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Published in:
Education in the North

DOI:
<https://doi.org/10.26203/qvfj-1t89>

Published: 01/12/2020

Document Version
Publisher's PDF, also known as Version of record

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Please cite the original version:
Hilli, C., & Åkerfeldt, A. (2020). Redesigning distance courses to support social and teaching presence in adult and upper secondary education. *Education in the North*, 27(2), 38–55. [27]. <https://doi.org/10.26203/qvfj-1t89>

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ARTICLE

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To cite this article: Hilli, C. and Åkerfeldt, A. (2020). Redesigning distance courses to support social and teaching presence in adult and upper secondary education. *Education in the North*, 27(2) pp. 38-55.



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Redesigning distance courses to support social and teaching presence in adult and upper secondary education

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Abstract

This paper investigates how teachers in adult and upper secondary education promote social and teaching presence by redesigning their distance courses. Social and teaching presence is analysed through the *Community of Inquiry* model. The implications stem from an ongoing project in Sweden and Finland (2019–2021) called *Digital learning environments - equal education through remote and distance teaching (DL)*. Three schools from the project are used as cases to answer the questions: What do teachers perceive as challenging when designing for presence in distance education? How do teachers work with these challenges to develop presence in distance education? A design-based research approach is used to address the problems teachers identified in their practices. The empirical material includes group discussions, written plans, and presentations. The teacher groups critically examined how and when communication and interactions with students took place in the digital environment. Parallel, they also read research on the topics. The study suggests the teachers promoted social and teaching presence in different ways depending on their school context. In adult education, the courses were flexible regarding time and space, *making frequent teacher-student interactions* (e.g., chat, email, feedback) important to establish teaching presence. The upper secondary teachers included *student-student interactions* (e.g., mind maps, quizzes, discussions, peer-feedback) to promote social presence in their courses.

Keywords: upper secondary school; adult education; design-based research; Community of Inquiry; teaching presence; social presence; distance education

Introduction

Distance education has been gaining ground in upper secondary schools and adult education. Flexibility for students to complete courses at an individual pace and off-campus are some of the arguments for distance education. For educators, distance education may be the only way to offer a full programme or several courses if the student population is low or if qualified teachers are hard to employ (Barbour, 2018). The critique against distance education often concerns a lack of social relationships or social presence during courses. Distance courses may include few contact hours with teachers or little social interactions with fellow course participants leaving participants feeling lonely or isolated, leading to low motivation to study and complete courses (Annetta, Folta and Klesath, 2010; Kim, Song and Luo, 2016).

This study explores how presence can be designed for in distance education by analysing teacher practices in adult and upper secondary education. The following research questions have guided the study: What do teachers perceive as challenging when designing for presence in distance education? How do teachers work with these challenges to develop presence in distance education? Teachers from three schools, one upper secondary school and two adult education providers, are included as distance education cases. The teachers are part of an ongoing Swedish-Finnish program called *Digital learning environments - equal education with distance and remote teaching*. According to Michael Moore (2015), distance education may involve onsite meetings, although students complete most of the course at a distance. In this study, we follow Moore's definition of distance education. The teachers in adult education offered students onsite meetings but planned for online interactions between teachers and students. The upper secondary school teachers only taught online, meaning they had synchronous lessons every week, and students completed tasks asynchronously on the digital platform.

The model *Community of Inquiry* (Col) is used as a framework for the analysis. The model includes three dimensions of presence; social presence, teaching presence, and *cognitive presence* (Garrison, 2006; Garrison 2007). Social presence refers to the communication between teachers and students, and the relationships established between course participants as a sense of community grows during a course. Teaching presence can be established by including social interactions like discussions, feedback, or comments. *Teaching presence* also entails the design of the course and teacher instructions to students. Cognitive presence relates to what the student cognitively learns during a course, but we will not analyse that here. The focus of this study is on social and *teaching presence* in distance courses.

We discuss the Col model in the next section, followed by a literature review of social and teaching presence. After that, we present the research and development project, design-based research, and the analysis. The article ends with a discussion on the results, the study's limitations, and our conclusions.

Theoretical framework

The Community of Inquiry (Col) framework is an empirically founded model used to explore presence in distance education to avoid a mental or psychological distance between participants and teachers. According to Kim and Gurvitch (2020), the Col-model is the most used online educational research

framework. Garrison and Akyol (2013) suggest three kinds of presence; social, teaching, and cognitive presence. Social presence means teachers and students establish relationships and that a sense of trust develops between them. For trust to develop between participants, some form of collaboration is required in the course design. Social presence may lead to a sense of community that builds on establishing good relationships within the group. Social presence can make participants feel comfortable in the digital learning environment because their personality and identity are accepted. Further, it is essential to create a climate that supports and encourages questions and contributes with ideas, not just for a social purpose (Garrison and Akyol, 2013). For example, an online course needs to include open and purposeful communication to support the community's educational objective to ensure an intellectual focus or group cohesion to focus and support the collaboration over an extended period (Garrison, 2007, p. 63). It takes a long time to develop personal relationships online, which is why Garrison suggests that courses should start with open and purposeful communication.

Teaching presence includes structuring and teaching a course as well as providing timely guidance and feedback to students. If collaboration is part of the course design, the teacher also needs to support social interactions between participants and thus structure the collaboration. Teaching presence is vital for the social and cognitive presence established during a course through different activities, feedback, and relevant content. Teaching presence also includes the teacher's engagement with the course (Feng *et al.*, 2017; Olpak, Yağci and Başarmak, 2016). Previous studies suggest that teaching presence is important for students' academic success and engagement during courses (Kim *et al.*, 2016; Song, Kim and Park, 2019).

Teaching presence and cognitive presence are interlinked since the structure of a course has implications for how well students learn the content or participate in activities. If the course material is too extensive, or there is not enough time for reflections, students may struggle to learn the course content (Garrison, 2006; Garrison, Anderson and Archer, 2000). Cognitive presence means the student learns the course content and can use the gained knowledge in, for example, collaborative assignments (cf. intellectual focus, Garrison, 2007). However, Annand (2011) raises critique against the lack of controlled studies on learning outcomes or cognitive presence in his literature review. He warns against assuming that social presence or collaborative teaching methods with little teacher guidance (for example, problem-based learning) will lead to higher-order cognition among distance students. Likewise, Garrison (2007) refers to research highlighting the importance of teaching presence for cognitive presence. In other words, there is little evidence of a causal relationship between social presence and cognitive presence.

Social, cognitive, and teaching presence are interlinked as the discussion above suggests, but we will only analyse the intersection between social and teaching presence, namely *setting the climate* (Garrison and Akyol, 2013) in this study. In the next section, we will discuss previous research on social and teaching presence relevant to this study.

Survey of the field - social and teaching presence

There are several international studies on engagement and in particular presence in higher education (Martin, Sun and Westine, 2020). The body of research in adult education and K-12 is increasing (ibid) but still there is a lack of research on presence in a Nordic context and specifically in upper secondary and adult education.

Kim, Song and Luo (2016) identified a correlation between interaction and social presence among American university students, although they found no causality between the two. A high level of interaction may lead to a sense of social presence, or a sense of social presence may lead to more interactions. The study confirms that social presence positively affects the teacher-student relationship and students' sense of completing the course and their satisfaction with the group. The authors claim there is still confusion regarding social presence because of closely related concepts (social interactions, immediacy, intimacy). They suggest that immediacy from the teacher's side (calling students by their name, starting discussions, using personal information to establish relationships) has a causal effect on social presence—the frequency of interactions and immediacy resonated with the teachers in this study.

Kim *et al.* (2016) claim that social presence is not affected by the learning environment, although different presence levels may vary. Interactions with non-human actors (chatbots, digital feedback) may support a sense of social presence. Delmas (2017) noticed that pre-recorded voice files strengthened social presence among American distance students in higher education. Listening to the teacher's voice made them human and established relationships within the group. To Christen, Kelly, Fall and Snyder (2015), visual media may support social presence if students upload and discuss pictures in asynchronous discussion forums. Furthermore, an active teacher can support social presence by encouraging questions, replying quickly to emails, and being funny and personal when communicating with students. In this study, the teachers redesigned how and when they communicated with their students in their digital learning environments.

Mykota (2015) suggests three factors participants appreciate concerning social presence; 1) being able to show emotions and share personal experiences, 2) being engaged, 3) creating a sense of community. Social presence is important for several reasons; it supports student engagement and motivation to complete a course; it may also support student learning and interactivity. A lack of social presence may leave participants feeling lonely if the interactions they take part in are mainly with a digital learning environment and can be related to low motivation towards study. Therefore, it is important to explore further and develop methods to design for social interaction and communication in distance education.

The importance of teaching presence for course structure, online discussions, and facilitating technology issues is well-established (Garrison, 2006; Garrison, 2007; Garrison, Anderson and Archer, 2000; Zhang *et al.*, 2016; Zhao and Sullivan, 2017). However, Zhang *et al.* (2016) claim that most studies are based on learner self-report surveys or interviews. Their study investigated teaching presence (e.g., clear communication and instructions, feedback, discussion facilitation) and its effect

on student online behaviour among adult students. Their study confirms the importance of teaching presence for course structure and facilitating online discussions. Furthermore, teaching presence can help adult students participate more actively in discussions, which may lead to a more profound understanding of the learning materials.

Feng, Xiu and Liu (2017) investigated the importance of the teacher's scaffolding for experienced Chinese teachers via the Col-model. The study suggests that teachers need to adjust and use different strategies to scaffold participants' learning process during the course. Teachers need to identify what kind of scaffolding is relevant at what point during a course. At the start of a course, participants may need scaffolding regarding technology, course content and the relationship with the teacher and other participants. The teacher's direct instruction can become less at the end of the course, when participants can take more responsibility for their cognitive presence (see also Zhao and Sullivan, 2017). During student collaboration, teachers need to continuously facilitate the discussions because participants generally struggle to moderate and initiate discussions. The importance of teaching presence resonates with this study as it relates to how teachers' structure, communicate and facilitate individual or collaborative coursework.

About the Research and Development programme

The Research and Development programme (R&D programme) *Digital learning environments - equal education through remote and distance teaching* (DL) (2019–2021) is led by the Swedish nonprofit organisation Ifous (Innovation, research and development in schools and pre-schools). Eight municipalities in Sweden and Finland participate in the programme. Ifous has developed a model for their programmes that involves school leaders, administrators and teachers. A steering committee leads the overall work of the programme. Groups of teachers develop the teaching practice and process leaders lead them. Twelve groups of teachers were formed from the eight municipalities, with 65 participants from fifteen different schools. Besides, two researchers (the authors of this article) were involved in the programme. The overarching aim is to efficiently use digital learning resources and create and enhance equal education opportunities in rural areas. Rural areas in this context mean smaller communities that are sparsely populated. The aim is split into sub aims and objectives aimed at researchers, teachers and school leaders. During the programme the participants work with a challenge in their practice. Twice each year, the whole group meets for two-day seminars to discuss and share ideas and experiences. Between the seminars, the twelve process leaders meet regularly in a smaller group to discuss their work and get input from the researchers.

Research design

The study used a design-based research (DBR) approach (Anderson and Shattuck, 2012; Barab and Squire, 2004). With the support of DBR, we work closely with the participants in the DL, research and development programme. The research questions are formulated based on topics that the teachers have described as challenging in their practice. DBR offers researchers the opportunity to work closely with practitioners (Anderson and Shattuck, 2012; Mor and Winters, 2007). In the present study, the

participants are active in defining problems and themes for the programme and designing their teaching practices.

Barab and Squires' (2004) broad definition of design research state that design-based research is "... a series of approaches, with the intent of producing new theories, artifacts, and practices that account for and potentially impact learning and teaching in naturalistic settings." (p. 2). Furthermore, DBR is an open, interventionist, collaborative, theory-driven, iterative and context-specific approach (Bakker, 2018). Open, because of the way questionnaires and observations are constructed and interventionist, there is always some kind of intervention when using a DBR approach. The researcher does not solely formulate the inquiry. It is also closely connected to the practice. This connection is a prerequisite in DBR as one goal is, on some level, to affect and develop the practice where the research is conducted. Another important aspect is that the research is situated in a real or natural education setting.

While planning the research process, a model was used to accommodate the workflow and communicate wherein the different process activities would occur. The model was inspired by design thinking (Brown, 2009) and Design-Based research (Herrington and Reeves, 2011; Reeves, 2006).

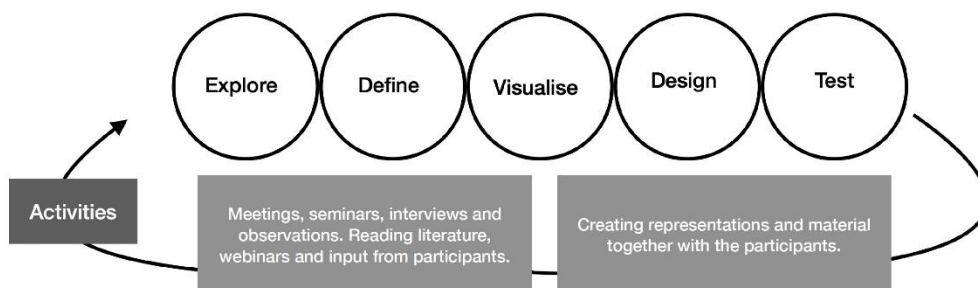


Figure 1. Model of the research process inspired by design thinking (Brown, 2009) and Design-based research (Herrington and Reeves, 2011; Reeves, 2006).

In this article, we will use this model as a framework to present our findings.

Description of the process

During the R&D program, regular meetings occurred with the twelve process leaders from each development group, the project-and-process leader from Ifous, and the researchers. Each meeting was approximately two hours. During the meetings, information was exchanged about what was happening in each group and the programme as a whole. The meetings also included lectures about previous research and talks by invited researchers. After these meetings, notes have been written and sent out to the group. Throughout the R&D project, the researchers have provided research articles on

presence. However, the articles and the presentations have not been explicit about the Col-model. For example, we have used practical models like the five-stage model for online teaching (Salmon, 2013). In this study, we have selected and analysed documentation from meetings between March 2019 and May 2020. Further, three schools have been the focus here called School A, B, and C.

Before starting the R&D program in April 2019, we sent out a survey to investigate what challenges the participants were facing concerning distance and remote education. 41 (out of 65) teachers and school-leaders answered the survey. As the survey was anonymous, we have no data on what the three schools answered. However, the answers indicated, among other things, that the teachers faced challenges regarding how to create, maintain, and enhance the communication with the students and establish and encourage student-student interaction. Therefore, the program's first theme was communication and social relations in distance education, which was communicated in the first seminar where all the participants were present in April 2019. After the seminar, the researchers involved in the programme did a literature review on the topic titled *Presence in digital learning environments* (Hilli, Åkerfeldt and Eriksson, submitted) and reported some of the findings during a process-leader meeting (meeting 2 in May 2019) and shared references to open access articles.

Table 1. The table shows meetings and seminars that were organised during the work with the theme of social relations and communication during the programme's first year.

Meetings/seminars	When	Content
Process leader - 1	March 2019	Introduction and information about the program.
Seminar 1	April 2019	Program kick-off
Process leader - 2	May 2019	Presentation of participants' plans and inspiration and findings previous research social communication and distance education. Discussion in small groups.
Process leader - 3	August 2019	Discussion about time and how process leaders had organised their work
Seminar 2	October 2019	Focus on social communication and relation.
Process leader - 4	November 2019	Presentation and discussion about their work.
Process leader - 5	February 2020	Presentation and discussion about their work.
Process leader - 6	March 2020	Presentation and discussion about their work.
Seminar 3	April 2020	Reporting the work in the development groups
Process leader - 7	May 2020	Presentation, discussion and reflections about their work and regarding seminar 3.

Empirical material

The analysed empirical material is written documentation from meetings and teachers' documentation from their work. There is also video recorded material from seminar 3. The video material contains teachers' presentations of their work.

Table 2. Analysed material in this study.

Material	Kind of material:	No.
Teachers' plan	Written documents	3 documents
Documentation	Written documentation of their work	3 documents (total 35 pages)
Video material	Presentations from school A, B and C	3 presentations (total 65 minutes)
Meetings - process leaders	Written notes from the meetings	7 documents

At the kick-off seminar in April 2019, the groups were encouraged to explore and define what they wanted to develop and work on concerning the theme of social relations and communication (see Figure 1). This was done in a so-called teachers' plan. The plan consisted of formulating an aim for the work, describing the work, how the work would be documented, and how to follow-up the work. The researchers used the plans to support the participants, empirically document the group work and follow up on what the groups were working on. The plans helped us to understand the teachers' design process during the theme. From March 2019 to May 2020, regular process leader meetings and seminars were organised (see Table 1). Documentation from these meetings is part of the analysed empirical material. The written notes from the seven process leaders' meetings and the video recordings from the teachers' presentations from seminar 3 have been analysed. Finally, written documentation from the groups' development work has been analysed (the teachers' plans). These documents have been written by the process leaders, together with participants in their group.

The empirical material was analysed through a deductive qualitative content analysis approach (Elo *et al.*, 2014; Merriam and Tisdell, 2016) guided by the workflow model (see Figure 1) and the Col-model (Garrison and Akyol, 2013). The authors read and watched the material several times. In the analysis process, we identified the teachers' challenges at different stages (in the plans, in the meetings, and the presentations) to identify the steps they took and how they worked to design their courses for increased social and teaching presence.

Selection and presentations of the schools

The three schools represent three cases of distance education in Sweden. The schools were selected because they had specific challenges in designing for presence in distance education. The two adult-education had continuous admission to their courses, and the upper secondary school could not meet

their students on-campus as the other schools that participated in the programme could. These two aspects were considered challenging for the schools and important to investigate as we wanted to focus on challenges and how the teachers worked to solve these challenges. In all three cases, the teachers wanted to support study strategies among their students and social presence during the courses to avoid students dropping out.

Case A and B are adult education providers located in urban areas. Students choose to take courses as fully or partly campus-based or online on the digital platform, *itslearning*. The students have diverse backgrounds. Some only need a few courses to complete a previous study programme. Some students have dropped out of upper secondary school for different reasons. Some have immigrant backgrounds and want to complete an upper secondary school program to be eligible for Swedish citizenship or higher education in Sweden.

The school in case C is an upper secondary school that only offers distance education. Their students (aged 16–19) come from all over the country. As an upper secondary school, they follow the Swedish national curriculum; one learning goal is to support social relations and a sense of belonging in the school and society. Their courses usually span over one term, the Fall or Spring, giving them more time together as a teaching group as compared to cases A and B. Case C uses mainly Google Classroom to teach online. Most courses have weekly synchronous lessons in Google Meet when teachers and students meet. Students complete assignments asynchronously in Google Classroom.

Ethical considerations

When the R&D programme started (2019), all participants were informed both verbally and in writing about the research project's aim and process. We have included and followed the ethical guidelines provided by the Swedish research council (2017). Participants were informed that they could choose not to be part of the research project, and it would not affect their participation in the R&D programme. The participants signed an optional consent. Further, when activities that are conducted in the group will later be used as empirical material for research, we have explicitly informed participants and asked if they want to be excluded from the material. Using a DBR approach within an R&D project like this is an ethical challenge as it is crucial to consider teachers' integrity. Therefore, we have analysed the empirical material on a group level. We have not been interested in the individual teachers' course design. Each school has between 20–50 teachers and the school's name has not been mentioned in the article or the information provided on the R&D website. The participants take part in the programme to develop their courses, which they see as a positive way forward to develop their teaching. One aim of the project is to share and discuss the school's work within the teacher and research community. This study is part of that work.

Findings

Case A and B made changes to their course designs to support *teaching presence* and *social presence* in different ways. They prepared video clips with information about the courses and also videos about study strategies. The teachers included real-time support (weekly chats, video conferences) and asynchronous communication (comments, feedback, emails). They redesigned their feedback practices

to make it formative, aimed at establishing relationships with the students by keeping the dialogue going by encouraging the students to reply. Case C redesigned their courses to include recurring student collaboration, and the teachers considered the importance of social presence for student engagement and learning. Below, the cases (a, b and c) will be presented, but first, we address the research question; what teachers perceive as challenging when designing for presence in distance education.

Challenges

Case A and B have similar challenges. The teachers identified a risk for dropouts, something they related to a lack of communication between teachers and students. By focusing on communication and relationships, they critically examined their teaching practices. In both cases, the teachers wanted to develop their *teaching presence* by redesigning their distance courses and establish *social relationships* with their distance students. The adult educators had to plan their courses according to recurrent enrolment; generally, students could start their courses three times during the term, in the beginning, in the middle, or at the end of the term. It meant students completed the courses at their own pace and could start the courses at different times during the semester. In adult education, the organisation prepares individualised study plans for their students. It was challenging if the teachers could not establish relationships with the students because they did not know what students knew beforehand or their inclination to study at a distance. In case C, the teachers wanted to develop *social presence* to support students' social relations and social competence by including collaboration in their courses and avoid dropouts.

Case A

School A had the largest number of teachers participating in the R&D program in their group compared to school B and C. A total of twelve teachers. The group decided to split into two groups to work more effectively and closer to their subjects. In their plan, they started to **explore** their challenges in their teaching practice by brainstorming. From that session, they came up with questions about how they could enhance *student-student interactions* in their courses and how *teacher-student interactions* could be developed to support the students further. By **defining** their challenges, they formulated two areas to be developed to obtain higher achievements from the students. One group started to develop and explore the student-student interaction, and the other group started to develop the teacher-student interaction.

During our meetings, the process-leaders addressed difficulties in finding the time to see each other and plan, design, and implement their work in the courses. Another challenge was to engage and start the student-student interaction. To address this challenge, they changed the aim of the students' communication. Instead of communicating about the course content, the teachers decided to encourage meta-reflections about students' studies and how they learn. The group that worked with teacher-student interaction started to contact the students systematically. According to the process leader, the interaction **design** meant the frequency of connections increased between students and teachers.

In case A, the teacher-student group **redesigned** their courses in three ways: 1) courses begin with on-campus introductions to support students' digital competence and make sure they can access the platform, *itslearning*. 2) The first assignment of the course introduces the students to the digital platform and provides information about the students' background and expectations and their study plans. Students can complete this first assignment orally or in writing. 3) The teacher then provides formative feedback to encourage the students to reply. The students can also turn in their assignments halfway to receive feedback earlier than before and initiate communication with the teacher this way.

After **testing** enhancing communication between the students, the teachers concluded that *student-student interactions* are complicated because of the school's context and the recurring flexible enrolment. Students take courses at their own pace, which means they are rarely studying the same content at the same time as other participants. Nor do the students establish relationships with other participants as they never meet online or onsite or benefit from discussing the same topics simultaneously. The *presence of the teacher* was identified as necessary throughout the course to avoid dropouts. The redesign of the assignments to support continuous communication between *teacher and student* was deemed as successful. The teacher needs to be actively involved in replying, commenting, and providing timely feedback to maintain the social and teaching presence. The teacher groups also added visual material (videos) to introduce courses and the teachers in the digital learning environment.

Case B

The teacher group in school B consisted of eight teachers. School B **defined** that they wanted to work with *student-teacher interaction* to reduce the dropouts. The group wanted to focus on establishing early connections with the students at the beginning of the course.

In case B, the teachers initiated a survey of their communication with their students as part of their documented plan. They **defined** two issues with early communication in courses: 1) they did not meet students at the beginning of courses; instead, they had onsite meetings once the courses had started. 2) Not all teachers communicated actively with students, and teachers that communicated more with students had lower dropout rates. The teachers addressed the issues to reduce dropouts in several ways. They started to systematically follow-up if students did not respond to emails. The teachers quickly responded to students' questions and worked proactively by emailing or calling students instead of waiting for them to contact the teacher. The teachers also made videos that introduced the students to the subjects and study-strategies to support the students. As a group, they decided to **redesign** their courses to start with on-campus meetings to establish relationships with students and support students' digital competence by introducing them to the digital platform and the course outline. One of the teachers **redesigned** the course to include more online interactions between teachers and students every week. The teacher introduced so-called *check-in assignments* when students explain what they have been working on during the week and how they keep up with their study plan—this way, the responsibility for staying in touch was placed on the students, not the teacher. The students received reminders to check-in on the digital platform. It eased the workload of the teacher and provided an overview of the progress of the students. The teacher approached students who did not turn in the *check-in assignments* to determine potential issues. The *check-in assignments* were reflective

assignments that students needed to complete to continue with the course. The assignments gave the teacher insights into what students were struggling with regarding the content. These meta-reflective assignments were introduced to support students' study strategies and identify the content they need to work on more.

After testing the redesigns in the spring of 2020, the group acknowledged that enhancing *student-teacher communication* was time-consuming, although it gave results. The process leader reported reduced dropout rates and that more students completed the courses. Another reason for the reduced dropout rates was because students could meet on-campus during the course and had a mandatory information meeting. The process leader identified a challenge to estimate the time teachers spent on communicating with students as it varies a lot between the courses. The process leader concluded that the organisation needs to be flexible and responsive to enhance the quality of distance education.

Case C

Nine teachers participated in the group in School C. They **defined** a goal to work to increase *student-student interactions*. The group was inspired by Gilly Salmon's (2013) five-stage-model.¹ The teachers identified issues with social presence, namely a lack of student collaboration in their documented plan. Every teacher had the opportunity to **design** and decide how they wanted to develop the student-student interaction as the teachers had different subjects and therefore had to make decisions about the design based on their subject and the course content. They **redesigned** their courses to include synchronous and asynchronous *student-student interactions* throughout the courses. Before, the courses were mostly designed for individual assignments.

Through collaboration, the students would get to know each other, and they would get used to studying together and sharing the workload during the course.

Depending on the subject, the teachers chose different ways to include collaboration. In natural science courses, the students work in a study group throughout the course, and they complete different assignments together, for example, by watching videos of laboratory work and analysing them together. In language learning courses, students collaborate by uploading pictures they identify with and studying together in small groups every week. In human science courses, the student groups were given case studies or practical problems to implement previous knowledge with new theoretical knowledge. Other methods include joint mind maps, writing summaries together, providing feedback on each other's texts, or rehearsing the content together in quizzes. During weekly synchronous videoconferences, the teachers also emphasized collaboration as a way for students to get to know each other. During these synchronous sessions, the teachers could provide support for each group depending on the assignments and content of the course.

In their documentation, after **testing** the new course designs, they reflected upon their work and made conclusions based on the five-stage-model (Salmon, 2013) and described the activities. Below, some conclusions are presented. 1) It is important to allow enough time for the students to explore and get

¹ See also Salmon's website: <https://www.gillysalmon.com/five-stage-model.html>

used to the digital resources used in the courses and allow the students to get to know each other. 2) The importance of designing collaborative tasks targeted towards getting to know each other rather than focusing on the course content. 3) One open question was stated about how they should work with students that did not want to collaborate with other students. 4) Before taking part in the programme they had rushed to stage three in the model and focused on students learning the course content. Now they realised that they needed to slow down the pace. 5) They introduce the course content at a later stage than before and use digital resources that make it possible to share the discussion with the students (for example, Jamboard). 6) The teachers had worked to design peer-feedback. This was done foremost for the students in the last year in upper-secondary school as part of the fifth stage of the model (Salmon, 2013).

Discussion

In this section we will discuss the findings in the intersection between social and teaching presence, namely *setting the climate* (Garrison and Akyol, 2013). The adult educators focused on setting the climate by initiating faster asynchronous and synchronous communication between teacher and student to establish relationships. They redesigned their courses to include feedback and personal communication by chatting or commenting on assignments. They also included visual material, for example, assignments presented through videos and different ways to communicate synchronously (chat, videoconference). In line with Garrison and Akyol (2013), the teachers established social relations in the course design by using *open communication* to increase *social* and *teaching presence* and prevent dropouts. The upper secondary school teachers adapted methods of collaboration (mind maps, quizzes, synchronous and asynchronous discussions). Further, the assignments were redesigned to increase student collaboration, for example, by maintaining the same groups during the course to intellectually focus the group work early on and allow for relationships building over a more extended period (cf. Garrison, 2007).

In all three cases, the teachers increased synchronous and asynchronous communication to provide faster replies to students (cf. Christen *et al.*, 2015). By redesigning whole courses, the teachers could increase communication between the teacher-student or between students. This redesign process was done in relation to the *schools' digital learning environments*, *the students*, and *the content* to be taught. However, even if the teacher wanted to create and increase communication between students, it was not always possible. Obstacles forced them to reconsider when it was possible to integrate *student-student interaction* as the adult students' study pace and individual study plan made it difficult. In the upper secondary school, not all students wanted to collaborate.

Using the Col-model with a focus on social and teaching presence as a framework to analyse the design process showed the importance of teachers introducing the students to the digital learning environments early on either online or onsite, making sure they felt comfortable in the digital spaces (cf. Feng *et al.*, 2017). The adult educators established relationships with the students through meta-reflective assignments that supported the students' study strategies and synchronous (personal or subject-specific) communication (feedback, comments) (cf. Christen *et al.*, 2015). They also included

more visual and audio material (videos, video conferences, oral assignments) in the digital learning environments to establish relationships with students and structure the courses (cf. Delmas, 2017). However, changing or adding different communication modes does not need per se lead to increased teaching and social presence. Just because the students can see and hear the teachers will not equal, they feel a higher degree of presence. Based on our findings, we can see that the teachers are working systematically towards setting a climate in their courses which are seen as an important factor when it comes to students' sense of completing the course and their satisfaction with the group (Garrison and Akyol, 2013; Kim, Song and Luo, 2016).

However, several factors need to be addressed and further investigated to illuminate more in-depth insights into social and teaching presence. Factors that would be interesting to explore further is time, students' expectations, how teachers perceive their role as distance-teachers and organisational perspectives. Increased interactions between teachers and students are time-consuming as the communication needs to be related to the overall course design, the digital learning environments used, and it has to be timely regarding students' need for support. This study does not support previous findings that teacher-student interactions can lessen while the course proceeds (cf. Feng *et al.*, 2017; Zhao and Sullivan, 2017). An active teaching presence was deemed necessary all through the courses. The teacher's role and professional perceptions are other factors to consider. If teachers see themselves as subject experts, they might focus on distributing information in digital learning environments. If so, the organisation of distance courses and the teacher role must be negotiated and reconsidered to address how to support teaching and social presence. Teaching presence "... is a significant determinant of student satisfaction, perceived learning, and sense of community." (Garrison, 2007, p. 67).

From an organisational perspective *social presence* between students was challenging for the adult educators because of the recurring enrolment practice, the student population, and organisation that expected individualised study plans. This may be specific for adult education when organised in this highly flexible form. Further research into student collaboration in flexible courses would be an essential area to study. Even though the teachers redesigned their courses and systematically enhanced communication in different ways, we have not yet investigated if and how the students experience an increase in teaching and social presence. A next step could be to use the Col-survey (<https://coi.athabasca.ca/coi-model/coi-survey/>) to ask the students about their educational experiences of distance education. Findings in this study need to be seen in light of the ongoing R&D work. The teachers' perceived challenges and redesigns of courses need to be investigated further.

Limitations of the study

The Col-model is the most used framework for online educational research (Kim and Gurvitch, 2020) and most of the studies are foremost quantitative. This study has used a qualitative approach and used only two aspects of the model (teaching and social presence), which can be seen as limitations. The three aspects of the Col-model should be used and seen as interlinked (Garrison and Akyol, 2013). We have excluded cognitive presence, which is an important aspect to investigate in distance courses (Annand, 2011). However, by using a qualitative approach and focusing on two aspects of the model,

the analysis can be more detailed and in-depth (Merriam and Tisdell, 2016). Furthermore, this study is part of an ongoing research project and continuous work exploring presence in distance education.

Conclusions

The upper secondary school was teaching only at a distance. They were bound by the national curriculum which supported them to focus on *social presence* between students who took part in study programs. The collaboration was introduced as an important part of courses and the teachers supported it synchronously and asynchronously by including relevant topics and digital tools. The adult educators had recurring enrolment to consider. The courses were flexible with individual plans for each student, and the student population was heterogeneous. Each student had different expectations of the courses. *Teaching presence* was important to create and maintain relationships, structure, and engagement during the courses. The adult educators made use of the possibility to meet on-campus to support their students and structure their courses. They used the digital platform for fast synchronous and asynchronous communication and structured the courses to allow students to study fully online or partly on-campus.

The critique of the Col-model suggests that students do not achieve meaningful learning (Rourke and Kanuka, 2009). The model is foremost a process framework that informs the design of a course, and as we see it, it does not make claims to enhance learning outcomes (Akyol *et al.*, 2009; Annand, 2011). Furthermore, critical voices have been raised that the model needs additional components (Castellanos-Reyes, 2020). Suggestions have been made of learner presence, emotional presence and autonomy presence (Castellanos-Reyes, 2020). Based on our analysis, we suggest an additional component shared presence that considers the school's context and how to design for a sense of meaningful connections and closeness. It is time-consuming to design for a sense of shared presence in distance education. It is also difficult to estimate how long it will take because it depends on the subject and the content that should be covered, and the students' digital competence. This calls for flexibility and responsiveness within the organisation to enhance distance education quality and establish a shared presence.

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