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Challenges in virtual team communication in the context of virtual exchange experience

Research Article

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Abstract: As technology has enabled people across the world to collaborate and create virtual communities, the ability to interact in computer-mediated, cross-cultural environments in a meaningful way has become a necessity. This is particularly true for younger adults who operate in virtual teams during their studies, for instance in virtual exchange projects, and later in their professional life. In this qualitative study, we examined the features and functionality of cross-cultural communication in virtual exchange teams. By analysing three datasets produced by Finnish university and American community college students (n=38) who participated in a virtual exchange, we examined what kinds of challenges emerge in the communication of virtual teams and how students use theories of computer-mediated communication when trying to make sense of those challenges. The results of the reflexive thematic analysis indicated that the challenges in communication of virtual teams stem from cultural and motivational differences. These challenges could be alleviated by increasing the shared work time allocated for social information sharing and for constructing appropriate, team-specific ways to express online social presence and propinquity. The findings highlight the meaningfulness and relationality of virtual team communication and provide insight into motivational factors and the sense of belonging when communication challenges arise.

Keywords: *Computer-mediated communication; Cross-cultural communication; Virtual exchange; Virtual teams; Sense-making*

Introduction

Despite being separated across time and space, communication technologies allow us to feel copresence and promote global learning in real time. Computer-mediated communication in its various forms has become a shared virtual place where meaningful cross-cultural experiences can occur, which increase the social capital and professional competences of those who participate in it. The cross-cultural communities that emerge in computer-mediated communication have become a meaningful place for higher education students to meet, particularly after the coronavirus disease (COVID) pandemic severely limited their opportunities to physically participate in cross-cultural exchange.

While academic institutions across the world struggled with implementations of online learning, they also started to see the value of virtually interconnected cross-cultural places. For instance, in the United States, many community colleges welcomed the increase in the number of virtual exchange programmes. For economic reasons, studying abroad is not always a feasible

option for community college students; so, virtual exchange was seen as an option to provide them with the experience (Custer & Tuominen, 2017). However, the same thing happened in countries that traditionally had a high participation percentage in study-abroad programmes. A good example of this is Finland, where approximately 25%–30% of university students (8,900–10,680 students) have traditionally participated in a 3- to 12-month-long study-abroad experience during their studies. Although intercultural student exchange is actively promoted, during the pandemic, the exchange rate dropped to zero (OPH, Finnish National Agency for Education, 2019). To fill this void and at least partially provide students with the ability to understand and function in a global context, universities started to strongly encourage faculty members to create more virtual exchange experiences for students.

Virtual exchange experiences are places where students participate in discussions with the help of a facilitator, who usually is the course instructor (O'Dowd, 2018). Almost all virtual exchange experiences rely on communication between the participants. However, only a small number of virtual exchange experiences

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allow students to analyse and focus on communication theories related to computer-mediated communication. Virtual exchange experiences often call upon students to be rooted in a sense of self, place and national identity, to honour their origin and to bring those experiences into open-minded conversational exchanges. International virtual exchange projects require students to grapple with their perceptions of other nations, cultures and communities while simultaneously traversing national boundaries to explore mediated spaces and communities. The COVID pandemic has also allowed us to see how interconnected the world is. However, establishment of cross-cultural connections, whether they happen in face-to-face or online settings, does not always happen without issues.

Previous studies (Sherblom, 2020; Stärke, 2020) have detected a higher possibility for misunderstandings in both computer-mediated and cross-cultural communication. People use their existing frames of reference when they interpret communication in cross-cultural communities, and those frames do not always lead them to the right direction. This is particularly true if the participants are relatively young and if they have limited life experiences (Stärke, 2020). As the implementation of an exchange experience through computer-mediated communication in a virtual place is not always uncomplicated, our goal in this study was to increase understanding regarding the facilitation of the computer-mediated communication that occurs during virtual exchange experiences. Therefore, this study seeks to identify specific communication-related challenges and examine the ways in which students attempt to make sense of them through the framework of computer-mediated communication theories.

The Virtual Exchange Experience Case

The virtual exchange experience case that is examined in this study took place between Finnish university students (n=40) and American community college students (n=23). All students participated in communication studies courses offered by their institutions. The experience was facilitated by a senior lecturer and a professor, both with doctoral degrees in communication science. The virtual exchange took place in a collaborative online intercultural learning community that was divided into smaller virtual teams. According to O'Dowd (2018), virtual exchange can be implemented in various ways: telecollaboration, online intercultural exchange, E-Tandem, global virtual teams, collaborative online international learning and globally networked learning environments. All these approaches share the same educational goals: the development of transversal skills, digital literacies, intercultural awareness and the ability to live and work together with people from other cultural backgrounds (Guth & Helm, 2010). This shows that most virtual exchange programmes have been developed from practitioner-driven, institutionally led and outsourced initiatives with similar goals but different methods.

The two main goals of this virtual exchange experience were to offer the participating students a venue for both improving their computer-mediated and cross-cultural communication competences and learning about the target cultures. In the context of this study, *computer-mediated communication competence* is defined as 'communication within a technological medium through which individuals construct social and relational meaning, and mediation is referring to the process by which something is transferred' (Sherblom, 2020, p. 2). In computer-mediated communication, the likelihood for misunderstandings is higher than in face-to-face communication, because meaning-making can be affected by the lack of multimodality: The range of non-verbal codes is vast, and it accounts for a lot of the social information (Sherblom, 2020). The way in which 'culture' was defined in this experience drew from the description of Hofstede et al. (2010), according to which *culture* is 'the collective, learned programming of the mind that distinguishes the members of one group or category of people from others' (p. 6). As computer-mediated and intercultural communication competence, global citizenship and the ability to work in a diverse cultural context were defined to be at the core of the virtual exchange experience case, a practical goal in the collaboration was to enable students to have meaningful cross-cultural experiences.

This virtual exchange collaboration met the *Virtual Exchange Standards* (Evolve, 2021) as it was *sustained*, meaning that it included regular, intensive interaction between Finnish and American students. It was also *technology-enabled* and mostly *synchronous:* students used Zoom, Google Jamboard and Google Docs during actual classes and computer-mediated communication applications that allowed high social presence when *interacting* with each other. The goal of this was to inspire dialogue that could bridge the spatial distance. The experience was both *learner-led* and *facilitated* by course instructors as this *educational* programme was planned to use measurable learning objectives where the students learned through dialogue that co-created knowledge that stemmed from both teaching materials and their own experiences. The collaboration was also *structured to foster mutual understanding* as it covered

three topics related to culture as content and interaction: cultural identity, listening, and computer-mediated and intercultural communication competence.

Virtual Exchange Participation: Motives and Challenges

One of the reasons that universities aim at increasing virtual exchange experiences is the string of benefits that have been attached to studying abroad (Luo & Yang, 2022). When abroad, students learn about other cultures, increase their language skills and get experiences about different ways of learning. All of these have been noted to increase their employability in the labour market (Marciniak & Winnicki, 2019); so, it is necessary to ensure that institutions of higher education continue to strive to offer students virtual exchange experiences even when it is hard to implement global study-abroad programmes. Virtual exchange programmes help to increase students' cultural competence and lessen the possible risks that the internationalisation of education can bring along (e.g. commercial profits, academic colonisation and difficulties in providing a high-quality education; Marciniak & Winnicki, 2019).

According to Krazlewska (2008), the motives that encourage students to participate in study-abroad programmes could be roughly divided into two groups: experimental and career-related. The experimental dimension includes cultural motivations such as wanting to experience a new culture and live in it, as well as personal motivations such as wanting to have fun, be independent and get an opportunity for self-development. The career dimension includes wishes to improve career prospects, as well as academic motivations such as hopes to get better grades after the exchange period and to improve overall academic knowledge. In this case study, participants reported roughly equal levels of participation (with a slight emphasis on experimental) in their pre-assessment entries.

As the equal division of the motivation of the participants indicates, people participate in projects for different reasons. This may cause them to expect to get different things out of the experience. Therefore, it is no surprise that motivation-related issues were seen as one of the biggest challenges in language learning–focussed virtual exchange experiences (Luo & Yang, 2022). Some other challenges that were attached to virtual exchange have been, for instance, reinforced stereotypes of target cultures, unequal participation (Luo & Yang, 2018) and issues related to operating from different time zones (Luo & Yang, 2022).

Challenges that can occur during a virtual exchange experience have been researched relatively widely from the perspective of language learning (Luo & Yang, 2018), but the perspective of computer-mediated communication in relation to the communication challenges of virtual teams seems to be somewhat lacking. This is surprising as, in virtual exchange, students work in virtual teams. In this study, the definition of a virtual team draws from Hakonen and Lipponen (2009), who suggested that a *virtual team* is 'a group of people, dispersed in many locations, striving toward a common goal, through computer-mediated communication' (p. 17). The shallow focus on communication is somewhat worrisome as computer-mediated communication competence is a particularly valuable asset for university students in an increasingly globalised world where they are more than likely to participate in cross-cultural teams. In those, they will interact online with people who have different values, beliefs and experiences due to their various cultural backgrounds. To understand the challenges that the cross-cultural, computer-mediated communication causes for virtual teams, the first research question (RQ) was posed as follows:

RQ1. What kinds of challenges emerged in virtual team communication?

Examining this was considered important because it sheds light on the challenges that emerge in cross-cultural virtual team communication. Given the growth of virtual exchange programmes in educational settings and the use of virtual teams for business transactions, addressing cross-cultural communication challenges is the key to the success of virtual teams. Examining this question is also important because it provides a deeper understanding of how virtual team communication could be facilitated to ensure that team members are able to combine their knowledge online and achieve the specific outcomes through dialogues that have been set for their team.

Understanding Virtual Team Participation and Communication

In virtual exchange, team members that represent different cultural groups do not usually know each other prior to the experience. This means that their teams do not have established ways of working, team communication norms or practices or any common ground that they could use as a basis for their team identification. As it was noted that efficient team communication requires that members of the team identify strongly with the team and its purpose (Hakonen & Lipponen, 2009), the

common ground that they are lacking may force them to have to work harder to get the team communication to a sufficient level. According to Meyerson et al. (1996), the identification with the virtual team seemed to be constructed through the development of interpersonal trust. They stated that if the team task requires trust, but people have not had enough time to become acquainted with each other, trust is built on role-based interaction and prototypical categorisations. Getting to know someone and building enough trust to be able to identify with that person was noted to require frequent communication over a longer period (Meyerson et al., 1996).

When teams become more familiar to team members, it opens a possibility for trust to develop and for team members to identify with their virtual team. However, this is a two-way process.Rothman and Wiesenfeld (2007) stated that the more trust the team members feel towards each other, the more they identify with the team and the more willing they are to invest in the team communication; however, at the same time, for the trust to be built, they need communication but are not as motivated to communicate without having established identification with the team. If the purpose of the communication is to develop trust and identification through self-disclosure, it can be assumed that any challenges in that communication hinder the achievement of the goal, especially if the time allotted for that is limited.

Schildt et al. (2020) found that if a communication situation does not meet the expectations set for it, people try to make sense of it through sense-making. When something does not work as assumed, people try to understand why that is so (Derwin, 2015). As recognising challenges in virtual team communication can provide important information regarding how virtual exchange experiences can be implemented better, understanding how students make sense of these communication challenges by using course content that they have previously learned can offer valuable information regarding their understanding of a virtual community and its possibilities as a place for participation. As team members occupy virtual spaces, they also attempt to make sense of the role they play in virtual communities. If they cannot make sense of the situation, it may affect their ability to increase the trust among the group members through communication and help the group to meet the goals that are set for it. Therefore, a second RQ was formed as follows:

RQ2: How do students explain the challenges they faced in their cross-cultural virtual team communication with theories of computer-mediated communication?

This RQ was considered important not just from the perspective of team members' personal competence development but also from the perspective of virtual team efficiency and functionality. In a previous study, Hedman and Valo (2015) suggested that developing awareness of team communication challenges allows team managers to establish reflective communication practices, but in this research, we seek to expand this thought and want to examine whether understanding the reasons for communication challenges could encourage the team members to work harder and solve the communicational issues that they may face.

Method

Sample

Although the total number of students who participated in the virtual exchange was 63, the data for this study was gathered only from Finnish participants (n=38 out of 40 students). They were selected because they were assumed to have already formed a deeper understanding of virtual team communication during their computer-mediated communication course compared with their American peers, who participated in a general undergraduate communication course. For the Finnish participants, the virtual exchange part was the fourth and last module of their course. This module offered them an opportunity to experiment more thoroughly regarding how cross-cultural virtual teams function in a computer-mediated environment.

The first three modules of the course were dedicated to learning about various features and theories of computer-mediated communication that the students were expected to test in practice during the virtual exchange experience. The first module of the course addressed theories that focus on the medium or on contextual constraints when using computer-mediated communication (Media Richness Theory; Media Naturalness Theory; and Affordances Perspective). The second module concentrated on theories that focus on relational communication when using computer-mediated communication (Presence and Social presence; and Propinquity Theory), as well as on theories that focus on language use in interpersonal computer-mediated relationships (Social Information Processing [SIP] Theory, Hyperpersonal Perspective, and Social Identity Model of De-individuation Effects [SIDE]). The third module covered virtual participation online, as well as effects of computer-mediated communication on offline life. These were approached from perspectives of virtual identities, virtual teams, networks and communities, as well as the Proteus effect.

When students studied these modules, they

were offered the virtual exchange module, which was constructed using the pedagogical approach of experiential learning that encompasses a holistic integrative perspective on learning. According to Stärke (2020), virtual exchange is a university-level educational frame of experiential learning that allows participants to actively interact and be challenged by cultural differences and technology. In this virtual exchange, students were given the opportunity to engage with other students in a variety of communication media while occupying different aspects of space and place.

Data gathering

To ensure sufficiency of data, three datasets were gathered using structured online forms. The first dataset consisted of 38 pre-assessments of students' expectations regarding the virtual exchange, computer-mediated communication and cross-cultural communication. The analysed responses of this dataset responded mostly to RQ1. The second dataset consisted of individual journal entries of the 38 students, in which they elaborated the virtual exchange experience from practical and theoretical perspectives. After analysis, this dataset provided data mostly to RQ2. The third dataset consisted of 38 post-assessments of students' perceptions regarding the virtual exchange, computer-mediated communication and cross-cultural communication. The analysed responses of this dataset provided data mostly to RQ1, but some observations were also used as data for RQ2.

The completion of assessments (Datasets 1 and 3) required 15 min of time, which was included in the instructor-led Zoom meetings. The individual journal entries (Dataset 2) were more laborious as the texts that students produced were 4–6 pages long. These concise yet structured datasets provided sufficient data for us to examine the students' competences related to computer-mediated and cross-cultural communication and to consider improvements for future implementations.

Since the data were gathered from university students, certain ethical considerations must be addressed. The participation in the study was voluntary and did not affect the grading of the course. The data-gathering process was conducted in a transparent manner, and the students were able to opt out from providing any or some parts of the data. This was ensured by asking their consent in every assignment. The reasons for the data gathering, the de-identification of data and options to opt-in or opt-out, as well as information regarding who has access to the data and where it will be stored, were both verbally explained to the students at the beginning of each instructor-led Zoom session and written on each assignment.

Data analysis

The data were analysed inductively by using reflexive thematic analysis (Campbell et al., 2021). This method was chosen because it allowed inductive identification of virtual team communication challenges and recognition of patterns in the theory-driven sense-making of the challenges that students reported. Because the focus of the study was the subjective experiences of students, thematic analysis was the most suitable way of categorising a relatively large body of data (368 pages of text, 12 Times New Roman font, 1.5 spacing).

We used a reflexive journal to help us remember all stages of the analysis. First, we kept the first RQ in mind while we read the datasets through several times. We noticed two general themes, culture and motivation, emerging under RQ1. The same procedure was repeated with RQ2, and again, two general themes, social information sharing and social online presence, emerged. Naming these themes required a thorough discussion as we needed to confirm that we created labels that accurately encapsulated the properties of the themes.

As we wanted to understand what the general themes consisted of, we started searching for sub-themes individually. In this stage, we used colour coding of the raw data, a different colour representing each sub-theme. Afterwards, we compared the sub-themes that we had found to make sure that our coding systems were systematic, reliable and consistent. Possible differences in emphases were solved through discussion. Then, we looked out for code patterns that the sub-themes consisted of. The code patterns were interpreted against the research objectives and the social constructivist framework of the study. This reflection confirmed that the patterns produced accurate information for our RQs. Examples of the sub-themes and the code patterns can be seen in our results presented as tables and figures.

Results

The first RQ sought an answer to what kinds of communication challenges emerged in the virtual team meetings during the virtual exchange. The results of the reflexive thematic analysis indicate that the challenges were related to either cultural differences or motivation.

Cultural differences challenging virtual team communication

The challenges that stemmed from cultural differences formed three different categories: challenges related to

differences in communication culture, challenges related to cultural differences in social media use or challenges related to differences in language proficiency levels. These challenges, presented in Figure 1, affected the sense of togetherness that the students reported as having experienced during the virtual meetings and played a part in the virtual team communication remaining superficial and considered incomplete.

The challenges that stemmed from differences in communication culture addressed themselves in the interaction between the virtual team members. For instance, talking with strangers felt challenging for Finnish students, because *'talking with someone is taken seriously in Finland, it is not done just for fun'* (Finnish student 26 [FS26]), and trying to break the ice through small talk felt laborious. Finns expected Americans to be talkative and eager to participate, but during the virtual exchange experience, they discovered that the Americans turned out to be quiet, shy and reserved. Stereotypically, these are things that Finns are labelled as.

Students also reported that they were not certain whether both cultural groups understood the topics in the same way: '*It was as if we were working on different tasks when Americans chatted lightly on the Zoom text chat while Finns dived deep into a topic in the Zoom video call'* (FS5). In general, Americans were described to be direct and to communicate in a brainstorming style, whereas Finns were inclined to approach the topics in an analytical manner.

There were some attempts to adapt to the different communication culture of the other group. Many Finns acknowledged that after the awkwardness of silence was pointed out by Americans, they started to feel uncomfortable with it as well during Zoom video calls. According to them, in Finnish communication culture, silence is tolerated well and considered as a sign of respect towards the speaker and their thoughts. However, after it was mentioned to be weird, they started responding faster to eliminate conversational pauses.

Challenges related to cultural differences in social media use were mostly practical. As Finnish and American students preferred to use different social media, the unfamiliarity of some social media apps led to some challenges right from the start as the team members had a hard time compromising on the medium that they were going to use for their team communication. Americans preferred TikTok, Discord and Snapchat, whereas Finns favoured WhatsApp, Instagram and TikTok. The ones that had to compromise and use a less-familiar medium reported reduced motivation to participate in the teamwork.

Language proficiency was also found to cause practical challenges in virtual team communication. Most Finnish students said that communicating in a language that was not their mother tongue made it difficult at times to understand the American students and to express their own thoughts in the intended way. Moreover, the differences in listening styles emphasised the language proficiency gap, as Finnish students preferred to listen quietly and wait instead of interrupting the speaker even if they did not understand. They often needed additional time when they tried to form a polite question, and by the time they got around to posing the question, American
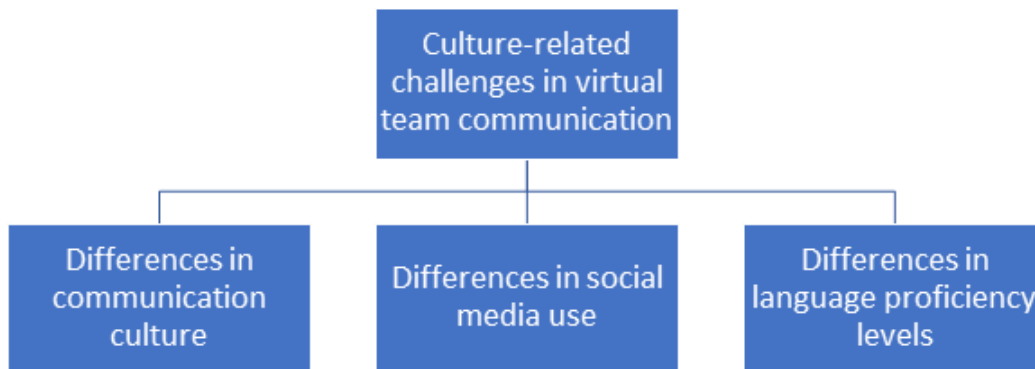

Figure 1. Culture-related challenges in virtual team communication.

students had already started to talk about something else or asked a different question from Finns.

Motivation-related challenges affecting virtual team communication

Motivation seemed to work as a common denominator for a wide variety of individual- and team-level challenges. The results presented in Table 1 indicate that motivational challenges were practical, communicational, attitudinal or relational.

The practical motivational challenges that emerged at the individual level became overt when students were unwilling to find time to participate in group tasks or were not motivated to conquer their shyness and contribute to the group discussions. At times, they also felt unmotivated because they felt that their proficiency in English was not on the native speaker level. The practical motivational challenges at the team level were either caused by the implementation of the virtual exchange or the knowledge level of the team members. The Finnish students stated that the teams were too big for them to feel motivated to participate and the time difference made it impossible to complete the tasks on time. They also said that it felt like Americans did not know much about computer-mediated or cross-cultural communication and they were not interested in Finnish culture, so there was no practical motivation for the team to communicate as well as it could have.

The communication-related motivation challenge that occurred on both individual and team levels was the general lack of interaction. The students reported that, in general, their life was too exhausting, so they did not have the energy to feel motivated to contribute to group discussions or even show up. On the team level, motivation to communicate was deflated, because the lack of responsiveness caused uncertainty about the

listening motivation of their team members. They could not get feedback about it because cameras were not used during team Zoom meetings, which deflated their motivation to interact or address confusion.

On the individual level, the attitude-related motivational challenges stemmed mostly from negative opinions that some students had towards the mandatory course that was part of the virtual exchange. Some students reported positive attitudes towards the virtual exchange but negative attitudes towards a specific task, which led to the lack of motivation in trying to overcome communication-related challenges. On the team level, a major thing that affected attitude-related motivation was the fact that there were no social consequences for failures in team communication. Due to this, students did not feel any social need to invest in improving the communication within their virtual team.

The lack of motivation also caused relational challenges to emerge in team communication. Students had varying relational expectations towards the virtual exchange experience. If the expectations were not met, it caused the team members to have reservations towards each other and lessened both the feeling of belonging and their motivation to participate in team discussions. It also led to negative relational interpretations. If someone did not participate in a team meeting, it was interpreted as *'the person NEVER shows up'* (F11). When the person then showed up, others were reserved, which did not increase the functionality of the team communication.

Communication patterns and roles that were established early on in teams also hindered the relational functionality of the team communication. People who had not been asked to engage in a conversation in the beginning of the programme interpreted that as exclusions from other team members. These fixed roles that the group members either adopted or were assigned to them were reported to be one of the biggest

Table 1. Motivation-related challenges in virtual team communication

	Individual-level challenges	**Team-level challenges**
Practical challenges	Temporal Personality-related (introversion) Competence-related	Implementation-related (time + team size) Knowledge level-related
Communicational challenges	Lack of communication and participation Unresponsiveness	Lack of communication and participation Unresponsiveness Lack of overt listening behaviour Lack of feedback (expressions of confusion, [dis]agreements)
Attitudinal challenges	Negative attitudes towards the task Lack of resourcefulness	No social consequences from not participating
Relational challenges	Negative interpretations Unwillingness to compromise Varying expectations	Negative attitudes towards other team members Roles and communication patterns formed early and were permanent De-individuation (we vs. they)

motivation-related challenges as it made some of the team members feel ostracised.

Making sense of the challenges in virtual team communication

The second RQ examined the sense-making of the challenges in virtual team communication. The students used computer-mediated communication theories that were taught during other modules of the course as a tool when trying to understand why their virtual team communication had issues. The results of the thematic analysis indicated that there were two major approaches for the lack of motivation and its implications: the social information sharing approach and the social online presence approach.

Social information sharing approach

Roughly half of the students approached the challenges in their virtual team communication from the perspective of social information sharing. They interpreted the challenges through social information processing theory, media richness theory and media naturalness theory when they tried to understand why their team communication was so difficult. They started with the notion that they had not been motivated to share even the basic demographic information about themselves with others. This is an interesting finding considering that one of the main goals of the virtual exchange was to get to know people from other cultures. The results of the social information sharing approach are presented

in Figure 2 and are discussed thereafter.

Social information processing theory suggests that creating a deeper relationship can take time. In this project, the students stated that the length of the virtual exchange (5 weeks) did not give them enough time to create a trustable space that would have encouraged information sharing. One student pointed out, *'there was so little time to interact, so anonymity was easier'* (FS32). When practically no personal information was shared, the relationship development between the team members slowed down, which led to heavily task-biased communication. Some Finnish students also stated that there were different levels of intimacy in the information sharing process, because they knew some students in advance, which made team communication more difficult.

Some students discussed social information sharing in the framework of *media richness theory*. They acknowledged that as all media vary in their ability to enable communication, some are more efficient in reducing possible misinterpretations of a message. As the richness of each media is based on four criteria, namely feedback, multiple cues, language variety and personal focus, the students stated that the lack of non-verbal cues in leaner media seemed to lead to slower relationship creation as the impressions of others were made purely from verbal or written cues: '*Most of our team members didn't turn their cameras on even when we asked to, which made everything awkward. How do you get to know someone if they don't even want you to see them*' (FS8)?
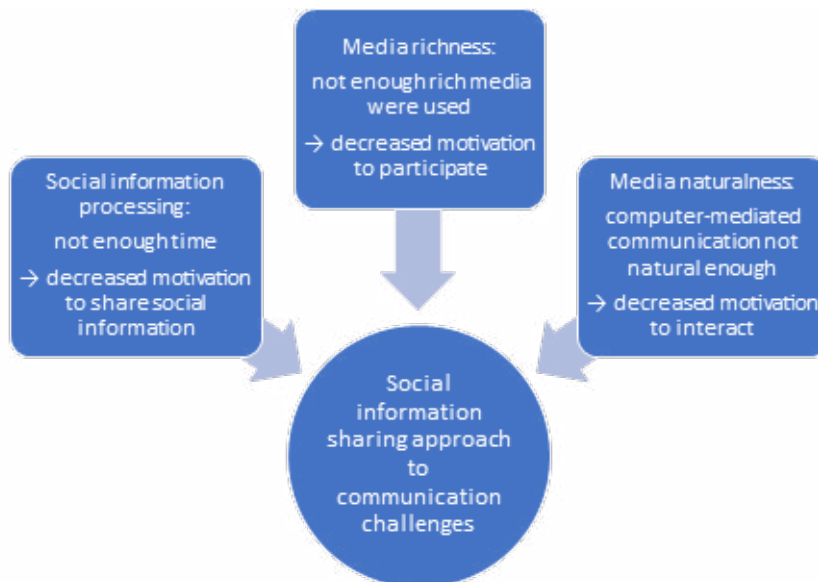

Figure 2. Social information sharing approach to explain challenges in virtual team communication through theories and concepts of computer-mediated communication.

Even though students explained the challenges with the use of lean media, leanness as also appreciated as it facilitated crossing the language barrier. Finnish students reported that the lean medium gave them more time to think what to say in English. At the same time, it did not feel natural to share personal information in the chat as the asynchronous nature of lean media led to task-oriented communication. That, in turn, created more social distance between the team members which reduced the motivation to share social information.

The *media naturalness theory* was also combined with the social information processing theory when the students sought explanations to challenges in sharing personal information. The use of lean media hindered sharing as it did not feel natural. However, students felt that video calls could have resembled face-to-face communication and felt more natural if all of them had invested in interaction and used their cameras. Some did not do that, which decreased the shared sense of collaboration. The lack of non-verbal cues resulted as increased communication ambiguity and misunderstandings. When the whole team did not appreciate the potential richness or naturalness of the medium, video calls were not enough to make the team communication optimal.

Social online presence approach

The team communication challenges were also explained from the perspective of social online presence, which they felt was lacking. Students came to this conclusion after making sense of the challenges by analysing

them with the concepts of social presence, affordances perspective, experienced electronic propinquity and social model of de-individuation effects. These results are presented in Figure 3.

As the students noticed that digital interfaces greatly affected the sense of being with one another, they applied the concept of *social presence* to their sense-making process. One of the biggest realisations that they had was the lack of interpersonal trust that resulted from the lack of social presence. Even though the teams had a chance to meet as often as they wanted, the team meetings were paradoxically considered too infrequent to express social presence and maintain the little trust that was developed, and the less online interaction there was, the less trust was reported to exist between the team members. Visual anonymity and asynchronous, text-based communication decreased social presence even further. This led to difficulties, because when interpersonal trust was not developed, participant activity and conversational openness remained low, and no communication satisfaction occurred.

The lack of social presence was also explained through the *affordances* that the medium offered. The students suggested that a better acknowledgement of technological affordances that rich media offered could have helped. With affordances, they were referring to all possibilities that the used media have that can facilitate interaction between its users, whether they are noticed and used or not. The lack of taking advantage of the affordances was reported to lead to two simultaneous interaction groups within a team: '*the ones who used*
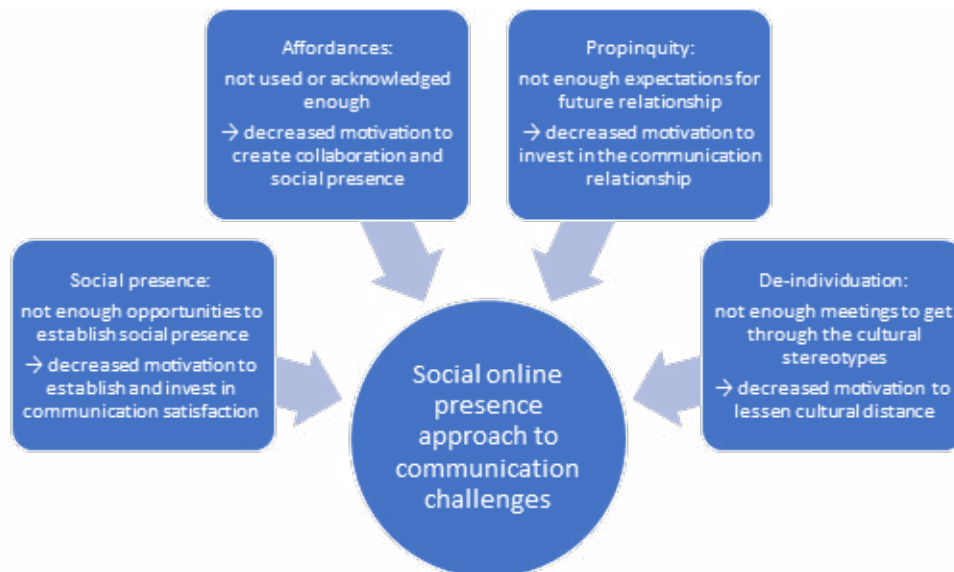

Figure 3. Social online presence approach to explain challenges in virtual team communication through theories and concepts of computer-mediated communication.

cameras interacted with each other, and the ones that used only the text-based chat in Zoom had their own conversations'(FS30). This created confusion within the group, so a voice call was suggested as a compromise to make social presence stronger and all group members comfortable. The failure in taking advantage of all medium affordances was linked to lessened motivation and to the realisation that the perceived affordances of the medium were not always the same to all group members.

The results indicate that students linked the low experienced *propinquity* that the absence of social presence caused to the lack of synchronous discussions. The students realised that even though they had wide bandwidth, several communication medium options, mutual directionality and mostly also skills to take advantage of these propinquity-increasing factors, they lacked the social incentive to invest cognitive effort to create more propinquity. This led to a situation in which the team did not experience communication satisfaction, which lessened the motivation to invest in propinquity and social presence even more.

The students explained that the challenges in creating social online presence were also caused by *de-individuation*. They did not meet often enough to get through the cultural stereotypes, and when cameras and microphones stayed closed, communication became impersonal, and no 'language of the group' was created. This did not lead to just the emphasis of cultural differences, but communicational differences became visible and led to de-individuation. For example, one student stated, '*we explained it with the lack of communication competence of Americans, and while some of those juxtapositions were based on reality, some of them were categorising and unfair*' (FS19). Furthermore, the professional orientation towards the subject matter seemed to create the division between 'us' and 'them.' The Finnish students who were communication majors reported that, as future communication professionals, they had a lot more interest in both computer-mediated and cross-cultural communication than their American peers who majored in various subjects.

Discussion

This study offers two major findings related to virtual team communication and the challenges that it faces. We believe that even though these findings are related to the context of higher-education virtual exchange, it can be used to enhance any virtual team communication. The first finding is the emphasised role of meta communication. What we mean by this is that the team members must know what makes the teamwork meaningful enough for all of them, so they are motivated enough to invest cognitive effort and time in the construction of team communication. In other words, the team members must actively discuss communication motives and practices from the beginning of their team formation throughout the team's life span so that they know what is sufficiently meaningful for them. We found that it is not enough if the team discusses how meaningful they consider the team communication to be professionally, but they also need to find it meaningful experientially and relationally. A clear emphasis was laid on the relational aspect of team communication because when it was found to be particularly rewarding, it seemed to compensate the lack of professional meaningfulness of the communication. When team members felt that their team members appreciated them, they experienced relational belonging and seemed to be a lot more motivated to invest in team communication because the relational aspect made it meaningful for them.

As meaningfulness was found to be imperative for the team communication to become functional, yet it is a subjective concept and the meaning of it varies from one person to another, the role of meta communication becomes even more important. Particularly in situations in which team members come from various cultural backgrounds, the meanings that they give to concepts can vary a lot. Järvenpää and Leidner (1998) suggested that the more culturally dispersed a virtual team is, the more likely it is that there will be challenges in their communication. Based on the results of this study, we argue that even when virtual team members' cultures are rather similar at the surface level (Harrison et al., 2002) as both Finnish and American cultures are according to Hofstede et al. (2010), challenges in virtual team communication can be triggered by their functional-level diversity (Batarseh et al., 2017). This means that a lot of meta communication is required, so that the team members understand the variation, for instance, in their cultural habits regarding small talk, sharing information and establishing meaningful relationships.

A deeper-level communication feature that also caused challenges and would have required meta communication in the virtual teams of our virtual exchange experience was listening. Our teams were Finnish and American, which meant that a reactive and listening-centred culture (Finns) met a linear-active talking-centred culture (Americans) (Lewis, 1996). This means that their ways of showing respect to someone who was speaking, asking clarifying questions, giving verbal and non-verbal feedback and attitudes towards

silence and confrontation differed a lot. When there was no meta communication regarding these things, the team members misinterpreted the communication of others and assumed that others did not want to look for compromises in accomplishing the tasks. Similar cross-cultural misinterpretations can happen in any virtual team, so this finding emphasises the importance of meta communication regarding the awareness of communication-related cultural nuances.

The second finding of the study is related to the detected relationality of the team communication. As the results emphasised the need for relational belonging, virtual team communication that focusses on building relational connections between team members through information sharing and expressions of social presence can be considered a means to also increase the experienced meaningfulness of team communication, because sharing has been detected to increase the sense of 'being there for each other' and the motivation to invest in team communication (Sherblom, 2020). If a team member experiences meaningful inclusion, the communication of the virtual team seems to be more likely to overcome the challenges it faces.

The relational communication-related findings of the study highlight the interdependency of social information sharing and social presence. When someone shows trust towards others, they indicate also social presence as they show effort in investing in a communication relationship, which encourages others to share information. In previous studies (Järvenpää et al., 2004; Morrison-Smith & Ruiz, 2020), team cohesion challenges were explained with the lack of *trust,* which has been noted to lessen the eagerness to communicate, take initiative, offer feedback and identify with the team. The virtual team members that participated in our study felt that the purpose of the team's existence was meaningless, particularly from the standpoint of social belonging, because, due to the lack of meta communication, no trust was established, no information was shared, no social presence was felt and no meaningful communication relationships were formed. They would have benefitted from meta discussions regarding the use of richer media when creating a safe space for them to feel togetherness and motivation towards the team's purpose because, with rich media, they could have interpreted both verbal and non-verbal communication, which has been noted to be significant from the perspective of social presence and relationship forming (Sherblom, 2020).

Although this study makes valuable contributions to understanding how experienced meaningfulness and relationality of communication can contribute to the communication success of virtual teams, it does not come without limitations. The first limitation is the fact that the data were only collected from Finnish students. As they covered two thirds of the students who participated in the experience, it remains unclear whether the American students shared the same challenges that their Finnish counterparts recognised. The decision to leave out the American students was made because they did not learn about computer-mediated communication theories during their participating course and thus, they could not have used them as tools in their sense-making process. However, in the future, for the sake of understanding better how people try to understand team communication challenges, it would be important to collect data from two cultural groups that have the same tools for their sense-making.

The second limitation of this study is that it balances the research interests of several traditional communication research paradigms. It draws from computer-mediated communication research, cross-cultural communication research and team (small group) communication research. This causes it to have several core concepts that have been introduced. For the sake of clarity, the exploration of the depth of those concepts and, at times, the use of these concepts has had to be simplified. From this perspective, this study can be seen as a starting point for future studies that allow the deepening of the findings.

Besides broadening the data sample and deepening the research results with future studies, the findings of this research could be developed further by examining virtual team communication challenges and how they are understood in a wider cross-cultural setting. This could be organised, for instance, with a three-way cultural exchange experience in which the participating students would represent even wider cultural dispersion. This would allow a more detailed exploration of how trust is built and how social presence is established with different communication approaches. In addition, new directions could be taken by focussing on the development of computer-mediated communication and cross-cultural competence of the students who participate in a virtual exchange experience. This could be done with a multiple-method study that would include descriptive data gathered with thematic in-depth interviews of students and more precise quantitative data regarding the actual measurable development of these competences.

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