I feel like everyone's watching me. But I can't see them like people, so—" (Student 1)

Discomfort regarding camera use was also connected to privacy issues and self-disclosure, such as unwillingness to reveal too much about identity at home. This was perceived as something separate from one's study or work identity, as described by Student 2:

> "Every now and then it feels like it's a little stressful, since you try to look as good as possible and it sometimes feel stressful because the "home me" is so different, and I've had some difficulties with separating free time." (Student 2)

While the use of cameras can enhance the participants' social presence, as shown in the previous section, it is not a straightforward matter. Changing the focus from building a positive image of others (Castelli & Sarvary, 2021) to focusing on the image of oneself and one's portrayal through webcams can be harmful for engagement. As the two students cited above state, the constant self-monitoring "you try to look as good as possible" and showing one's "best behavior" can generate feelings of discomfort, or mirror anxiety, caused by increased self-focus (Fauville et al., 2021). The production and interpretation of nonverbal cues can also add to the cognitive load that one has to deal with during an online meeting, which was commented in the written reflections by many.

> "Having your webcam on only when you speak is less distracting to me; not so many faces to look at." (Student 6)

Coping with such cognitive load and simultaneously experiencing anxiety or stress can raise the threshold to speak (cf. Räisänen, 2019) and impair engagement.

Distractions from the physical and digital environment

Many of the students in the first-stage data and all the interviewed students experienced distractions during the remote sessions emanating from their physical (e.g., home) and digital (e.g., computer screen) environments. As the extracts below indicate, everything surrounding the student can feel disturbing, especially noises, the presence of family members, or having one's smartphone nearby.

> "Of course everything that's around you irrelevant to the session is usually quite distracting. All the sounds you hear, like those from the neighbour's, or if your boyfriend is home. So all such things disturb you easily, like if you have your phone next to you and you get a message, you easily focus on the things outside the class." (Student 2)

The distraction caused by the presence of smartphones can be explained by their habitual or non-habitual use (Aagaard, 2021) or "fear of missing out", i.e., the desire/need to stay connected or updated with messages and social media posts (Swar & Hameed, 2017). In our data, many students described the non-habitual use related to the preference to have their phones at hand to check incoming messages and browse social media platforms. They also mentioned that when a remote lecture is not sufficiently interesting, the phone can offer an opportunity to multitask or to seek more engaging content. The next extract, in turn, describes the habitual distraction of smartphones as automatic, unplanned, and impulsive processes (see Aagaard, 2021, p. 2) and as an unwanted temptation.

> "It's just the checking of the phone that constantly interrupts my like focus." (Student 5)

As a result, some students reported on consciously choosing to leave their smartphone in another room or locate it further away from them during classes. However, those who did not resort to this option also pointed out that not all uses of a smartphone should be condemned. As stated by one of the students, instant messaging may be used as a resource to compensate for the lack of opportunities to talk about class contents with a neighboring peer and to keep up:

> "Sometimes I chat with my friend on WhatsApp like we might send each other jokes about something or then we actually discuss the topics of the lecture. And um I don't usually use the chat function during lectures so if I have questions I might ask my friend on WhatsApp like hey what did this mean [like]." (Student 5)

In addition to smartphones, a desk, or a computer screen with "visual clutter" (assignment, documents, and open tabs) can be distracting.

> "I think I lose focus ... when I have maybe some some other assignments lying around on my desk or when I have a lot of uh tabs open on my screen. So um maybe when I uh did some work before the lecture and then I still have the Word document and the (folder) everything open then I need to change um tabs during the lecture (but then) the other tabs distract me so um yeah that's distracting." (Student 8)

These findings indicate that the messiness of these situations is oftentimes problematic, to which good organizational skills could be the solution. They also point to the need for students to develop study skills and strategies that help them make conscious decisions to organize their behavior and learning spaces not only pre-emptively but also *in situ*.

As many students pointed out, they may also easily turn to non-habitual distractions (i.e., the kinds

that are planned) if the topic of the remote lecture is not interesting or engaging in itself:

> "If I get distracted also depends on whether I want to be distracted or if I'm interested in the topic so um when I I'm in a lecture that's just not interesting I- I tend to get distracted more easily." (Student 8)

An interesting topic can increase the ability to focus, which confirms the importance of cognitive presence in creating an engaging learning experience (Kucuk & Richardson, 2019). In contrast, if the lecture is not interesting and does not generate critical thinking and sustained communication among the learners, they will feel less engaged. In the above quote, by framing the distraction as dependent on one's will, this student also highlights the role of agency. Thus, engagement can be a personal choice, motivated by one's interest in the topic (see Filsecker & Kerres, 2014). In addition to the interviews, the data from the written reflections showed that if a task is boring or frustrating, the learner may develop negative feelings towards it, be unwilling to contribute and rather do something else, such as use their smartphone. One student, for example, wrote that

> "I hate to admit, but I am guilty of checking my phone a few times during class. The class was in big part based on students talking their situations, so when it did not concern me, my focus became distracted." (Student 4)

Emotional disengagement is therefore connected to a lack of effort in concentrating and developing anti-distraction strategies.

Discussion and conclusion

This study investigated the experiences of university students attending remote teaching during the COVID-19 pandemic in the Finnish higher education context. Our focus was on student engagement and disengagement in synchronous sessions and, in particular, how the students themselves perceived their situated learning experiences. Taking an empirical, social constructivist approach, we used thematic analysis of written data and interviews to identify related themes. This paper was built around the themes found in the interview data, but the analyses were complemented by the written reflections in order to highlight how the in-depth engagement experiences can manifest in specific learning situations. Overall, the findings of this study illustrate how aspects of cognitive, emotional, and behavioral engagement were manifested in specific ways in the students' experiences of emergency remote teaching.

Several themes relating to student engagement in remote sessions were identified. First, there was a connection between successful student engagement and versatility in task design during sessions. It was seen to both facilitate and enhance participation, which is mainly connected to teaching presence (Garrison et al., 2000; Garrison, 2017). This encompasses specific pedagogical solutions, such as teaching arrangements, class design and varying teaching methods, that help one remain focused on class topics, interaction, and activities. Second, our findings show that the use of web cameras is important, since being able to see bodily-visual cues helps students see each other's emotions, feel more connected and engage in meaningful ways. Third, actions in the physical space allowed students to rearrange their learning environment to minimize distractions, or engage in activities, such as knitting, that improved their focus. These practices were seen as demonstrating the students' prospective and *in situ* aspirations to create and sustain behavioral and emotional engagement but also good study routines, which are a significant part of organizational skills needed to succeed in online learning environments.

In contrast, disengagement was reported to result from different aspects. The first theme involved communication issues, including technical difficulties and the malfunctioning internet connections, that were understandably distracting and created inequality between the students (i.e.,

some were prevented from full participation). Second, camera-induced self-awareness contributed to disengagement due to the negative feelings of discomfort and self-exposure it engendered. Third, there were other cognitive factors, such as lack of interest in a topic, that rendered students more receptive to distractions in their physical and digital environment.

On the basis of our findings, we argue that teachers' solutions for interactive and collaborative class design, motivating class activities, and properly functioning technical solutions are crucial for building and maintaining student engagement in synchronous online classes. The use of web cameras, however, is problematic as it aroused both positive and negative perceptions of engagement. While for some students and in some situations, it facilitated engagement in the situation, for others it presented challenges, such as mirror anxiety (cf. Fauville et al., 2021) induced by a heightened awareness of one's own appearance. This conflicts somewhat with the wish to be visible (and thereby socially "maximally" present and connected), and emotionally engaged. This discrepancy may be explained by the change of one's focus from building a positive image of others that camera use can foster (Castelli & Sarvary, 2021) to focusing on the image of oneself and one's portrayal through webcams. While the former enhances engagement, the latter may impact it negatively. This creates a challenge for teachers in deciding when and how to use web cameras. For example, students can be informed about camera use beforehand and they can be asked to turn on their camera only at certain points (e.g., at the start and end of a session to greet one another and to say good-bye). We propose that the use of cameras as well as other online applications should have a function that is communicated to the students in order to maximize their positive effects. This is also important in our shift back to contact teaching. Whether students continue to feel similar thresholds to speak, cognitive load or anxiety is yet to be seen; however, what teachers can do is to consider the benefits of digital tools and parallel communication channels to improve engagement in sessions, for example, the use of chat or applications with which one can take part in discussion without speaking and putting oneself at focus. The chat function, or some equivalent, has potential to add something to face-to-face teaching and foster cognitive, emotional, and behavioral engagement in new ways.

On the basis of the findings, we also argue that student engagement in online settings should be seen as socially and actively constructed by the students. The students' experiences discussed in this paper are illustrative of the well-known effects of COVID-19 times to students' feelings of loneliness and isolation. However, their experiences also illustrate the resilient and creative strategies students used to overcome the challenges to their interactions with peers and teachers presented by the learning environment. This points to students' organizational skills and agency in making continuous efforts in investing in their own learning process (see also Kucuk & Richardson, 2019). It is also important to note that students' behavioral engagement was a prerequisite for the occurrence of other types of engagement, i.e., task and performance engagement. Thus, while supporting earlier survey findings on active learning models for online teaching and learning (e.g., Dixson, 2015; Garrison, 2017; Kucuk & Richardson 2019), our qualitative study also contributes to a more in-depth understanding of online student engagement as something that is actively pursued and construed by the students themselves (cf. Philp & Duchesne, 2016).

This study has its limitations. Owing to its focus on a small data set of one-time interviews rather than longitudinal data, the findings cannot reveal change in students' engagement over time nor compare the same students' engagement between co-present and online settings. In addition, due to being a preliminary study in the Finnish context, conclusions cannot be drawn in a straightforward or a generalizable manner. The study could be continued in the post-pandemic times by conducting interviews with students who have been involved in synchronous online or hybrid teaching in order to explore their perceptions of engagement. It would also be interesting

to study teachers' perspective of student engagement in both online and hybrid settings. Comparisons could be made between our present data set and the students'/teachers' experiences and perceptions of engagement in the post-pandemic synchronous sessions. This way we could gain a better understanding of how these issues manifest after the pandemic.

Despite the limitations of our study, with its in-depth exploration of self-reports of engagement using different types of data, it provides rich insights into the complexity of engagement that cannot be neatly grouped into specific categories, but which rather have to be considered in a holistic manner. We have thus been able to offer an *emic* perspective on the behaviors, attitudes and feelings that are considered key in constructing online learning communities and meaningful learning experiences, looking beyond what is said to *why* it is said. This approach is important for understanding the overall online learning conditions of students in the COVID-19 situation, as these are pressing issues that have not been fully explored. Moreover, research based on the findings and implications of this study is called for, since it can help improve developing solutions for teaching in the post-pandemic world. With this study, we hope to invite more discussion on the topic and call for initiatives that look at student engagement as part of the new and emerging formats, including methods of hybrid teaching. Students' perceptions can help educators and decision-making bodies better understand both the short and long-term repercussions of emergency remote teaching.

Since there continues to be a global demand for flexible solutions to online learning, including in Finland (see Digivisio, 2030), resources that support student/teacher collaboration in these environments need to be developed and studied further. We encourage more qualitative research on the topic of video-mediated teaching and its potential impacts on engagement and learning behaviors.

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References

Aagaard, J., 2021. "From a small click to an entire action': exploring students' anti-distraction strategies', *Learning, Media and Technology,* 46(3), 355–365. https://doi.org/10.1080/17439884.2021.1896540

Bozkurt, A., Sharma, R.C., 2020. 'Emergency remote reaching in a time of global crisis due to CoronaVirus pandemic', *Asian Journal of Distance Education,* 15(1), i–vi. https://doi.org/10.5281/zenodo.3778083

Braun, V., Clarke, V., 2006. 'Using thematic analysis in social psychology', *Qualitative Research in Psychology,* 3(2), 77–101.

Carrillo, C., Flores, M. A., 2020. 'COVID-19 and teacher education: a literature review of online teaching and learning practices', *European Journal of Teacher Education,* 43(4), 466–487. https://doi.org/10.1080/02619768.2020.1821184

Castelli, F.R., Sarvary, M. A., 2021. 'Why students do not turn on their video cameras during online classes and an equitable and inclusive plan to encourage them to do so', *Ecology and Evolution,* 11, 3565– 3576. https://doi.org/10.1002/ece3.7123

Cserző, D., 2021. 'Discourses and practices of attention in video chat', *Multimodal Communication,* 10(2), 143–156.

Corkhill, B., Hemmings, J., Maddock, A., Riley, J., 2014. 'Knitting and well-being'. *Textile,* 12(1), 34–57. https://doi.org/10.2752/175183514x13916051793433

Delahunty, J., Verenikina, I., Jones, P., 2014. 'Socio-emotional connections: Identity, belonging and learning in online interactions. A literature review', *Technology, Pedagogy and Education,* 23(2), 243–265. https://doi.org/10.1080/1475939X. 2013.813405

Digivisio 2030. Korkeakoulujen yhteinen digivisio 2030 [Higher Education Institutes Digivision 2030]. Suomesta joustavan opiskelun mallimaa. https://digivisio2030.fi/

Dixson, M. D., 2015. 'Measuring student engagement in the inline course: The Online Student Engagement Scale (OSE)', *Online Learning,* 19(4). http://dx.doi.org/10.24059/olj.v19i4.561

Farrell, O., & Brunton, J., 2020. 'A balancing act: a window into online student engagement experiences', *International Journal of Educational Technology in Higher Education,* 17(25). https://doi.org/10.1186/s41239-020-00199-x

Fauville, G., Luo, M., Queiroz, A. C. M., Bailenson, J. N., Hancock, J., 2021. 'Nonverbal mechanisms predict Zoom fatigue and explain why women experience higher levels than men'. SSRN. http://dx.doi.org/10.2139/ssrn.3820035 (Accessed: 4 May 2021)

Filsecker, M., Kerres, M., 2014. 'Engagement as a volitional construct: A framework for evidence-based research on educational games', *Simulation & Gaming,* 45(4-5), 450-470. https://doi.org/10.1177/1046878114553569

Garrison, D. R., 2017. *E-Learning in the 21st Century: A Community of Inquiry Framework for Research and Practice.* Routledge.

Garrison, D. R., Anderson, T., Archer, W., 2000. 'Critical inquiry in a text-based environment: Computer conferencing in higher education model', *The Internet and Higher Education,* 2(2-3), 87–105. Available at: https://cde.athabascau.ca/coi_site/documents/Garrison_Anderson_Archer_Critical_Inquiry_model.pdf

Háhn, J., 2020. '"Nice to get to know you": Social presence in virtual exchange discourse'. In S. Grasz, T. Keisanen, F. Oloff, M. Rauniomaa, I. Rautiainen, M. Siromaa (Eds.), *AFinLA vuosikirja. AFinLA yearbook.* 78 (pp. 33–55). DOI: https://doi.org/10.30661/afinlavk.89449

Hodges, C. B., Moore, S. L., Lockee, B., Trust, T., Bond, M. A., 2020. 'The Difference between emergency remote teaching and online learning', *EDUCAUSE Review*. Available at: https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning (Accessed: 25 July 2021)

Jackson, C. D., 2020. *Examining relationships between student perceptions of Community of Inquiry as a predictor of cognitive and behavioral engagement mediated by self-efficacy*. [Doctoral dissertation]. University of Oklahoma. Available at: https://hdl.handle.net/11244/326689 (Accessed: 5 October 2021).

Jacobi, L., 2018. 'What motivates students in the online communication classroom? An exploration of self-determination theory', *Journal of Educators Online,* 15(2). https://www.thejeo.com/archive/2018_15_2/jacobi

Kahu, E. R., 2013. 'Framing student engagement in higher education', *Studies in Higher Education,* 38(5), 758-773. https://doi.org/10.1080/03075079.2011.598505

Kahu, E. R., Nelson, K., 2018. 'Student engagement in the educational interface: Understanding the mechanisms of student success', *Higher Education Research & Development,* 37(1), 58-71. https://doi.org/10.1080/07294360.2017

Kahu, E. R., Picton, C., Nelson, K., 2019. 'Pathways to engagement: a longitudinal study of the first-year student experience in the educational interface', *Higher Education* 79, 657–673. https://doi.org/10.1007/s10734-019-00429-w

Kucuk, S., Richardson, J. C., 2019. 'A structural equation model of predictors of online learners' engagement and satisfaction', *Online Learning* 23(2), http://dx.doi.org/10.24059/olj.v23i2.1455

Martin, F., Bolliger, D. U., 2018. 'Engagement matters: student perceptions on the importance of engagement strategies in the online learning environment', *Online Learning,* 22(1), 205–222. http://dx.doi.org/10.24059/olj.v22i1.1092

Massner, C. K., 2021. *The use of videoconferencing in higher education* [Online First], IntechOpen, DOI: 10.5772/intechopen.99308. Available at: https://www.intechopen.com/online-first/77715

Nkomo, L., Daniel, B.K., Butson, R.J., 2021. 'Synthesis of student engagement with digital technologies: a systematic review of the literature', *International Journal of Educational Technology in Higher Education,* 18(34). https://doi.org/10.1186/s41239-021-00270-1

Nworie, J., 2021. 'Beyond COVID-19: What's next for online teaching and learning in higher education?' *EDUCAUSE* review. Available at: https://er.educause.edu/articles/2021/5/beyond-covid-19-whats-next-for-online-teaching-and-learning-in-higher-education (Accessed: 19 May 2021)

Oittinen, T., 2020. *Coordinating actions in and across interactional spaces in technology-mediated business meetings*. [Doctoral Dissertation]. Available at: https://jyx.jyu.fi/handle/123456789/69067

O'Shea, S., Stone, C., Delahunty, J., 2015. "'I 'feel' like I am at university even though I am online." Exploring how students narrate their engagement with higher education institutions in an online learning environment', *Distance Education,* 36(1), 41-58. https://doi.org/10.1080/01587919.2015.1019970

Philp, J., Duchesne, S., 2016. 'Exploring engagement in tasks in the language classroom'. *Annual Review of Applied Linguistics,* 36, 50–72. https://doi.org/10.1017/S0267190515000094

Richardson, J.T., Long, G. L., Woodley, A., 2003. 'Academic engagement and perceptions of quality in distance education', *Open Learning,* 18(3), 223–244. https://doi.org/10.1080/0268051032000131008

Räisänen, T., 2019. 'Discursive identity work and interculturality during blue-collar work practice abroad: Finnish engineering students as language learners and users'. In M. Howard (Ed.), *Study Abroad, Second Language Acquisition and Interculturality* (pp. 75-102). Bristol: Multilingual Matters.

Sitzmann, T., Ely, K., Bell, B. S., Bauer, K. N., 2010. 'The effects of technical difficulties on learning and attrition during online training', *Journal of Experimental Psychology*: *Applied,* 16(3), 281–292. https://doi.org/10.1037/a0019968

Stone, C., O'Shea, S., 2019. 'Older, online and first: recommendations for retention and success', *Australasian Journal of Educational Technology,* 35(1), 57–69. https://doi.org/10.14742/ajet.3913

Swan, K., Garrison, D. R., Richardson, J. C., 2009. 'A constructivist approach to online learning: the Community of Inquiry framework'. In C. R. Payne (Ed.), *Information Technology and Constructivism in Higher Education: Progressive Learning Frameworks* (pp. 43–57). Information Science Reference. https://doi.org/10.4018/978-1-60566-654-9.ch004

Swar, B., Hameed, T., 2017. 'Fear of missing out, social media engagement, smartphone addiction and distraction: moderating role of self-help mobile apps-based interventions in the youth'. In *Proceedings of the 10th International Joint Conference on Biomedical Engineering Systems and Technologies* (pp. 139–146). BIOSTEC 2017. https://doi.org/10.5220/0006166501390146

Appendix. Interactional spaces framework (Oittinen, 2020, p. 23)