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FACTORS CONTRIBUTING TO A SENSE OF COMMUNITY IN ONLINE EDUCATION

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Abstract

It has been well-documented that a sense of community (SoC), referring to cognitive, social and emotional connections established between physically separated students, plays an important role for student achievement in online education. Establishing and maintaining a SoC built between students and teachers is a very common challenge in online education, additionally recognised when most educational institutions had to organise online education abruptly and in a short period of time due to the recent Covid-19 pandemic. Therefore, the need for guidelines has been indicated in order to facilitate that process. The existing models or conceptual frameworks provide certain guidelines and can be analysed to make recommendations for the future of online education. Therefore, this qualitative study takes a didactic approach to online courses and aims to detect and assess factors important for creating a SoC in online education, while applying content analysis of 23 papers containing 10 SoC frameworks. All of the frameworks that addressed this issue over the past decade have dealt with three sets of factors relating to teachers, students and course contents, among which the factors related to teachers were predominant. Finally, there are recommendations for teachers on how to build a SoC in online education, while taking the effort to set up lessons that promote teacher presence and timely feedback, course content adjustments, student engagement and cooperation among students.

Keywords: conceptual framework, future of online education, classroom interaction, sense of belonging, teacher

Introduction

During the lockdown in 2020, most educational institutions had to quickly adapt their courses to be taught exclusively online. Such abrupt change in course design has been recognised as the emergency remote teaching of questionable quality and, therefore, must be distinguished from the regular online education (Hodges et. al., 2020; Žižanović et al., 2021; Varga, 2022). Despite the fact that online education represents a well-researched and systematically planned didactic form of instruction (Akyol & Garrison, 2014), the aspect of fulfilling students' social and emotional needs still remains to be the most challenging dimension of such teaching.

According to Lin & Gao (2020), there are noticeable differences in satisfying those needs via synchronous (students and teachers are engaging in learning at the same time, e.g. audio and/or video teleconferencing, virtual classrooms, and instant messaging) and asynchronous distance learning (education that does not happen in real time, and the teacher applies email and online discussion boards to conduct interaction). This is due to the fact that students engaged in synchronous online courses find a stable means of communication; tend to stay on task; feel a greater sense of participation; tend to experience better task/course completion rates; develop a stronger feeling of connection to their peers and teacher; feel less distance with their peers and the teacher; create strong relationships and participation in group projects within a larger class. In other words, the use of real-time lectures and discussions in synchronous learning increases student engagement and learning, which allows students and teachers to interact and respond in real time (Abdelmalak, 2017, as cited in Lin & Gao, 2020).

Martin & Bolliger (2018) report on a framework proposed by Chickering & Gamson (1987) that was intended to ensure students' engagement, and it calls for the instruction to increase the contact between students and faculty; provide opportunities for students to work in cooperation; encourage students to use active learning strategies; provide timely feedback on students' academic progression, require students to spend quality time on academic tasks, establish high standards for acceptable academic work, and address different learner needs in the learning process. For those seven principles were proposed for the face-to-face classroom, the intention of this paper is to further explore the frameworks that focus on building a sense of community (abb. SoC), specifically in online education.

Sense of Community in Online Classrooms

The term *community* refers to feelings of membership and belonging within a group (Yuan & Kim, 2014; Berry, 2017). In *a learning community* students work together with peers and teacher(s), to learn collaboratively and support each other in pursuing academic, social, and emotional goals. For all those benefits, it is important to establish and maintain a learning community even when neither students nor teachers share the same physical space but meet in a virtual classroom. A learning community cannot operate successfully if its members are unware of its existence. Therefore, we speak of *a sense of community*, which is associated with increased student engagement, performance, and retention (Ke & Hoadley, 2009; Stubb, Pyhältö, & Lonka, 2011; as cited in Berry, 2017), as well as satisfaction (Berry, 2019).

Even before virtual classrooms took off, McMillan & Chavis (1986) emphasised the importance of SoC within a group and defined it as a feeling of belonging, inclusion and self-worth (McMillan & Chavis, 1986). This means that a SoC can be described in terms of membership, influence, integration and emotional connection. More precisely, students who feel a SoC have a strong sense of belonging to a group that they can

identify with, which creates a sense of security. Only in a secure environment students are not afraid to make mistakes, and true learning takes place. There is also mutual influence of group members, which helps students stay on task and maintain (or even increase) their level of engagement. Feeling a SoC is a result of inclusiveness that happens when the group enables each and every student to fulfil their (educational) needs. Being together with the group members and the perceived similarity to others create homogeneity that is effective for group cohesion and interaction. Consequently, classmates share emotional connection as a result of mutual interaction and participation in the community.

When it comes to developing online SoC, Trespalacios & Uribe-Florez (2020) report that it has been well documented that virtual classrooms have the potential to develop SoC providing the following conditions: there must be recognition of membership, willingness to rely on other members of the community, interaction among students that is either task-driven or socio-emotional in origin, and classmates should have similar expectations and share common goals (learning). Moreover, it takes time to build a community in distance learning classes while enabling students to go through several stages – from making friends for a comfortable communication and community conferment (acceptance) to camaraderie that is achieved after a long-term relationship.

However, due to geographical and transactional separation of students in virtual environments, many students struggle with developing personal connections and are in danger of developing a sense of isolation and disconnection instead (Tayebinih & Puteh, 2012), which makes it a substantial task for scholars to propose frameworks that would subsequently yield recommendations for improved online classroom practices. The existing conceptual frameworks could provide certain guidelines that need to be analysed and assessed from the point of view of the didactics, which looks into instructional processes of teaching and learning that take place in traditional or virtual classrooms.

Research Aim and Method

The purpose of this study was to explore the dynamics of an online educational experience through the lenses of the didactic approach to building an SoC in an online classroom. Therefore, the aim of the paper is two-fold:

a) to analyse recent literature in order to detect factors important for creating an SoC;

b) to provide recommendations for the future of online education

In order to collect those qualitative data, content analysis was applied as a prevailing method (Krippendorff & Bock, 2008; Stemler, 2015; Dubovicki et al., 2018). The eligibility criteria were restricted to the peer reviewed journal papers published in English language journals between the years 2012 and 2022. The search strategy en-

compassed systematically analysing peer-reviewed published papers with an initial database search of Education Resources Information Center (ERIC), Google Scholar and Scopus. This search was undertaken in March 2022 for papers that explored *a sense of community/feeling of community/perception of community and online/distance education/learning* with the aim of maximising relevant findings for papers published within the last decade.

The emergent coding by a couple of independent coders was the crucial step of the analysis: frameworks of an SoC in online education were identified and coding categories were generated for each of the themes encountered. Coders analysed the themes, revised them, and then recoded the data until a consensus was reached. Subsequently, those findings could have been used to propose a didactic framework of factors of an SoC in online education.

Research Results and Discussion

The search for the relevant papers resulted in twenty-three eligible papers (out of forty-one initially selected) that were subjected to content analysis, and those papers yielded a total of 10 frameworks related to SoC. Each framework was deconstructed to its dimensions, which then yielded factors contributing to building an SoC in online education1. The long list of the detected factors can be reduced when applying a didactic approach to identifying the essential elements of instruction.

Consequently, the detected factors can be grouped into three categories:

A) factors related to teacher

B) factors related to students

C) factors related to course contents.

Each and every category of the factors must be taken into account when attempting to create online classes that contribute to a SoC among students. Table 1 shows that the Community of Inquiry (CoI) Theoretical Framework by Garrison, Anderson, & Archer (2001) is the most frequently used framework appearing in ten out of twenty-three papers. The oldest framework The Sense of Community (SoC) Framework by McMillan & Chavis (1986) cited in a paper from 2012 was then 26 years old but still influential, and there are some new frameworks recently introduced by the authors themselves and have not yet become widely recognised (e.g. The sense of community related themes by van der Meer et al., 2021).

[1] More detailed analysis is available on the poster presented at the Conference: https://drive.google.com/file/d/1fxyWIUiYF62A5yHgXS-CpfbKVKZ6Mc5s/view?usp=share_link

Table 1 Analysis of frameworks related to an SoC in online education

	Frameworks appearing in papers published from 2012-2022	**f**	**Sources**
1	The Community of Inquiry (**CoI**) theoretical framework by Garrison, Anderson & Archer (2000)	**N=10**	Akyol & Garrison (2014), Yuan & Kim (2014), Pilcher (2016), Berry (2017), Berry (2019), Cleveland-Innes et al. (2019), Shea (2019), Koff (2020), Lin & Gao (2020), Trespalacios & Uribe-Florez (2020)
2	The Classroom Community Index (**CCI)** Scale by Rovai (2002)	**N=5**	Pilcher (2016), Shea (2019), Trespalacios & Uribe-Florez, (2020), Lin et al. (2020), Yildiz (2020)
3	The Online Graduate Mentoring Scale (**OGMS1**) by Yob & Crawford (2012)	**N=2**	Yob & Crawford (2012), Crawford et al. (2014)
4	The Sense of Community **(SoC)** Framework by McMillan & Chavis (1986)	**N=1**	Tayebinih & Puteh (2012)
5	The E-Learner Satisfaction (ELS) measurement by Wang (2003)	**N=1**	Lin et al. (2020)
6	Interaction in Effective Online Courses by Moore (1993)	**N=1**	Martin & Bolliger (2018)
7	The Interactivity/Community Process Model for the Online Education Environment by Lear, Ansorge & Steckelberg (2010)	**N=1**	Martin & Bolliger (2018)
8	The Sense of Virtual Community Framework by Koh & Kim (2003)	**N=1**	Lin & Gao (2020)
9	The Sense of Community Themes by Stephenson, 2019	**N=1**	Stephenson (2019)
10	The Sense of Community Related Themes by van der Meer et al. (2021)	**N=1**	van der Meer et al. (2021)

The results obtained from the content analysis reveal the hierarchical structure of each model/framework in the following manner illustrated by the most popular one (CoI):

- *dimensions* on the top level (social presence/cognitive presence/teaching presence),
- *elements* subordinated to each dimension
- (social presence: open communication, group cohesion, personal/affective expression; cognitive presence*:* triggering event, exploration, integration, resolution; teaching presence: design & organization, facilitating discourse, direct instruction),
- ending with *indicators* emerged from each element, and which can be change to form questionnaire items for assessment of SoC.

The analysis of each of those segments enabled us to detect three most frequently used areas related to SoC: a) factors related to teacher, b) factors related to students, and c) factors related to course contents (Table 2). Hence, the analysed papers were grouped in line with the following dimensions concerning the role of a teacher, student and instructional strategies that can provide a baseline for a conceptual framework related to an SoC in online education.

Table 2 Summary of frequencies of factors related to areas important for SoC

Refers to	***Factors (frequency/examples)***	***Sources***
TEACHER	N=59	
T-Examples	warm and welcoming tone, content area knowledge, research knowledge, recognition in the field, promptness, communication aspects, facilitating discussions, research initiatives, constructive and personalized feedback, promoting continuous improvement, imposing quality standards, openness, emotional maturity, regular posts, purposeful using of technology, skilful use of the learning management systems, etc.	Randolph & Crawford (2013), Crawford et al. (2014), Yuan & Kim (2014), Pilcher (2016), Berry (2017), Haar (2018), Martin and Bolliger (2018), Berry (2019), Shea (2019),), Stephenson (2019), de Koff (2020), Lin & Gao (2020), Yildiz (2020), van der Meer et al. (2021)
STUDENT(S)	N=51	
S-Examples	satisfaction, moderating discussion, free choice in the selection of readings, using multimedia, collaborative working, communication tools, peer-reviewing, group cohesion, time management, effort regulation, critical thinking, metacognitive strategies, accessibility, flexibility, etc.	Tayebinik & Puteh (2012), Akyol & Garrison (2014), Broadbent & Poon (2015), Haar (2018), Martin & Bolliger (2018), Cleveland-Innes et al. (2019), Lin et al. (2020), van der Meer et al. (2021)
COURSE CONTENT	N=29	
CC-Examples	easy to use learning management systems, user friendly, multimodal communication, proactive methods, sharing emotions and experiences, collaborative activities, increasing discussion, increasing peer interaction, etc.	Akyol & Garrison (2014), Pilcher (2016), Berry (2019), Cleveland-Innes et al. (2019), Shea (2019), Stephenson (2019), Lin et al. (2020), Trespalacios & Uribe-Florez (2020), van der Meer et al. (2021)

Those findings are in line with the previous study by Pilcher (2016:6) who claims that "the two factors most commonly cited among the literature as being influential in building sense of community were the instructor and course design." An older study by Moore (1993) adds to that list the importance of the role that students themselves assume, and the same can be recognised in the concluding points by Shea et al. (2006), who list the following factors producing a high SoC: high levels of interaction between

students and teacher, active roles of students, prompt feedback and student cooperation in learning together. Overall, the analysis has confirmed that the researchers focus predominantly on teachers and their actions to create SoC. This is understandable considering the fact that the teacher is the one who is held accountable for the course outcomes (Varga et al., 2018), even in online education.

Nevertheless, in the attempt to propose a framework that would be in line with the didactics' definition of the teaching/learning process and its essential components, neither teachers, nor students, nor course contents can be omitted (Prange, 1986; Schoenfeld, 2012; Varga, 2015), as illustrated in Figure 1.

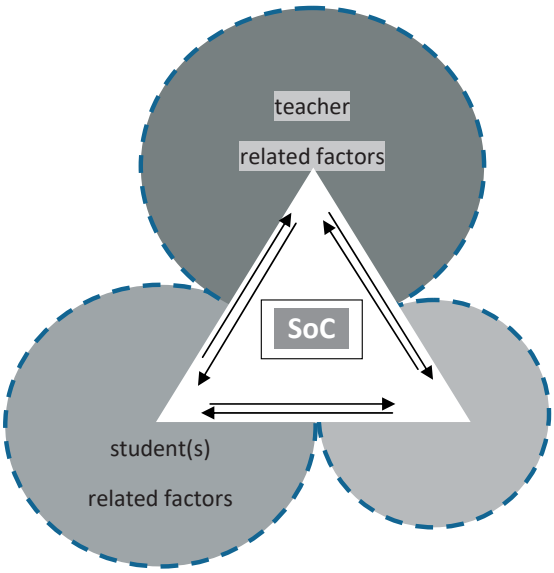

Figure 1 Didactic framework of factors contributing to a sense of community (SoC) in online education

Teacher-related factors (N=59) are the most numerous among the detected factors and mostly refer to *clear communication and explanation*, *timely and meaningful feedback*, and *well-planned classroom activities*. More precisely, Pilcher (2016) confirms that the key aspects of creating a community in online education are: the emphasised role of communication, timely and meaningful feedback and teachers' active presence. There are also factors related to activities that help teachers attract students' attention; communication and feedback that focuses and directs discussions, teachers' actions that encourage open expression of views and provide opportunities for students to communicate and express their opinion (Haar, 2018). When a teacher uses effective instruction design and teaching methods, it facilitates the student's ability to conceive and construct knowledge, thus enhancing an SoC and supports

its formation (Shea, 2006). Also, regularly and repeatedly emphasised factors cover well-structured course design and facilitation done by the teacher. All of these factors increase chances of interaction, which is crucial in the attempt to promote the SoC in online education. To increase interaction, Berry (2017) proposes the following factors that are in teachers' hands: creating a warm and welcoming tone; using technology to provide supportive feedback (checking in and creating a personalised learning experience); and using technology to engage all students. Furthermore, the following teaching strategies for building community online are found to be equally important (Berry, 2019): reaching out to students early and often, limiting lecture time – increasing discussion, using multiple technical features of the virtual classroom to encourage discussion, using class time to share personal and professional updates. Overall, teachers can manage numerous factors when taking the active role to develop, improve, purify and accomplish inclusiveness in the education system to provide a learning ecosystem that works for all (Bozkurt & Sharma, 2020).

Student-related factors (N=51) are the second most frequently mentioned factors contributing to SoC and those require a supporting teaching style that would meet students' *individual needs* and *expectations* in order to create an inclusive classroom that creates SoC in all students, regardless of their differences. For instance, Rovai (2002) points out that students have various educational needs that must be addressed at every educational stage so that students would feel accepted and develop an SoC. The support can be provided in terms of ensuring richness of course material to be used in synchronous and asynchronous manner. If the teaching style does not suit students' preferences, the learning process may be hindered (Rovai, 2002). Akyol and Garrison (2014) found the significant correlation between students' social presence, perceived learning and satisfaction. Students have certain expectations when participating in online classes. Provided that they feel valued in the classroom and their expectations are met, students tend to establish a bond with peers and teachers. The ability of the student to connect with the teacher in the learning process can affect the SoC (Yildiz, 2020). Student-teacher interaction and student-student interaction significantly affect students' sense of membership and contribute to SoC (Luo et al., 2017).

Content-related factors (N=29) make the last set of factors, but not least. They underline the fact that both teachers and students interact with course contents, and the way they interact with them can significantly contribute to an SoC. The degree of active interaction with course content is evident in the *instructional design* that makes the best of the virtual learning environment and the available ICT solutions, with a wide range of *teaching methods* appropriate for the selected contents. Classes must be organised with the use of applications that allow communication, trust and cooperation among students in order to effectively meet their needs in the learning process. In such way, students' SoC can be increased (Shea, 2006). More precisely, when attention is paid to online learning environment design, satisfaction and success are expected to increase. Also, when designing online learning environments, it is necessary to ensure that the classrooms are not crowded because research showed that student-teach-

er interaction increases and becomes easier in smaller classes. In addition, in small classes, students have the opportunity to get to know each other. This situation contributes to the formation of an SoC and the increase of participation (Rovai, 2002). Another set of content related factors refers to the manner in which course content is being presented and used to engage students to make learning meaningful. More precisely, teaching methods in online environments must provide ample opportunities to communicate and co-create knowledge (Markova et al. 2017). The use of interactive teaching methods must enable students to interact with the course content, while interacting with teacher and peers, as emphasised in the study by Randolph & Crawford (2013). They are important because interactive teaching methods provide support for the formation of an SoC in online learning environments (Shea, 2006).

Conclusion

We approached the issue of building an SoC in online education from the point of view of the didactics and aimed to analyse recent literature in order to detect factors important for creating an SoC, since gaining the clear vision of those factors would make way for recommendations for online education in the future.

After analysing twenty-three papers published over the last decade with ten SoC frameworks, it became evident that creating a SoC represents a greater challenge in online education than in the face-to-face classroom practices. Regardless, all of the frameworks have dealt with the factors that are also important in traditional classroom. Those factors relate to teachers, students and course content, among which the factors related to teachers were predominant. Such findings point to the significance of a teacher's role in the process of developing SoC in online courses.

The analysed factors were categorised in three groups and used to design a didactic framework of factors contributing to SoC. Similar to the CoI framework, our framework is not a static model but attempts to explain the educational experience from a process perspective by emphasising the interactions that take place among students, teachers and course content in online classes. Although it represents a theoretical framework that must yet be empirically tested, it is in-line with the didactic view on the instruction and contributes to a greater understanding of the dynamics of an online educational experience.

Finally, the framework has yielded certain recommendations for the practitioners on how to promote SoC in online education. For example, a clear statement of conduct and communication rules should be agreed upon when establishing online learning communities. To serve students' learning needs, collaborative classroom activities should be set up. The focus should be on meeting students' expectations and teachers' expectations of students should be clearly stated. In online classes, materials should be available throughout the course and feedback should be given regularly. It is important for both students and teachers to be able to express themselves in different ways (audio, video, etc.). The future of online education will require from teachers

to use the emerging technologies to engage all students in order to create an SoC. By encouraging collaboration, requiring trust and fulfilling students' academic needs, successful teachers would employ peer-centered pedagogical practices that could aid online students develop an SoC. Overall, initial course settings and a communicative and collaborative environment are crucial for students' motivation, engagement and feeling of belonging to a community. Further research is needed in the area of individual differences among students and teachers based on their demographic features such as age, gender, previous experience with online classes, etc. In addition, specifics in the didactics of a certain course (e.g. didactics of mathematics vs. didactics of foreign language) should be further explored.

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