An Exploratory Research to Students' Sense of Belonging in Distance Education in Higher

Education in the Netherlands during the COVID-19 pandemic

Master's thesis

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[1] Dutch words along the lines of succinctly

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[2] Values of Tele'Train: Gretig, Avontuurlijk, Vakkundig en Eerlijk

ABSTRACT

A high sense of belonging can have a great positive impact on students' lives. For instance, previous research mentioned that belongingness can be beneficial for the overall well-being and prevents student drop-outs. Given the important role of belongingness, and the negative consequences that are related to the feeling of not belonging and disconnectedness, this research investigated students' belongingness in higher education in distance education in the Netherlands during COVID-19. In total 123 students participated in the online questionnaire, and 7 students participated in the online follow-up interviews. Based on previous research two patterns of educational characteristics (e.g. high or low frequency of educational activities per week, and the group size (small or big) of the educational activities) were analysed. Differences between HBO and WO, bachelor or master student, and full-time or part-time students were taken into account. Amongst other conclusions, it was found that students still felt like they belonged to their peers, educational staff, and educational institute(s) during COVID-19.

Keywords: Students' sense of Belonging, Belongingness, Higher Education, Distance Education, COVID-19

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INTRODUCTION

During the COVID-19 pandemic, almost all academic teaching took place in online distance education, due to the temporary closure of educational institutions to control the spread of the virus (UNESCO, 2020). This sudden shift caused many concerns among the educational staff about the social well-being of students. Students themselves also worried about their own socialization when only having online interaction with peers and educational staff in distance education (Ten Berge et al., 2020). Earlier research, pre-COVID-19, mentions that when redesigning face-to-face education into distance education it is important to take the social aspects of education, like socialization, into account (Holmberg, 2005; Simonson et al., 2019; Ten Berge et al., 2020).

An important construct of the social aspect of education is students' sense of belonging (OECD Pisa, 2018). Students who feel like they belong at their institute, who feel strongly connected with their peers and educational staff, are generally more successful during their education (Korpershoek, 2016; Ahmadi et al., 2020; Ten Berge et al., 2020). On the opposite, disconnectedness and insufficient interaction between students and between students and their educational staff can lead to the feeling of not belonging to the study program or the educational institution, feelings of loneliness and a higher risk of study abandonment (Korpershoek, 2016; Ahmadi et al., 2020; Ten Berge et al., 2020).

Given the important role of students' sense of belonging, it is desirable to maintain students' sense of belonging in distance education as best as possible. Therefore, this research aims to investigate students' sense of belonging in distance education in higher education during the COVID-19 pandemic in the Netherlands. This knowledge about students' (social) well-being in critical educational circumstances could give guidelines for critical circumstances in the future, and contributes to the literature about belongingness.

THEORETICAL FRAMEWORK

SENSE OF BELONGING

An important area of social well-being of students is the students' sense of belonging, or short 'belongingness' (OECD Pisa, 2018). In this theoretical framework, belongingness will be defined, followed by the importance and requirements of this construct and how it can be supported.

Early research on belongingness described the construct as "recognition and acceptance of a member by other members in a group" (Anant, 1969) and stated that the feeling of belonging is a basic human need (Maslow, 1962). According to McMillan and Chavis (1986), belongingness is the feeling of fitting in with - and mattering to other members of the group. Baumeister and Leary (1995) state that belongingness is the need to form and maintain interpersonal relationships based on trust, acceptance, love and support. Overall, belongingness has been described by using various terminology like bonding, attachment, engagement and connectedness (Allen et al., 2016). Over the years the construct of belongingness got expanded and specified to different social groups, such as students' sense of belonging. Nowadays, the definition of Goodenow on belongingness in educational environments is still used most consistently in literature (Allen et al., 2016). According to Goodenow (1993): "belongingness is the extent to which students feel personally accepted, respected, included, and encouraged by peers and educational staff in the academic classroom setting and the feeling of oneself to be an important part of the life and activity of the class". In which the context of actual students' day-to-day life with peers and educational staff within the educational environment is emphasized (Allen et al., 2016). In the educational research of OECD Pisa (2018) the feeling of individuals who feel like they are being liked, and who feel connected to a community are added as important aspects of belongingness. But why is students' sense of belonging so important?

Previous research mentions many benefits of high belongingness for students and their educational staff and that indicates the importance of belongingness. Firstly, students' belongingness has a positive effect on persistence which is based on re-enrolment decisions of students (Tinto, 1998; Garza et al., 2020; Arslan, 2021), and it can increase academic success (Korpershoek, 2016; Korpershoek et al., 2020; Ahmadi et al., 2020). In addition, belongingness has a positive effect on educational adjustment and gives students a more positive attitude towards learning (Allen et al., 2016). Furthermore, some of the social aspects that are connected to belongingness, like bonding and connectedness, are negatively associated with undesired characteristics such as anxiety, low self-esteem, depression, substance use, delinquency, antisocial behaviour (Korpershoek et al., 2020), stress and physical diseases (Slaten et al., 2016). Higher levels of social connectedness with other students tend to endorse fewer negative mental health symptoms (Sun, Hall, DeGarmo, & Fong, 2020). Lastly, belongingness is positively associated with academic motivation (Allen et al., 2016; De Bortoli, 2018). Overall, belongingness is related to good academic performance, pro-social behaviours, and psychological and physical well-being (Allen et al., 2016). Therefore, it is important to invest in belongingness. But how can belongingness be improved?

In earlier research Maslow (1943) stated that belongingness will only emerge if physical needs and safety needs are met first, which are the two lowest stages of Maslow's hierarchy of needs. But if the needs of Maslow are met, what more is needed to support belongingness? According to the meta-analysis of St-Amand et al. (2017) emotional well-being, positive emotions, positive social relationships, effective pedagogy and fulfilling needs are fundamental elements for the belongingness of students in all levels of education. In addition, it is important that the educational staff support students academically, which includes effective teaching strategies such as relevant lectures, sufficient time for completion

of tasks and overall emphasizing the value of learning (St-Amand et al., 2017; Allen et al., 2016; Allen, 2019). Crowe (2020) mentions that belongingness often increases over time. Since students get more comfortable at their educational institutions over the years.

EDUCATION DURING COVID-19

Normally, higher educational institutions are places where students are brought together, collaborate, study, relax and have fun together, and sometimes even live together on campus (Smalley, 2021). However, in the spring of 2020, suddenly students' day-to-day lives got impacted due to the outbreak of COVID-19. Cause of temporary closure of educational institutes to control the spread of the virus and (most) teaching shifted to online distance education (UNESCO, 2020), causing students to adapt their daily and study life (Caring Universities Consortium, 2020). To gain a better understanding of the impact of COVID-19 on students' life, first, the educational situation during COVID-19 will be discussed. Followed by the concerns about the academic aspects of education and the concerns about the social aspects of education.

Educational situation. The educational situation during COVID-19 asked for a lot of flexibility for students and educational staff at all educational levels. In a short time, the educational staff had to change and adapt their courses, instructions, learning tasks, and examinations to an online environment (Lang, 2020). For most students, their education changed from traditional face-to-face education to online distance education. Distance education is providing access to learning for those who are distant in time and place (Moore et al., 2011), which means that educational staff and students do not have to meet face-to-face at the same location (Holmberg, 2005). It is also not necessary to meet at the same time, which is why there are two types of distance education (EasyLMS, 2021). The first type is synchronous education: "synchronized learning refers to a learning moment where a group of participants is committed to learning at the same time. [...] This requires them to be […] in the

same online environment, such as a web conference, where they can interact with each other and the instructor" (EasyLMS, 2021). The second type is a-synchronous education: "The instructor, student, and other participants are not in the same environment at the same time. There is no direct interaction with other people. An example of this […] is creating online material with pre-recorded videos or publishing on-demand online exams." (EasyLMS, 2021). Therefore, different kinds of media are being used for interaction and communication between the educational staff and students (Moore et al., 2011).

According to ResearchNed (2021), education for most students at Dutch universities changed a lot because of the COVID-19 safety measures. For example, people had to keep enough distance from each other. Therefore the group sizes got smaller and fewer people were allowed at the same location (Rijksoverheid, 2021). Due to safety measures, education changed into synchronous or a-synchronous distance education or hybrid learning. Hybrid learning is a mix of face-to-face learning and online learning (The University of Edinburgh, 2021). In hybrid learning, a part of the students is on campus with the educational staff, and the other students are joining the same class online. According to Smit and Zijderveld (2021), hybrid learning is challenging for educational staff: "As an experienced educational staff member you are often above the content, and you have developed certain routines to manage a group of students. When providing hybrid learning, you also have to manage a group remotely, and you have to deal with the technical side." Some students had part of their educational activities online and part of their educational activities face-to-face (ResearchNed, 2021). A few students still had most of their educational activities face-to-face due to the nature of their education or internships.

Academic concerns. According to Rijksoverheid (2021), the pandemic had a negative influence on students in higher education, for example with the study progress, delays in internships and also financially. Early studies on students' lives during COVID-19

warned that students' performances can seriously suffer from the sudden shift to distance education in which instruction may not be of the same quality as in face-to-face education (Smalley, 2021). Students themselves also believe that the pandemic harms their study progress due to struggling to concentrate in online classes (Caring Universities Consortium, 2020). Educational staff affirmed to be struggling to engage students in online education (Feedbackfruits, 2021). The research of Vansteenkiste et al. (2020) mentions that 68% of the students find it difficult to keep up with online distance education during COVID-19, 42% of the students indicated that they are lagging more behind, and 48% of the students see COVID-19 as a threat to successfully completing their academic year (Vansteenkiste et al., 2020).

According to the research of Caring Universities Consortium (2020), more than half of the students in higher education do not know what the consequences of COVID-19 will be on their studies, and almost half of the students in higher education already experienced negative effects of online classes on their study process, and around 40% of the students could not follow an internship. Overall, students indicate that they experience negative consequences of the pandemic concerning their study progress and mental health (Caring Universities Consortium, 2020). This shows that COVID-19 not only impacts the study process of students but also their well-being.

Social concerns. Not only courses had to adapt quickly to an online environment, all students' social support systems too (e.g. tutor, mentor, student psychologist). Several studies on well-being during COVID-19 show concerning factors. Since the outbreak of COVID-19, people, in general, show a lot of anxiety-related behaviour (Shigemura et al., 2020). The fear of COVID-19 and a higher perceived risk of COVID-19 has a negative impact on mental health (Yildirim et al., 2020; Shigemura et al., 2020). Many students and educational staff members in higher education are concerned for the well-being of themselves and their peers or students (Vansteenkiste et al., 2020). Although there are differences in the

resilience of students, research shows that most students experience more anxiety and depressive symptoms than before the pandemic (Vansteenkiste et al., 2020). Around 37% of the students even feel restless, panicked, tensed or sad when they think about completing their studies and exams during COVID-19 (Vansteenkiste et al., 2020; Caring Universities Consortium (2020).

Kappe et al. (2020) did a study on the impact of COVID-19 on students' lives and studies among the students of Inholland, a University of Applied Sciences in the Netherlands. They found that during the pandemic about half of their students felt committed to their fellow students, which was a much lower score than before the crisis when around 71% of the students felt committed (Kappe et al., 2020). If students do not feel committed to their peers, this can negatively impact study success and can also lead to study abandonment (Korpershoek, 2016). Overall, it can be concluded that at least half of the students felt that their well-being is negatively impacted by COVID-19. Therefore, Kappe (2020) emphasized the importance of social and academic bonding of first-year students with peers and with their educational institution at the start of their studies. Social - and academic bonding are crucial factors to ensure that students feel at home with their studies, feel safe and dare to ask for help in all years of their studies (Ten Berge et al., 2020). For social bonding, this meant that students establish and maintain interpersonal bonds with (groups of) people (Rook, 1984). And for academic bonding, this means that students feel attached to their educational institute (Goodenow, 1993; Howard & Ziomek-Daigle, 2009)

Another important factor in the well-being of students is loneliness. Students indicate that online distance education increases feelings of loneliness (Caring Universities Consortium, 2020). Loneliness is a risk factor for study abandonment and is related to the feeling of disconnectedness (Korpershoek, 2016). Arslan (2021) found that due to the COVID-19 restrictions, students are more likely to experience greater loneliness and feel

isolated because of insufficient social interactions with others in general. Students who feel lonely and feel like they do not belong at their college, experience fewer subjective vitality and more psychological adjustment challenges (Yildirim et al., 2020; Arslan, 2021). Arslan (2021) mentioned that belongingness could be used as a resilience factor in promoting psychological adjustments for students who feel lonely. A sense of belonging is crucial for forming and maintaining positive social relationships and the psychological health and well-being of students (Arslan, 2021). Therefore, it is recommended to aim for high belongingness to improve students' well-being in negative circumstances like the COVID-19 pandemic (Arslan, 2021).

Luckily, not all research about online education is filled with concerns about students' well-being. According to the research of Bridge the Gap (2020) the quality of the online classes influences students' well-being. If students feel like the online classes are valuable and interesting, they experience less stress, fewer COVID-19-related worries and have a higher level of well-being (Bridge the Gap, 2020). In addition, students who have more contact with family and friends experience less stress and have a higher level of well-being (Bridge the Gap, 2020).

Early research on belongingness during COVID-19. Due to the novelty of forced distance education during the pandemic, not much scientific research was done when this research was conducted. However, more scientific research was published during the conduction of this research. One of the early researches that mentioned belongingness during COVID-19 is the research of Vansteenkiste and colleagues (2020), which states that students score lower on belongingness and connectedness than before the pandemic (Vansteenkiste et al., 2020). Furthermore, students do not socialize as easily online as they would have done offline (Vansteenkiste et al., 2020). According to the research of Bridge the Gap (2020) the support of educational staff and peers, like taking the concerns of students seriously and the

feeling of being able to count on each other, reduces stress and COVID-19-related worries and positively influences the feeling of engagement and belonging.

THIS RESEARCH

Previous research shows that belongingness tends to have a great positive impact on students' well-being and academic success. Due to the COVID-19 pandemic, normal students' lives changed and their education had to adapt to a mostly online environment. This change in the educational circumstances (and the overall influence of the pandemic) might (negatively) influence students' belongingness and with that their well-being. Therefore, it is important to gain more insight into how students score on belongingness during the pandemic and, if necessary, how to possibly increase this feeling. Hence why the practical relevance of this research is providing knowledge and practical insights on how to possibly improve students' sense of belonging in distance education during COVID-19.

Until now, students' sense of belonging is mainly researched in middle school and in a face-to-face educational setting (OECD Pisa, 2018; St-Amand et al., 2017). Therefore, there is a current knowledge gap about belongingness in academic distance education. And overall, not much is known about belongingness during COVID-19 yet. For that reason, the scientific relevance of this research is to contribute to the knowledge of students' sense of belonging in an academic distance educational setting during COVID-19. Due to the slightly different COVID-19 restrictions around the world, this research is focused on academic students in the Netherlands. Therefore, the following research question will be investigated: "How do students in higher education in the Netherlands score on sense of belonging in distance education during COVID-19 and how could students' sense of belonging improve during COVID-19?" To answer this question, 5 sub-questions will be examined in this research:

R1: How do students in higher education in the Netherlands score on sense of belonging in distance education during COVID-19? And are there differences in the score of belongingness due to educational characteristics such as HBO or WO students, bachelor- or master students, and full-time or part-time students?

H1: Since this educational situation is relatively new not much research has been done yet. However, one of the few studies on this topic, shows that students score low on sense of belonging in distance education during COVID-19 (Vansteenkiste et al., 2020). Therefore, it is hypothesized that in general students score lower on students' sense of belonging.

R2: What is the relation between the way education is organized (online or in-person) and students' sense of belonging in higher education in the Netherlands during COVID-19?

H2: It is expected that students' sense of belonging is lower when students have more days with online lectures in distance education because they spend less time at their educational institute (Ahmadi et al., 2020) and are expected to have fewer interactions with peers and educational staff (Vansteenkiste et al., 2020). With that, it is expected that students who have more days with face-to-face education score higher on sense of belonging because they are expected to have more interactions with peers and educational staff (Vansteenkiste et al., 2020).

R3: What is the relation between the frequency of educational activities and students' sense of belonging in higher education in the Netherlands during COVID-19?

H3: It is hypothesized that students who have lectures less frequently are expected to have a lower sense of belonging because they might feel more lonely and isolated (Arslan, 2021; Ahmadi et al., 2020).

R4: What is the relation between the group size of educational activities and students' sense of belonging in higher education in the Netherlands during COVID-19?

H4: It is hypothesized that students feel less connected to their peers, educational staff and study program when they have lectures in big groups because the interaction between students can be less sufficient (Tinto; 1975, 1993; Korpershoek, 2016) in an online setting with many people. With that, it is expected that students who have lectures in bigger groups score lower on students' sense of belonging.

R5: How do students in higher education in the Netherlands think that their sense of belonging could have been improved during COVID-19?

H5: For the future, it is interesting to inventory the ideas and beliefs of students from diverse studies and educational institutions with different kinds of education during COVID-19, about how their sense of belonging could (have been) improved during COVID-19.

METHOD

This research started after permission of the Ethical Committee of the faculty Behavioural, Management and Social Sciences of the University of Twente. The ethical review number of this research is 210809.

RESEARCH DESIGN

The research has a mixed-method design, including quantitative survey research and qualitative research. This research is explorative since little is known about students' sense of belonging in distance education during COVID-19. The sampling method used in this research was a non-random sampling method which is conducted via the (social media) network of the researcher.

INSTRUMENT 1: QUESTIONNAIRE

This research's first instrument was an online questionnaire that measured the main construct 'belongingness' (see Table 1). This instrument was chosen because it makes it possible to collect data quick and easy from a large group (Saunders, Lewis & Thornhill, 2012). The questionnaire could be made in Dutch or English. Before conducting the questionnaire, a pilot study to test the clarity of the questions and statements, and to make sure there were no technical problems, was conducted. In total, 8 participants (7 Dutch, 1 German) participated in the pilot study. In the Dutch questionnaire, 5 students (4 female, 1 male) participated, and in the English questionnaire, 3 students (2 female, 1 male) participated. Based on the feedback some changes to the questions were made. For example, the answer options of the question "*With how many fellow students (peers) do you partake in these study activities*" was changed. The first answer options were large groups (31-60), and extra-large groups (>60). The new answer options were large groups (31-100), and extra-large groups (>100). According to the participants, these answer options were more accurate for the context. Based on the feedback some technical changes were made. After completing the

questionnaire the participants were asked if they found the part where they had to score statements on belongingness was not too long. And if they had the feeling that they understood what students' belongingness was based on the statements. The pilot participants thought there were a lot of statements, but they also believed that the statements helped them get a good idea of what belongingness was. Lastly, the participants were asked if they missed something in the statements on belongingness in the (at that time) educational context. They thought that the statements contained the aspects of education during COVID-19, therefore, no further changes were made to the statements about belongingness.

To measure belongingness the instruments of Arslan (2020) and Crowe (2020) were used (see Table 1). In these instruments, students had to score statements about belongingness. Both instruments are created to measure belongingness in higher education. All statements from the instruments were included because the statements seem to complement each other and are not too similar to each other, and with that ensured measuring belongingness as detailed as possible. Small adjustments were done to make the statements more applicable to the context of higher education in the Netherlands during COVID-19. For example, if the statements used the term 'university' this was adjusted to 'study program', the term 'people' was adjusted to 'peers', and the term 'teachers' was adjusted to 'educational staff' (see Table 1, adjusted). Furthermore, statements were adjusted and added to gain information about the online and in-person classes (see Table 1, new). The statements were added as the third component of the questionnaire, but are mentioned here first because they answer the main research question. In this component the participants had to score statements on a 7-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = neither agree or disagree, 5 = somewhat agree, 6 = agree, 7 = strongly agree). Table 1 shows the belongingness statements and from which source the statements are from or on which

source the adjusted or added statements are based.

Table 1

Belongingness statements

Statement	Arslan (2021)	Crowe (2020)
1. I feel like I belong in my study program. (adjusted)	X	
2. I feel like I'm a real part of my study program myself. (adjusted)	X	
3. I can really be myself in my study program. (adjusted)	X	
4. Overall, I feel happy to be in my study program. (adjusted)	X	
5. I think that the educational staff of my study program care about me. (adjusted)	X	
6. I think that my peers care about me. (adjusted)	X	
7. Peers generally ignore me in an online class. (adjusted)	X	
8. Peers generally ignore me in an in-person class. (new)	X	
9. Peers do not involve me in their plans. (adjusted)	X	
10. I don't have close bonds with peers. (adjusted)	X	
11. I don't have close bonds with the educational staff of my study program. (adjusted)	X	
12. I feel isolated from the rest of the world in my study program. (adjusted)	X	
13. I feel myself excluded in my study program. (adjusted)	X	
14. I feel like if I were struggling in one or more of my courses, I would feel comfortable talking with at least one member of the educational staff about how to get back on track. (adjusted)		X
15. I feel like I could talk to at least one member of the educational staff about problems that I may have that are non-academic in nature. (adjusted)		X

16. I feel like my peers and I are a tight-knit group. (adjusted)	X
17. I associate with peers outside of class time. (adjusted)	X
18. Some of my best friends are in the same study program as me. (adjusted)	X
19. Most members of the educational staff know me by name / recognize me when they see me. (adjusted)	X
20. I generally feel comfortable expressing my ideas in an online class. (new)	X
21. I generally feel comfortable expressing my ideas in an in-person class. (new)	X

The first component of the questionnaire was demographics (e.g. age, gender, nationality, educational institution, bachelor or master student, full-time or part-time student). The second component of the questionnaire was 'educational context' to answer the sub-questions of this research. In this component, questions were asked about how often students had lectures, how many contact hours if lectures were online or in-person, and the group size of students in the lectures. To answer the question about group size, the following answer categories were given: individual, small group (3-10 students), medium group (11-30), large group (31-100), and extra-large group (> 100). The participants also had to answer if they were in an internship during COVID-19. Lastly, participants were asked to fill in their e-mail addresses if they wanted to participate in the interviews.

Participants Questionnaire. The research population consisted of students who were students at higher educational institutes (Universities of Applied Science (HBO) and Universities (WO)) in the Netherlands. In total, 217 participants participated in the questionnaire. From this initial sample, 123 participants (94 female, 28 male, 1 prefer not to say) were, at the moment of participating, students in Dutch higher education and completed the questionnaire with 100%. The average age of the participants was 23.98 ($SD = 4.54$, age

range: 18 – 56 years). This sample consisted of 51 (41.5%) HBO and WO bachelor students and 72 (58.5%) WO master students, 109 (88.6%) of the participants studied full-time and 14 (11.4%) part-time. Besides 119 Dutch participants, 4 non-Dutch students participated. In Table 2 the educational institutions of the participants can be found. For educational institutes with N < 3 the participants were clustered in other HBO or other WO.

Table 2

Educational Institution with a distinction between HBO and WO

		N	Percentage
Educational Institution			
	Fontys Hogescholen (HBO)	3	2.4
	Hogeschool van Arnhem en Nijmegen (HBO)	3	2.4
	Saxion Hogeschool (HBO)	15	12.2
	Other HBO	10	8.0
	Total HBO	31	25.0
	Erasmus Universiteit Rotterdam (WO)	3	2.4
	Radboud Universiteit Nijmegen (WO)	6	4.9
	Rijksuniversiteit Groningen (WO)	6	4.9
	Universiteit Leiden (WO)	4	3.3
	Universiteit Twente (WO)	25	20.3
	Universiteit Utrecht (WO)	27	22.0
	Universiteit van Amsterdam (WO)	4	3.3
	Vrije Universiteit Amsterdam (WO)	7	5.7
	Other WO	10	8.0
	Total WO	92	75.0

INSTRUMENT 2: INTERVIEWS

This research's second instrument consists of semi-structured interviews. The content validity was ensured by basing the semi-structured interviews on the theoretical framework. The interviews had to provide a deeper understanding of how students believe that their belongingness could have been improved during COVID-19. This qualitative approach was used to get a clearer image of how students' educational lives were during COVID-19 and what might could have been different to improve their belongingness. An example question is: *"How do you think your students' sense of belonging could have been improved during the COVID-19 safety measures in education?"*. The duration of the interviews was 10 to 15 minutes. It was assumed that participants did not know their answers to the questionnaire anymore, because of the gap in time between conducting the questionnaire and the interviews. Therefore, participants were not asked about their answers to the questionnaire, during the interview. See Appendix B for the interview guideline.

Participants Interviews. In total, 7 (3 female, 4 male) full-time students participated in the interviews. The participants' age range was 21 to 26 ($M = 24$, $SD = 1.51$). Four students were WO master students, one was a WO bachelor student, and two were HBO students. All students that participated in the voluntary follow-up interviews were Dutch.

Originally, the aim was to interview three participants who have a specific answer pattern of only online lectures in big groups with not many contact hours, and three participants who have a specific answer pattern of online and/or in-person lectures in smaller groups with more contact hours. However, this was not possible because of the low participation rate, possibly due to the voluntariness of participation and the sampling procedure. All of the participants who wanted to participate in the follow-up interviews had all most all of their educational activities online, with just a few exceptional face-to-face educational activities when the safety measures were less strict. Their contact hours varied

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around 8 – 16 per week. None of the participants was in an internship. Therefore, the participants' selection was made, as best as possible, on differences in the educational characteristics of HBO or WO, and bachelor or master students. From this selection, the participants were contacted in chronological order. Participants, of the selection, who first responded, were interviewed.

PROCEDURE

Before participation, all participants gave active consent to use the gathered data for this research. All participants participated voluntarily; they were not given any reward. Due to COVID-19 restrictions, all data gathering took place online. To recruit participants, the research was posted on several social media platforms.

After analysing the questionnaire data in SPSS, the participants for the interviews were selected based on a few differences they had in educational characteristics. The selected participants were contacted via e-mail. The interviews were recorded, after gaining the permission of the participants. After the transcription of the interviews, the records were deleted. The transcriptions were coded and analysed.

DATA ANALYSIS

Quantitative Analysis. This research analysed the quantitative data, gathered from the online questionnaire, using IBM SPSS, version 27. The participants who did not complete the questionnaire mostly stopped at the questions about how many online and in-person educational contact hours they had during COVID-19. If the participants stopped their participation before scoring the statements on belongingness the data was deleted. This resulted in reducing the total of 217 participants to 123 participants. The 123 remaining participants were, at the moment of participation, students in Dutch higher education and completed the questionnaire with 100%. However, there was some missing data. It is expected that this is due to the fact that some students did not have any in-person educational

activities, and maybe, therefore, did not answer the questions about in-person educational activities. The characteristics of the 123 remaining participants were analysed by performing frequencies and descriptive analysis.

Firstly, to answer the main and sub-research questions about belongingness, the underlying structure of the 21 items of the sense of belonging scale was investigated (See Appendix D). Therefore, a Principal Component Analysis was performed, to make sure the adjusted scale was a useful instrument to measure belongingness. To make sure a Principal Component Analysis could be performed the Kaiser-Meyer-Olkin Measure of Sampling Adequacy was .843, and Bartlett's Test of Sphericity was <.001, which suggested that the data was suitable for factor analysis. Next, the negative items of the belongingness scale were reversed. Which included items 7, 8, 9, 10, 11, 12, and 13 (See Table 1). Thereafter, the reliability of the belongingness scale used in the questionnaire was checked. The Cronbach's alpha for the Sense of Belonging scale was .897. The Cronbach's alpha for the statements based on Arslan (2021) was .895, which was comparable with the alpha in the original research of Arslan (2021), which was comparable to the original questionnaire in which the Cronbach's alpha was.81. The Cronbach's alpha for the statements based on Crowe (2020) was .704, the original alpha was not mentioned in the research of Crowe (2020). A closer examination of the questionnaire item-total statistics indicated that the alpha would not increase if items were removed.

Secondly, an overall 'belongingness' score was computed by averaging across all 21 items. To answer **R1**, insight into the differences in belongingness for HBO or WO students, bachelor or master students, and full-time or part-time students had to be investigated. Therefore, the scores on belongingness were compared by performing independent *t*-tests with the variable 'belongingness'. Prior to conducting the independent *t*-tests, the assumptions of normality and variance were assessed.

Thirdly, to answer **R2**, **R3**, and **R4**, the scores on belongingness in relation to several educational characteristics like, how many days a week online and/or in-person educational activities, and the group size of educational activities were analysed. In this analysis, two specific patterns were investigated, which were based on the expectations from previous research (see **H2**, **H3** and **H4**). The first pattern was students with mostly online lectures in big groups with not many contact hours, and the second pattern was students with mostly online and/or in-person lectures in smaller groups with more contact hours. Therefore, the educational characteristics were computed into new variables with categories that could be compared to gain knowledge about the specific patterns. The first new variables were '*days per week online*' and '*days per week in-person*', with the following category options 0 days, 1-2 days, and 3-5 days for online and in-person educational activities. The second variables were '*hours per week online*' and '*hours per week in-person*', with the following category options 0, 0.5-5 hours, 5-8 hours, and 8+ hours per week for online and in-person educational activities. The group size was computed into variables for online and in-person education with two categories: small groups (1-30 students), and large groups (>30 students). Cross-tabulations were used to make comparisons between the categories, and to develop a sense of whether or not the patterns were represented in the data. The represented patterns were computed into the new variables '*In-person yes no*' and '*Online types of categories*'. To analyse the patterns ANOVA's were performed. Before conducting the ANOVA the data was examined to ensure all of the underlying assumptions were met, which was the case.

Further, to investigate the relation between doing an internship and the frequency of meeting with peers (online or in-person), and belongingness, multiple correlation analyses were conducted. To gain knowledge of which characteristics had coherence with belongingness (**R2**, **R3**, **R4**). Ideally, these analyses would give insight into which relations were positive and negative, and with that give insight into which (individual) characteristics

could be invested to improve belongingness. Before the correlation analysis, the assumptions of normality, linearity and homoscedasticity were assessed and found to be supported.

       Qualitative Analysis. This research analysed the qualitative data ($N = 7$), gathered from the online semi-structured interviews, using the ATLAS.ti software. The main goal of the qualitative data analysis was to find answers to **R5**. Therefore, ideally, answer patterns that contained the positive and negative educational characteristics that influenced belongingness, and tips on how to improve belongingness would be found. The coding method of Boeije (2009) was used. This method consists of three iterative phases, namely: open, axial and selective coding (Boeije, 2009). In the open coding phase, the data was coded until the point of saturation was reached, which means that there were no new codes needed to describe the data (Boeije, 2009). In the axial coding phase, the individual codes from the previous phase got divided into categories (Boeije, 2009). The theoretical framework was used to divide the codes into categories that fitted some of the educational characteristics mentioned in the theoretical framework, like for instance academic support, social support, academic needs, and social needs. In the selective coding phase the importance of the categories got determined in order to answer **R5**, and with that also the main research question (Boeije, 2009). In this phase, the categories were turned into themes, which fitted the theoretical framework and the unsuspected answer patterns. The final coding three can be found in Appendix C.

RESULTS

To gain more insight into education during COVID-19 and the perceived belongingness of students, the results of the questionnaire (N = 123) will be described in this section. Followed by the data from the interviews (*N* = 7), to deepen the findings of the questionnaire.

DESCRIPTIVE STATISTICS OF THE HYPOTHESIZED PATTERNS

To gain insight into whether or not the two hypothesized patterns were represented in this research, cross-tabulations were computed to make comparisons between online and in-person education. In table 3 the frequencies of the new variables '*days per week online*' and '*online group*' were compared, and in table 4 the frequencies of the new variables '*days per week in-person*' and '*in-person group*' were compared.

Table 3

Categories of Days of Online Education and the Group size of Online Education

		Group-Size		
		1-30 students	> 30 students	**Total**
Online Days	0 days	6	0	6
	1-2 days	55	7	62
	3-5 days	36	18	54
	Total	97	25	122

Table 4

Categories of Days of In-person Education and the Group size of In-person Education

		Group-Size		
		1-30 students	> 30 students	**Total**
In-person Days	0 days	69	2	71
	1-2 days	21	0	21
	3-5 days	2	0	2
	Total	92	2	94

As is displayed in Table 3 and Table 4, most students mainly had online educational activities that were divided over 1 to 3 days per week. How many hours per week students had online educational activities ranged from 0 to 40 hours, and in-person from 0 to 13 hours. This shows that there (still) was variation in students' educational activities during the safety measures of COVID-19. The hours per week for online and in-person educational activities compared to the group-size categories, can be found in Table 5 and Table 6.

Table 5

Categories of Hours per Week of Online Education and the Group size of Online Education

		Group-Size		
		1-30 students	> 30 students	**Total**
Online HpW	0.5–5 hours	42	5	47
	5-8 hours	16	7	23
	8+ hours	33	13	46
	Missing			7
	Total	97	25	123

Note. HpW is short for hours per week of educational activities.

Table 6

Categories of Hours per Week of In-person Education and the Group size of In-person Education

		Group-Size		
		1-30 students	> 30 students	**Total**
In-person HpW	0.5–5 hours	20	0	20
	5-8 hours	2	0	2
	8+ hours	1	0	1
	Missing			100
	Total	23	0	123

Note. HpW is short for hours per week of educational activities.

Overall, there is no variation in the in-person group size, and the variation in the categories that are represented in the in-person educational activities is low. Therefore, the second pattern of students with mostly online and in-person lectures in smaller groups with

more contact hours was not represented. Later in this research, the data of these educational patterns were checked on coherence with the belongingness of students, to answer **R1**, **R2**, **R3** and **R4**. Based on the cross-tabulations, the analysis for overall in-person educational activities will be checked for coherence with belongingness, without the comparison with group size. Therefore, the new variable '*In-person yes no*' was computed.

In table 7 the frequencies of this variable are displayed.

Table 7

Frequencies of In-Person Educational Activities

		N	Percentage
In-person Educational Activities	Yes	23	18.6
	No	99	80.5
	Total	122	99.2
	Missing	1	0.8
	Total	123	100.0

The online types of educational activities with hours of education and group size were computed into the new variable '*Online types of categories*'. The frequencies of the different types of online education can be found in table 8. Based on these frequencies the hypothesized pattern for online educational activities in big groups with not many contact hours could be analysed. It is also possible to analyse the second pattern for students who had online and in-person educational activities in smaller groups with more contact hours, but then only for online educational activities, and not for in-person educational activities.

Table 8

Frequencies of Different Categories of Online Educational Activities

		N	Percentage
Type of Online Education	Few Hours, Large Group	5	4.3
	Many Hours, Small Group	33	28.4
	Other	78	61.6
	Missing	7	5.7
	Total	123	100.0

## DESCRIPTIVE STATISTICS OF THE EDUCATIONAL CHARACTERISTICS

Besides the hypothesized patterns, other relations between educational characteristics and belongingness will be analysed to answer **R2**, **R3** and **R4**. Therefore, the descriptive statistics of these educational characteristics are analysed.

Of the 123 participants, 31 (25.2%) participants were in an internship at the time of participation. The internship activities were on average 1,5 days of the week online and 1,5 days of the week in-person.

Most students did not meet with their peers outside their educational activities during COVID-19. The frequencies of how many days a week students did meet with peers, with a distinction between meeting to collaborate for study, meeting to talk about study or meeting to socialize, at the moment of participating during COVID-19, can be found in Figures 1 and 2. In this case, socialization is defined as meeting with peers non-study-related, and that did not take place during contact hours or educational activities. The descriptive statistics show that if students met with peers, this was more often online than in-person.

How many days a week students meet with peers online to:

■ Collaborate   ■ Talk Study   ■ Socialize
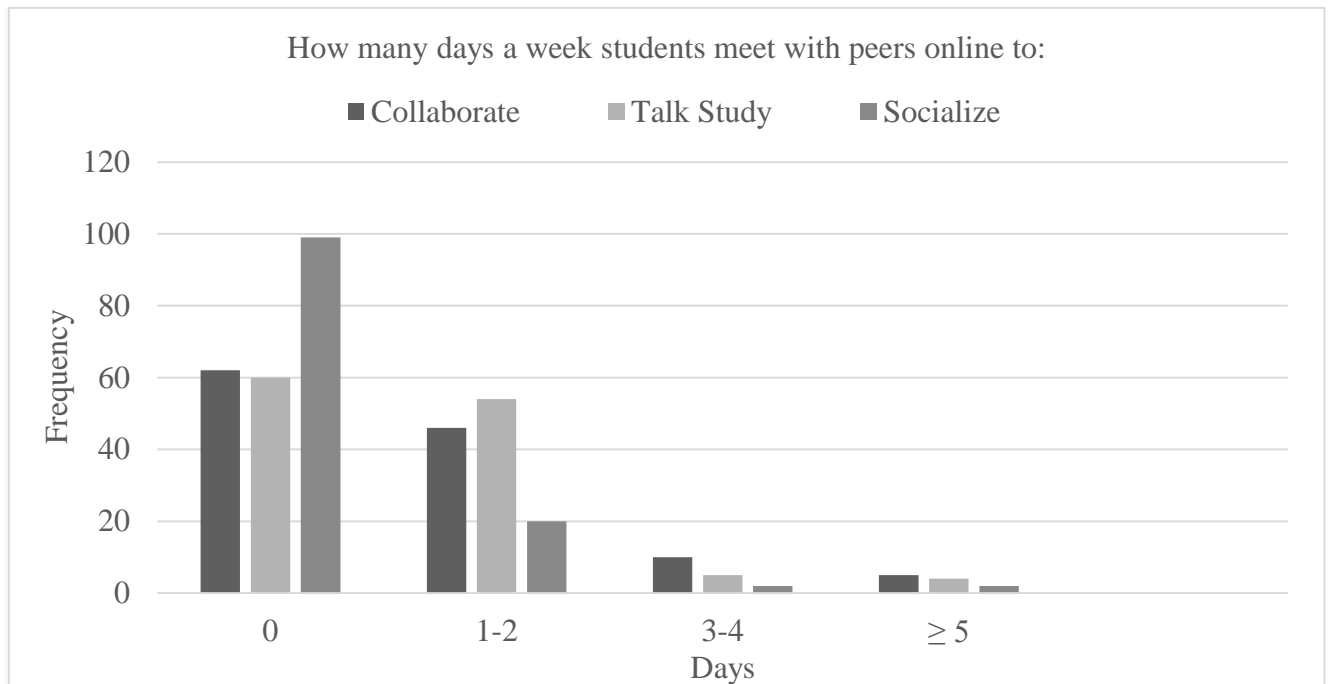
Figure 1. Clustered bar chart illustrating the frequencies of how often students met with peers online, with a distinction between meeting to collaborate, meeting to talk about study, and meeting to socialize.

How many days a week students meet with peers in-person to:

■ Collaborate   ■ Talk Study   ■ Socialize
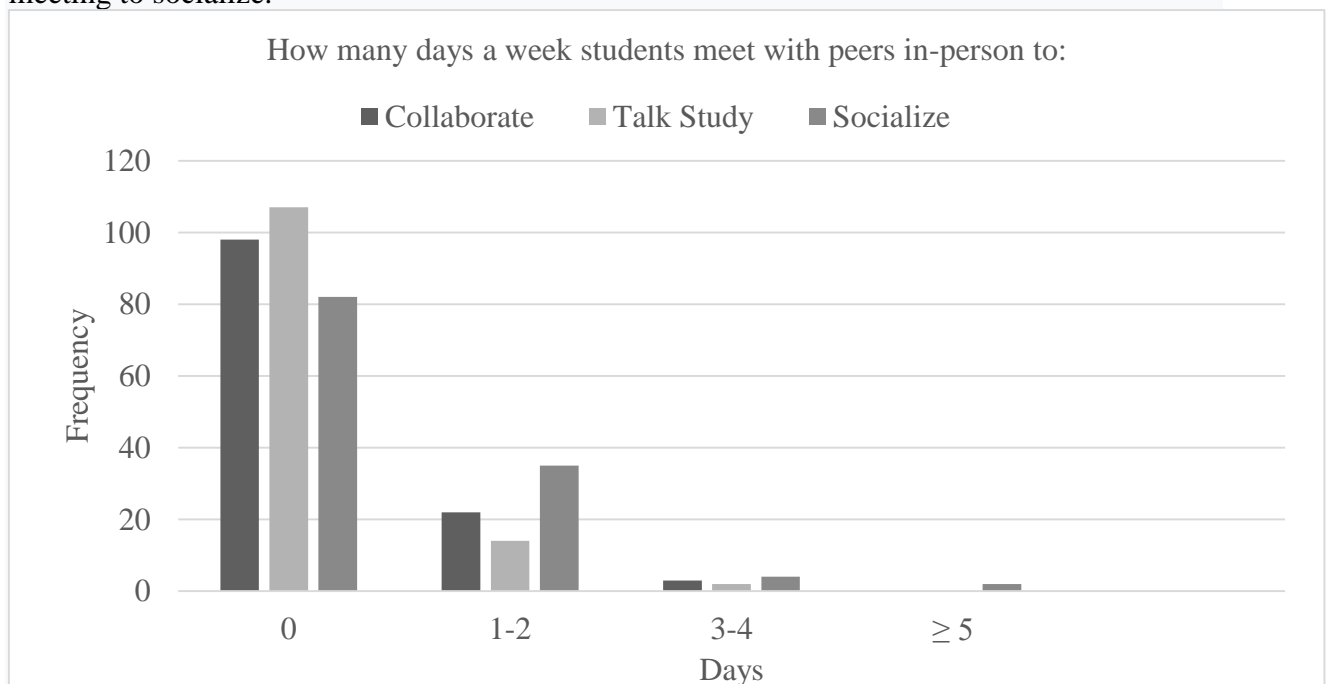
Figure 2. Clustered bar chart illustrating the frequencies of how often students met with peers in-person, with a distinction between meeting to collaborate, meeting to talk about study, and meeting to socialize.

THE VARIANCE OF THE SENSE OF BELONGING SCALE

To analyse the variance of the Sense of Belonging Scale a Principal Component Analysis was performed. Five components (with eigenvalues exceeding 1) were identified as underlying the 21 items of the scale. However, 20 items already scored high on the first component. Except for item 18 *"Some of my best friends are in the same study program as me."*, which had no score on the first component. Indicating that item 18 might has a negligible influence on the total score of the scale of belongingness. This was confirmed by the fact that removing the item would not change the Cronbach's alpha, therefore, no changes in the Sense of Belonging Scale were made. All items that scored high in the second, third, fourth and fifth components, already scored high on the first component. Therefore, the total variance can be explained by the first component (See Appendix D).

SCORES ON THE SENSE OF BELONGING SCALE

Students scored an average of 4.765 (SD = .927) on the combined score of sense of belonging. The scores range from 1.38 to 6.71. With an average score of almost 5, on a scale of 1-7, students scored their belongingness (slightly) more towards the high (positive) end of the belongingness scale.

Various t-tests were conducted to find possible differences in belongingness related to educational characteristics such as HBO and WO students, bachelor and master students, and full-time or part-time students, and with that find an answer to **R1**. For all t-tests that were conducted, the Shapiro-Wilk statistic was not significant, indicating that the assumption of normality was not violated.

The t-test for belongingness and HBO (M = 5.05, SD = .597) or WO students (M = 4.56, SD = .802) was significant (t (123) = 1.87 p <.01, two-tailed, d = .32.), indicating that HBO students scored significantly higher on belongingness. And, bachelor students (M = 5.04, SD = .78) scored significantly higher on belongingness than master students (M = 4.57,

$SD = .98$), $t(123) = 2.85$, $p < .01$, two-tailed, $d = .90$. The t test for the difference between

fulltime and part-time students was not significant. Fulltime students ($M = 4.78$, $SD = .91$)

scored insignificantly higher on belongingness, than the part-time students ($M = 4.64$, $SD = $

1.11), $t(123) = .54$, $p > .01$, two-tailed, $d = .93$. This was not unexpected, because most of the

part-time students were (WO) master students, the other t-tests showed that master students

scored lower on belongingness.

QUANTITATIVE ANALYSIS OF THE EDUCATIONAL CHARACTERISTICS AND SENSE OF BELONGING

To find answers to **R2**, **R3** and **R4**, ANOVA's were conducted with the represented

patterns of educational characteristics and belongingness. Inspection of the skewness,

kurtosis, and Shapiro-Wilk statistics indicated that the assumptions of normality were

supported for the conditions of both the ANOVA's. Firstly, a one-way ANOVA was used to

investigate the impact that in-person educational activities had on the score on belongingness.

The ANOVA was statistically significant, indicating that the score on belongingness was

influenced by having (Table 7, yes) or not having (Table 7, no) in-person educational

activities, $F(1, 120) = 4.39$, $p = .038$, $\eta_2 = .04$. Post hoc analysis with Tukey's HSD (using an

α of .05) revealed that students without in-person educational activities ($M = 4.68$, $SD = .94$)

scored significantly lower on belongingness than students who did have in-person educational

activities ($M = 5.13$, $SD = .82$). These significant results indicate that **H2** can be confirmed.
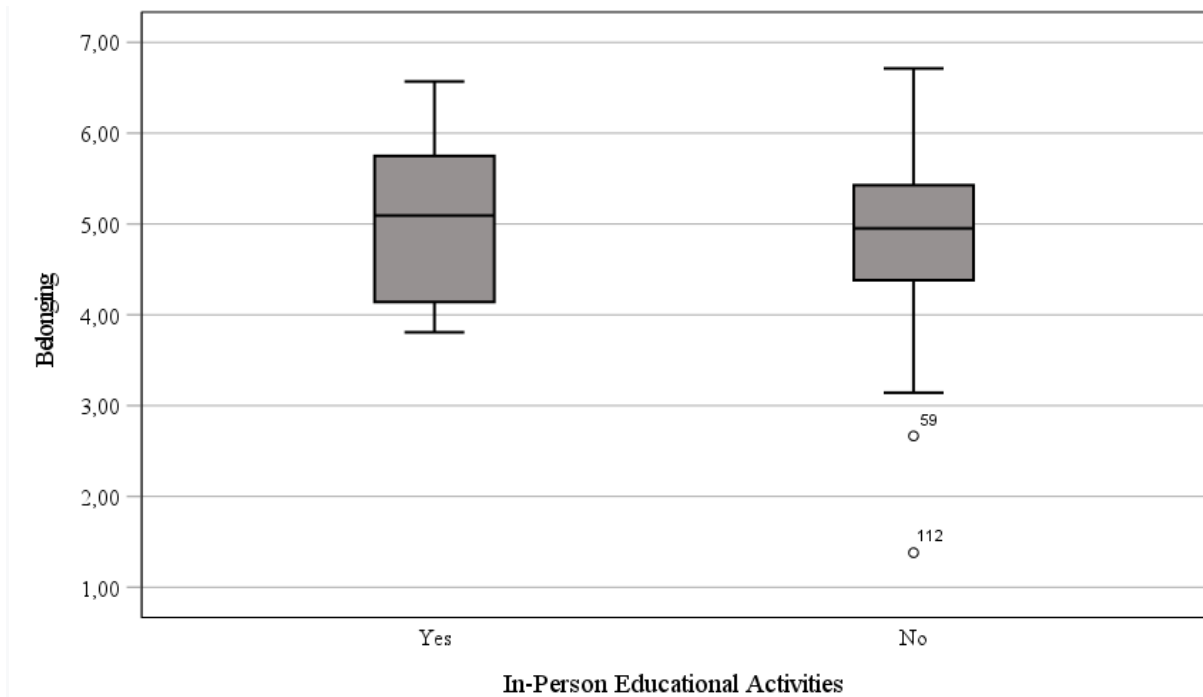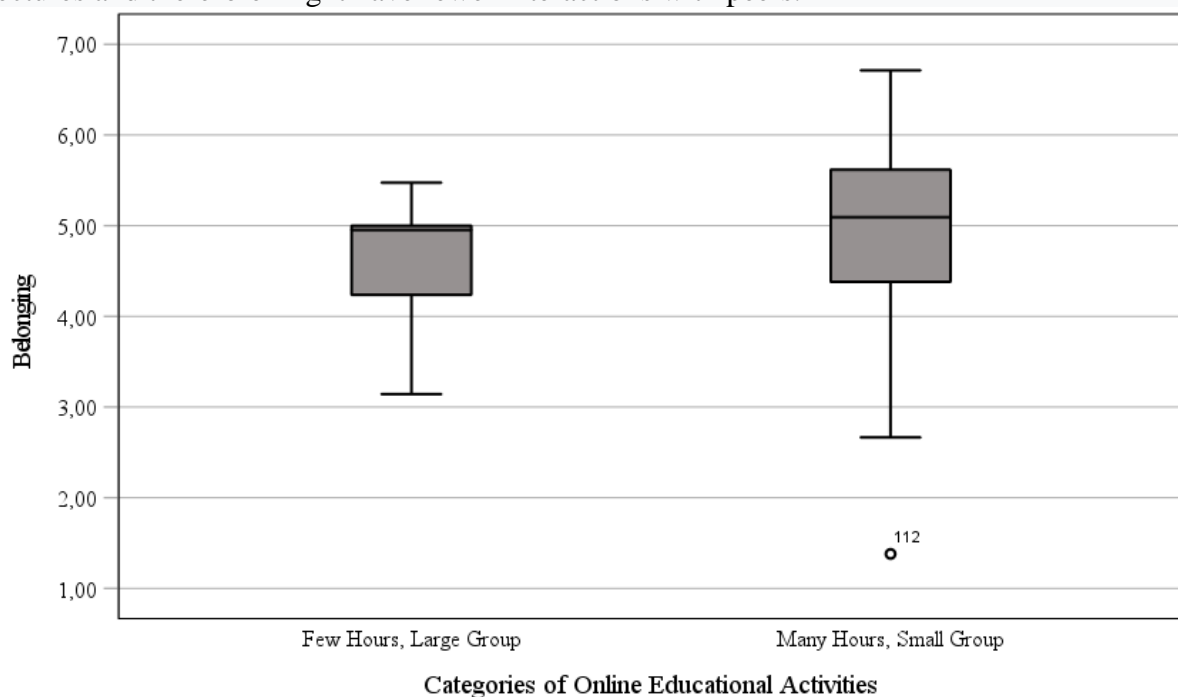
Figure 3. Box plot illustrating the scores on belonging for students with or without in-person educational activities.

Secondly, two types of categories of education were investigated (See Table 8). The ANOVA indicated a non-significant influence of type of education on belongingness, F (1, 36) = .49, p = .49, η_2 = .01. The first type of education was for students with few contact hours per week, in large groups (M = 4.56, SD = .91), which was only represented by 5 students. The second type was students with many contact hours per week, in small groups (M = 4,94, SD = 1.16), which was represented by 33 students. Students with many contact hours in small groups scored slightly higher on belongingness than the students with just a few contact hours per week in big groups. Even though these results are non-significant, they do suggest an influence of the frequency of contact hours and group size on belongingness as was expected in **H3** and **H4**.

Further, to examine the other possible relations, and the direction of these possible relations, between several (independent) characteristics of education and belongingness during COVID-19 (**R2**, **R3** and **R4**), correlations were calculated. Before calculating r, the

assumptions of normality, linearity and homoscedasticity were assessed and found to be supported. Firstly, the bivariate correlation between days of doing an internship and students' belongingness was non-significant and negative, r (123) = -.16, p (two-tailed) = .39. A possible explanation can be found in **H3**, in which it is hypothesized that students who have lectures less frequently are expected to have a lower sense of belonging because they might feel more lonely and isolated from their peers. Students who are in an internship have fewer lectures and therefore might have fewer interactions with peers.

Figure 4. Box plot illustrating the scores on belonging for students with different categories (patterns) of educational activities.

Secondly, to assess the size and direction of the linear relationship between the frequency of meeting with peers and belongingness (*r*) was calculated. In Table 9, all correlations between the frequency of days meeting with peers online and in-person to collaborate, talk study or socialize and students' belongingness can be found. Two correlations were significant: meeting with peers online to talk about study and belongingness was positive, r (123) = .19, p (two-tailed) = .40, and meeting with peers in-person to socialize

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and belongingness was also positive, r (123) = .30, p (two-tailed) = <.001. This indicates that students who regularly talk to peers online about their education have higher belongingness, and students who socialize in-person with peers also felt a higher sense of belonging. **H2**, the expectation that students who have more days with face-to-face education score higher on sense of belonging because they are expected to have more interactions, can be confirmed. However, these results also indicate a coherence between students talking about their study online and belongingness, which was not expected. Furthermore, Figures 1 and 2 show that most of the students did not meet with their peers during COVID-19 at all.

Table 9

Correlations between the Frequency of Days Meeting Peers Online and In-person and Students' Belongingness

		Belonging
Online		
	To Collaborate	.09
	To Talk about Study	.19*
	To Socialize	.07
In-person		
	To Collaborate	.05
	To Talk about Study	.09
	To Socialize	.30**

Note. * p < .05, ** p < .01

QUALITATIVE ANALYSIS OF THE EDUCATIONAL CHARACTERISTICS AND SENSE OF BELONGING

To deepen the results of the questionnaire and to find an answer to **R5**, the interviews aimed to gain knowledge about how students themselves believed belongingness could be improved. This qualitative analysis showed a total of 5 factors that students associate with positive belongingness. These will be discussed in alphabetical order.

Academic Support and Online Platforms. Several participants (4/7) mentioned their experience with the academic support they received from the educational staff. They felt more connected to their educational activities when the educational staff made sure that all students knew what was going on, and when the expectations of the activities and/or assignments were clear. Staff who often asked if they needed to explain more or if students needed help with something, were highly appreciated. Furthermore, participants appreciated the possibilities of the online platforms that were being used (Blackboard, Canvas, Google Meet, Teams, and Zoom), and the fact that the educational staff tried to make online learning as fun as possible with different interactions (e.g. mood meter).

Collaboration. Students (3/7) felt more like a part of the group when they had to collaborate in small groups. One participant mentioned they felt like they belonged to the other students when they had to collaborate on a group assignment. Especially when the collaboration was already facilitated by the educational staff, for instance, in Teams break-out rooms or in in-person small groups on campus.

Pros of In-person Educational Activities during COVID-19. Overall, the participants did not have many in-person educational activities during COVID-19. Two participants had several educational activities at their institute due to the nature of their education. Multiple participants found it easier to collaborate or discuss in in-person classes than online. They also felt more connected to their peers and two participants felt more seen

by their educational staff. One example quote is: "I believe in-person educational activities are nicer because it is easier to start discussions with peers. And it is much easier to approach the educational staff to ask questions. Overall, it is 'gezelliger'[3]."

Pros of Online Educational Activities during COVID-19. All the participants had most of their educational activities online. They found several pros of online education, for instance, it is easier / less scary to participate in a chat than to speak in an in-person class, and with a-synchronous education, you can decide your own study pace and can study where and whenever you want. The smaller break-out rooms were also highly appreciated. One example quote is: "The break-out rooms facilitated a quiet place to discuss with your group about the assignment. In an in-person class, it can be chaotic and loud if there are discussions in smaller groups." A practical advantage was the fact that students had no travel time. The advantages that students related to this were sleeping in (5/7), less chance to be late in class (1/7), and the possibility to choose a study at educational institutes on the other side of the country without having to travel there (2/7).

Social Support. Several participants (4/7) mentioned the relation of good social support from educational staff, peers, families and friends to their participation in educational activities. For example, the educational staff that checked if the students were feeling okay or how they could support the students to feel better. One example quote is: "My thesis supervisor asked me how I was doing, and how I was handling the crazy circumstances. The fact that she checked on me was very nice. It made me feel like I mattered, and that it was not just a formality of her to ask me but that she did care."

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[3] Dutch word along the lines of more fun, cosier and nicer together.

QUALITATIVE NEGATIVE RELATIONS WITH SENSE OF BELONGING

The qualitative analysis showed a total of 5 factors that students associate with negative belongingness. The factors will be discussed in alphabetical order.

Cons of In-person Educational Activities during COVID-19. Due to the safety measures, several cons were experienced in in-person education. Participants mentioned that the social distance in the classrooms made it difficult to collaborate or discuss with peers. One participant mentioned that they felt less belonging since the in-person education was at a completely different location on campus than pre-COVID. Furthermore, most of the in-person classes were hybrid. Many peers chose to participate online, and therefore, some of the participants felt that it did not add value for them to come to the in-person educational activities.

Cons of Online Educational Activities during COVID-19. Most of the participants (6/7) indicated that they missed contact with peers, with an emphasis on the lack of small talk or non-study-related conversations. In addition, some participants were also disappointed in the online participation of their peers. An example quote is: "Some students did not participate in the online lectures at all. I understand that you do not want to answer questions. But if your camera is turned off, then why even bother to be there?" Three participants explicitly said they just overall preferred in-person education, and missed the real personal contact in online education.

Not meeting Academic Needs. Three participants felt like their academic needs were not met during COVID-19. Causes were the lack of opportunities to ask questions to educational staff (they found the staff more approachable in-person), technical difficulties during educational activities that affected the quality of the educational activities, fewer contact hours than pre-COVID, and not actually being at the stimulating learning environment

of their educational institutes. One participant said: "The quality of education suffered a lot under Covid-19."

Not meeting Social Needs. Five participants mentioned that the social aspect of their education almost completely disappeared in online distance education. They spoke of the lack of interaction with peers and opportunities to socialize with peers facilitated by the educational staff. One participant said: "I believe I am a very social person. Therefore, I found it difficult that socialization proved to be hard in an only online environment during COVID-19. Studying became a complete individualistic process." Another example quote is: "Before or after classes there was no time to socialize because the staff opened and closed the online environment at the scheduled time. Overall, I felt more like I was a number than an actual person, due to the lack of connections with peers and staff members."

Practical Disadvantages of Online Distance Education. Due to the complete lockdown, students had to study from home. Several participants (2/7) mentioned their struggling with combining living and participating in education all from the same (dorm) room. An example is: "I had to participate in educational activities from my bedroom. At the beginning of COVID-19, I still lived at my parents' house, and my bedroom was really small. Sometimes it was hard to concentrate, and then it always appealed to me to just turn off the camera and go lay in bed all day. I missed the separation of working/studying and relaxation."

A GENERIC NEGATIVE EXPERIENCE IN ONLINE DISTANCE EDUCATION

Besides belongingness, students also had other more general negative experiences in Online Distance Education during COVID-19.

Uncertainty. Often mentioned was the uncertainty of the whole COVID-19 situation. An example quote is: "The first few weeks of the lockdown there were no educational activities at all and nobody knew what was going to happen. We have never been in a lockdown before in the Netherlands, so overall it was an uncertain time." Due to the

regular changes in the safety measures, it remained uncertain and unclear what was allowed in education during COVID-19. One participant said: "They said we were allowed to have two in-person educational activities a week, which made me really happy. […] Then the safety measures changed again! All the uncertainty made me feel uncomfortable. Just give me one clear plan so I can adjust to that."

TIPS OF THE INTERVIEW PARTICIPANTS TO IMPROVE SENSE OF BELONGING

In the qualitative analysis, students mentioned several tips about how they believed their belongingness could have been improved in distance education during COVID-19.

Tips Educational Institutes. Six participants offered tips for educational institutes to help improve belongingness. An example quote is: "I understand that socialization and connecting is not the primary task of an educational institute, but I do believe that institutes could have invested more effort, time and money into organizing activities to connect students and to facilitate the social aspect of education. Maybe in collaboration with study associations, so the activities could be formal and/or informal." Networking events and lectures were suggested (2/7) to be organised by the educational institute in the evenings. One participant mentioned that their educational institute facilitated an online platform to connect with peers, unfortunately, this was not successful because no one knew exactly what it was or how it worked. They suggested investing in making such platforms a successful informal environment to make students feel connected to their peers and educational institute.

Tips Educational Staff. Overall students appreciated the adjustment of their educational staff to online distance education. The switch to an online environment was relatively smooth and quick. Only a few educational staff members struggled with the technical difficulties, which students did find very annoying. So the first suggestion for the educational staff is to make sure their digital skills are up to date. Secondly, the participants

suggested the use of fun online interaction (e.g. mood meter) in the educational activities, in which variation was founded important. Thirdly, it was suggested that the educational staff should facilitate moments to socialize before and after the educational activities. Especially to promote informal socialization and small talk. One participant mentioned that they felt more connected to peers when they at least knew some basic likes and dislikes of peers and their educational staff, without actually being friends with them. Lastly, participants (4/7) preferred educational activities in small groups, and with a preference for in-person educational activities if possible.

Tips Students. Several participants (5/7) mentioned the importance of their own participation in online distance education. An example quote is: "If you do not participate, by for example turning off your camera, not participating in discussions and not answering questions, you create your own feeling of disconnectedness. I experienced that a few times myself when I was logged in but was doing the laundry instead, and therefore had no idea what was going on in the lecture. Besides, educational staff need participation and feedback of students to make the educational activities more fun." Three participants started a new (master) study during COVID-19 and mentioned that it was difficult to get to know peers. During their bachelor studies, they felt more connected to their peers and overall felt a higher sense of belonging. They believed that if they still were bachelor students (who already knew peers and staff members) during COVID-19 their belongingness would have been higher as well. Two participants suggested that students could also organize their own (informal) activities to socialize with peers, and to make sure they got to know each other.

NO NEED FOR A (HIGH) SENSE OF BELONGING

Unexpectedly found was a category that suggested that students did not necessarily feel like they needed high belongingness. This was especially an opinion that was shared by the WO master students, who have other priorities in education.

Other Priorities in Education. Three participants (all master students) mentioned that they had other priorities in education than high belongingness. This does not mean that they would not like it when their belongingness would be high, but their primary goal of education was to graduate and not to socialize or to feel connected. One participant mentioned multiple times that it was nice to have less contact. They did not feel the need to socialize with peers. An example quote is: "I believe that my sense of belonging always has been relatively low, but I just do not feel the need to belong to my educational institute, staff members or peers, and therefore I'm okay with low belongingness. I actually thought it was nice to have less contact during COVID-19."

CONCLUSION AND DISCUSSION

This research aimed to investigate students' belongingness in distance education in higher education during the COVID-19 pandemic in the Netherlands. It was intended to stimulate students and educational staff to be attentive to belongingness and to, if necessary, improve social aspects that are connected to belongingness and with that improve the (social) well-being of students during COVID-19. The data of this research was conducted via an online questionnaire and online follow-up interviews.

Before offering the main findings, a methodological limitation should be addressed. Ideally, the selection of the interviews contained three participants who had a specific answer pattern of only online lectures in big groups with not many contact hours and three participants who had online and in-person lectures in smaller groups with more contact hours. Due to the low voluntarily response to the interviews, this selection could not be conducted. A possible explanation for this low response might be that the population was over-questioned when this research took place because there was a lot of research on the experiences of students during COVID-19 at the same time.

The participants were selected from a group of students who all had most of their educational activities online. Their contact hours varied around 8 – 16 hours per week. None of the participants was in an internship. Participants were selected, as best as possible, based on differences in their educational characteristics. This is why two HBO bachelor students, one WO bachelor student, and four WO master students were interviewed.

MAIN FINDINGS

Overall Score on Belongingness during COVID-19. It was expected that students scored lower on belongingness during COVID-19 than pre-COVID. But, with an average of 4.765 (on a 7-point Likert scale) students scored their belongingness (slightly) more towards the higher end of the belongingness scale. Due to the sudden outbreak of COVID-19 and with

that the quick change in educational circumstances, it was not possible to assess the belongingness of the participants pre-COVID. However, at the same time as this research was conducted, many other researchers investigated students' belongingness during COVID-19. Mooney and Becker (2021), monitored the belongingness of university students in Dublin, pre-and during COVID-19, and found that the average score on belongingness decreased due to the impact of COVID-19. They found differences in the average score of belongingness based on gender, with men scoring significantly lower than women (Mooney and Becker, 2021). However, differences in belongingness based on gender were not investigated in this research, which used data that consisted of more female participants than male participants. With this knowledge, **H1** could not be confirmed or declined.

Belongingness for HBO/WO, Bachelor/Master and Full-time/Part-time. In general, HBO students scored higher on belongingness than WO students, and bachelor students scored higher than master students. Three students who were in a one-year master's study verified this score in the interviews. They mentioned that during their bachelor's study they felt more connected to their peers and overall felt a higher sense of belonging, than in their master's program during COVID-19. This can be explained by the fact that belongingness often increases over time because students get more comfortable at their educational institutions over the years (Crowe, 2020). Therefore, the social and academic bonding of first-years at the start of their study is important to ensure that students feel at home (Kappe, 2020; Ten Berge et al., 2020). It is important to take into account that most of the participants of this research were WO master students (N (123) = 72).

Not surprising, full-time students scored higher on belongingness than part-time students. Which was further investigated by analysing the specific patterns of educational characteristics, which will be discussed later. Most of the part-time students that participated in this research were WO master students, so this might be an explanation for their lower

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score on belongingness. It is assumed that full-time students have more contact hours, and therefore have more time to connect with peers and educational staff, and with that easier feel at home in their studies. Another explanation is that part-time students might have other priorities in their education than full-time students. In the interview several (WO master) students mentioned that belongingness was not their priority in education. However, it should be taken into account that the qualitative findings are based on the perception of students' (N = 7) own belongingness during COVID-19, and can be subjective. The interviews were conducted online, in advance it was estimated that the online environment could be a barrier for participants to sharing sensitive information with the researcher. However, the participation was voluntary, and if the participants did not want to answer a question or wished to stop their participation, they could mention this at any time during the interview, which was mentioned at the start of the interviews (See Appendix B). It turned out not to be a barrier because the participants answered all the questions and seemed to be comfortable with the online environment.

Online and In-Person Belongingness. It was expected that the score of belongingness of students who had in-person educational activities was higher than the score of belongingness of students who only had online educational activities because in distance education students are expected to have fewer interactions with peers and educational staff (Vansteenkiste et al., 2020). The results significantly align with this expectation, confirming that students who had in-person educational activities, and with that expectedly have more interactions with peers, had a higher sense of belonging (**H2**). In the interviews, the participants mentioned preferring in-person education in relation to belongingness. They stated that in online education they missed the personal contact with peers and educational staff. And found that, overall the social aspect of education almost completely disappeared in online distance education, which can be confirmed by the low frequencies of meeting with

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peers during COVID-19 (shown in Figures 1 and 2). Other research on students' belongingness during COVID-19, confirmed that online educational environments were not an adequate substitution for in-person educational activities and interactions with peers and educational staff (Mooney and Becker, 2021; Potts, 2021).

As it was expected that more interactions with peers and educational staff have a positive coherence with belongingness, correlations were analysed between the frequency of days of meeting with peers online and in-person to collaborate, talk study or socialize and students' belongingness. The results showed that students who regularly talked to peers about their education in an online environment had a significantly higher score on belongingness than students who did not regularly meet with peers. A significant result for higher belongingness was also found for students who regularly met in-person with peers to socialize. This confirms that more interactions have a positive coherence with belongingness, and that indicates that **H2** can be confirmed.

Belongingness based on the Frequency of Educational Activities. To answer the third research sub-question, the frequency of online and in-person educational activities, doing an internship, and meeting with peers to belongingness were investigated. Firstly, the investigation of the specific patterns of educational characteristics showed higher belongingness for students who had a high frequency of (online) contact hours. The lack of significant results is likely due to the sample size of the represented patterns. The higher belongingness based on the frequency of contact hours can also be confirmed by the higher score on belongingness of full-time students, as was mentioned before. These results seem to confirm **H3**.

Secondly, a non-significant negative relation between internships and belongingness was found. A possible explanation can be, that students who are doing an internship are feeling less connected to their educational institute because they are spending more time

doing their internship than spending time at educational activities. None of the interview participants was doing an internship, therefore, these results were not further investigated.

Group Size and Belongingness. The fourth research sub-question focused on the relationship between group size of educational activities and belongingness. It was hypothesized that students who have educational activities mostly in larger groups score lower on belongingness. The two specific patterns of educational characteristics showed a non-significant slightly higher score on belongingness for students who had their educational activities in small groups. The lack of significant results can be explained because only 5 participants represented the pattern of many contact hours of educational activities in small groups. The results indicate a coherence between group size and belongingness, however, due to the non-significant results, **H4** can be neither confirmed nor declined.

There was an important limitation in the questionnaire, which may have affected the findings of group size during COVID-19. Because in the questionnaire students could only choose their most common group size of educational activities and could not choose several options. Future research could gain a better idea of the educational circumstances by giving participants the option the fill in multiple group sizes.

Patterns of Educational Characteristics and Belongingness. Based on previous research on students' belongingness, two patterns of educational characteristics were expected to have coherence with belongingness. The first pattern was students with only online lectures in big groups with not many contact hours who would score lower on belongingness than the second pattern of students who had a specific answer pattern of online and/or in-person lectures in smaller groups with more contact hours (see **H2**, **H3**, and **H4**). Unfortunately, the patterns were not (highly) represented in the data that was conducted via the questionnaire. Only 5 students represented the first pattern and scored an average belongingness of 4.56 (on a 7-point Likert scale). The second pattern was only represented in online education (and not

in a combination of online and in-person education), by 33 students, who scored a 4.94 on belongingness. The results are non-significant, but both the patterns still scored above the average on the 7-point Likert scale. When comparing the few students who had in-person educational activities, with the many students who only had online educational activities, both groups scored (significantly) above average. This indicates that the educational circumstances during COVID-19 seem to not have a drastic negative impact on students' belongingness in higher education in the Netherlands.

A possible explanation could be that most of the participants of this research were WO master students. Earlier research mentioned the importance of bonding first-year students with peers and with their educational institution at the start of their studies (Kappe, 2020). But the interviews indicated that master's students seem to have other priorities in education than HBO bachelor or WO bachelor students.

Other explanations for these results were not found in the interviews. This might be explained by the fact that the participants of the interviews were not selected on the original or the adjusted patterns of educational characteristics, due to the low voluntarily response. Most of the participants of the interviews mentioned to have preferred educational activities in small groups, and in-person. Several positive aspects of online education were also mentioned. For instance, participants of the interviews found it less scary to talk in an online classroom than in an in-person classroom, and they found that in-person classes could be chaotic and loud if everybody is discussing in smaller groups.

Students' Tips To Improve Belongingness. The main aim of the follow-up interviews was to gain insight into how students themselves believed that students' belongingness could have been improved during COVID-19 (**R5**). It is important to take into account that most of the interview participants were WO master students.

How Educational Institutions can improve Students' Belongingness. Students believed that educational institutes could have improved their belongingness if the institutions organised more (informal) activities (e.g. in cooperation with study associations) like lectures or network events to facilitate more time to socialize. This is in line with the research of Potts (2021), which also investigated students' belongingness during COVID-19, which stated that students appreciated the efforts made by the educational institution to organise fun virtual events (e.g. Zoom Bingo). In addition, educational institutions could facilitate an online platform which is especially for connecting students for informal socialization. This is in line with the research of Allen et al. (2016) and Allen (2019), which was conducted in primary and secondary education, in which the importance of socialization and social support was emphasized to support students' well-being, and with that, belongingness. Therefore, they recommended that educational institutes invested in social support (Allen et al., 2016; Allen, 2019).

How Educational Staff can improve Students' Belongingness. Students believed that the educational staff could have improved their belongingness during COVID-19 by implementing a variation of fun online interactions into the educational activities. According to the research of Bridge the Gap (2020) students have better well-being and experience less stress, and fewer COVID-19-related worries, if they found the educational activities valuable and interesting. In addition, it is important that the educational staff support students academically, which includes effective teaching strategies such as relevant lectures and sufficient time for completion of tasks (St-Amand et al., 2017). Therefore, students also found it important that their educational staff had good digital skills. In addition, students suggested that the educational staff should facilitate moments to socialize with peers and their educational staff before and after the educational activities to promote informal socialization. Other researches on students' belongingness during COVID-19 also mention that social

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interactions increase the score on belongingness (Mooney and Becker, 2021; Potts, 2021). Again, Allen et al. (2016) and Allen (2019) also emphasize the relationship between socialization and belongingness and recommend that the educational staff create a positive peer culture of belonging (Allen, 2019). Therefore, teamwork and cooperative learning tasks should be implemented, to stimulate positive social relations between peers, in which each student feels accepted by their peers and can develop common interests with peers (St-Amand et al., 2017).

How Students can improve Students' Belongingness. The interview participants stated that students could improve their belongingness. Especially by making sure to actively participate in online distance education. Without participation, you do not know what is going on in educational activities and with that do not connect with peers and/or educational staff. Furthermore, students suggested that organizing their own informal activities to socialize with peers online could also have improved their belongingness. Overall, students especially seem to emphasize the relationship between socialization and belongingness. This indicates that more socialization, in any form, with peers and educational staff during COVID-19, could have improved students' sense of belonging. As mentioned in other research on belongingness during COVID-19, the frequency of social interactions has a positive influence on belongingness (Mooney and Becker, 2021; Potts, 2021).

IMPLICATIONS

Theoretical Implications. The main theoretical implications of this research are the insights gained about scores of students on belongingness during COVID-19, and which factors indicate to have coherence with these scores. This research shows that students scored slightly to the higher end of the belongingness scale. Differences between the scores on belongingness of HBO and WO, HBO bachelor, WO bachelor or WO master, and full-time or part-time students were found. Further, a non-significant difference was found between

students who only had online lectures in big groups with not many contact hours that scored lower on belongingness, and students who had online lectures in smaller groups with more contact hours that scored higher on belongingness.

Pros and cons for both online and in-person education were found. Previous research states that it is important that students find the educational activities valuable and interesting (Bridge the Gap, 2020), which may indicate that it does not make a big difference if the activity is online or in-person. Overall, students believed that the switch into distance education was rather smooth and quick, considering the circumstances during COVID-19. Mainly, students missed the social aspect of education in online distance education. In the interviews, the participants mentioned they especially missed the easy small talk with peers before and after in-person educational activities. This is in line with previous research, that states that students do not socialize as easily online as they would have done offline (Vansteenkiste et al., 2020).

Practical Implications. Although this research did not empirically test the recommendations of how students believed that their belongingness could have been improved during COVID-19, it still does offer practical tips for educational institutes, educational staff and students themselves, gained through semi-structured interviews. The main practical implication is that students especially seem to emphasize the relationship between socialization and belongingness. This indicates that more socialization, in any form, with peers and educational staff during COVID-19, could have improved students' sense of belonging. Other research on students' belongingness during COVID-19 confirms this statement (Mooney and Becker 2021; Potts, 2021). However, the qualitative analysis indicates that students did not feel like their social needs were met during the COVID-19. Previous research stated that positive social relationships, social interaction, and fulfilling needs are fundamental elements of students' belongingness (St-Amand et al., 2017).

FUTURE RESEARCH

This research investigated the belongingness of students in higher education in the Netherlands during COVID-19. Several educational characteristics were taken into account. This is why originally two specific patterns of educational characteristics were hypothesized based on previous research on students' sense of belonging. Unfortunately, the patterns were not found to be (fully) represented in the sample. Therefore, the first recommendation for future research is to do more research on specific patterns of educational characteristics and their coherence with belongingness. Furthermore, if the participants of the interviews also represented the patterns, a deeper understanding of how education should be shaped to improve belongingness in distance education, might be gained.

Previous research showed the importance of students' sense of belonging. Besides contributing to the knowledge of students' belongingness, this research also provided tips that students gave to improve belongingness. Therefore, another recommendation for future research is to investigate the effects of the implementation of certain tips to increase belongingness. Fortunately, this research already showed that students in higher education in the Netherlands even scored on the higher end of the belongingness scale during COVID-19.

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APPENDIX A

QUESTIONNAIRE

Questionnaire - Sense of Belonging of Students in Higher Education in the Netherlands - Cop

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Start of Block: Information and Informed Consent

Information about participating in this research about the Sense of belonging of Students in Higher Education in the Netherlands.

Permission
Before you can participate in this research, it is important that you actively indicate that you agree with the information below. Without this agreement, you will not be able to proceed with the questionnaire. I would like to ask you to read the information carefully and if you have any doubts or questions, please contact me (a.n.dirksen@student.utwente.nl). In the questionnaire, after reading the information below, you can answer the informed consent question with "Agree" or "Disagree".

Research goal
This research aims to gain more insight into the sense of belonging of students in higher education (HBO and WO). This is done by asking you various questions in the attached questionnaire. The answers you give to the questions contain a lot of information about how you currently experience a sense of belonging during your studies and valuable conclusions can be drawn from that! To clarify the answers you have given in the questionnaire, you may be invited for an in-depth interview. Therefore, I ask you to leave your e-mail address on the last question of the questionnaire, so that I can contact you if necessary. It is completely voluntarily to participate in the interviews.

Expectations
You are expected to complete the questionnaire honestly and as completely as possible. It is purely about your opinion and experience, so there are no right or wrong answers. In addition, I hope that you would like to complete the whole questionnaire so that I can include your data in my research. Of course, your participation is voluntary. Participation in this study is and remains your own choice at all times. If you want to withdraw during or after the completion of the study, you are allowed to do so. Your answers and data will then be deleted and not used in the research.

Advantages, disadvantages and potential risks
During your participation in my research, questions may be asked that you may experience as (very) personal. These questions are asked solely in the interest of the research. However, you don't have to answer questions you don't want to answer. Your participation is voluntary, and you can stop your participation at any time. Furthermore, your personal information and completed answers will not be shared (more about this under "privacy"). By participating in the research you help to expand the knowledge of students' sense of belonging. With this knowledge, education can improve, so this has a (direct) positive effect on your studies.

Privacy
I (Amber Dirksen) will have access to all research data together with my supervisor (Dr

Marieke van Geel, University of Twente). We are the only two people who could link answers to specific people. However, one of the first steps after collecting all data is anonymizing it. In reports or publications, such as my thesis, data will therefore not be traceable. In addition, it is good to know that we are obliged to keep the coded research data for 10 years. This is done in a protected and well-secured environment on the servers of the University of Twente. Finally, this research was assessed and approved by the ethics committee of the Behavioral, Management and Social Sciences (BMS) faculty of the University of Twente.

Compensation
You will not receive any compensation for participating in this research.

Contact
If something is unclear or if you have any questions about this research, you can always contact me (a.n.dirksen@student.utwente.nl).

Informed consent
I have read and understood the study information above, and I have been able to ask questions about the study and my questions have been answered to my satisfaction. Therefore, I consent voluntarily to be a participant in this study and understand that I can refuse to answer questions and can withdraw from the study at any time, without having to give a reason.

○ Agree (1)

○ Disagree (2)

Skip To: End of Survey If Information about participating in this research about the Sense of belonging of Students in High... = Disagree

End of Block: Information and Informed Consent

Start of Block: Requirements

Are you currently a student at an HBO or WO Educational Institution in the Netherlands?

○ Yes (1)

○ No (2)

Skip To: End of Survey If Are you currently a student at an HBO or WO Educational Institution in the Netherlands? = No

Skip To: End of Survey If Are you currently a student at an HBO or WO Educational Institution in the Netherlands? = No

End of Block: Requirements

Start of Block: Demographics

STUDENTS SENSE OF BELONGING IN DISTANCE EDUCATION DURING COVID-19

What is your gender?

○ Male (1)

○ Female (2)

○ Other (3)

○ Prefer not to say (4)

What is your age?

_____

What is your nationality?

_____

I am a ...

○ HBO Bachelor student (1)

○ WO Bachelor student (2)

○ WO Master student (3)

I am a ...

○ Full-time student (1)

○ Part-time student (2)

I study at ...

▼ Aeres Hogeschool (1) ... Other: ... (55)

End of Block: Demographics

Start of Block: Factors

How many days a week and how many hours a week do you have to partake in study activities online and how many in-person?

	The distinction between online and in-person	
	Online (1)	In-person (2)
How many days a week: (1)		
How many hours a week: (2)		

With how many fellow students (peers) do you partake in these study activities?

	Individual (1)	Small group (3 - 10 students) (2)	Medium group (11 - 30 students) (3)	Large group (31 - 100 students) (4)	Extra large group (> 100 students) (5)
Online: (1)	○	○	○	○	○
In-person: (2)	○	○	○	○	○

Are you currently doing an internship?

○ Yes (1)

○ No (2)

Skip To: Q17 If Are you currently doing an internship? = No

How many days a week and how many hours a week do you have to partake in activities for your internship online and how many in-person?

	The distinction between online and in-person	
	Online (1)	In-person (2)
How many days a week: (1)		
How many hours a week: (2)		

Which of the following platforms are used?

	My **study program** uses the following platforms as **part of** our **education**:	My **study association** uses the following platforms (e.g. for socialization):	My **study program** uses the following platforms **in addition to** our **education** (e.g. for socialization):
	They use: (1)	They use: (1)	They use: (1)

Blackboard Collaborate (1)	○	○	○
Brightspace Conference (2)	○	○	○
Canvas Conference (3)	○	○	○
Discord (4)	○	○	○
Facebook (5)	○	○	○
Gather that town (6)	○	○	○
Google Meet (7)	○	○	○
Instagram (8)	○	○	○
Moodle (9)	○	○	○
Skype (10)	○	○	○
Schoology (11)	○	○	○
Teams (12)	○	○	○
Tiktok (13)	○	○	○
Twitter (14)	○	○	○
Whatsapp (15)	○	○	○
Wonder me (16)	○	○	○
YouTube (17)	○	○	○
Zoom (18)	○	○	○

Other: (19)   ○   ○   ○

How often do you meet with your fellow students?
Indicate the number of times and the hours per week per type of interaction.
In case you don't meet with peers for a specific purpose or in a specific way, fill in '0'.

	Online		In-person	
	Number of times (1)	Hours (2)	Number of times (1)	Hours (2)
I meet with peers to talk about our study (1)				
I meet with peers to collaborate on our study (2)				
I meet with peers to socialize / not study-related (3)				

End of Block: Factors

Start of Block: Sense of Belonging

The following statements are about the sense of belonging and your experience of this feeling. Please respond to each statement using the scale below ranging from strongly disagree to strongly agree (for each statement, select the option that best reflects your response).

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree or disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
I feel like I belong in my study program. (1)	○	○	○	○	○	○	○
I feel like I'm a real part of my study program myself. (2)	○	○	○	○	○	○	○
I can really be myself in my study program. (3)	○	○	○	○	○	○	○
Overall, I feel happy to be in my study program. (4)	○	○	○	○	○	○	○
I think that the educational staff of my study program care about me. (5)	○	○	○	○	○	○	○
I think that my peers care about me. (6)	○	○	○	○	○	○	○
Peers generally ignore me in an online class. (7)	○	○	○	○	○	○	○

Peers generally ignore me in an in-person class. (8)	○	○	○	○	○	○	○
Peers do not involve me in their plans. (9)	○	○	○	○	○	○	○
I don't have close bonds with peers in my study program. (10)	○	○	○	○	○	○	○
I don't have close bonds with the educational staff of my study program. (11)	○	○	○	○	○	○	○
I feel isolated from the rest of the world in my study program. (12)	○	○	○	○	○	○	○
I feel myself excluded from my study program. (13)	○	○	○	○	○	○	○

	○	○	○	○	○	○	○
I feel like if I were struggling in one or more of my courses, I would feel comfortable talking with at least one member of the educational staff about how to get back on track. (14)	○	○	○	○	○	○	○
I feel like I could talk to at least one member of the educational staff about problems that I may have that are non-academic in nature. (15)	○	○	○	○	○	○	○
I feel like my peers and I are a tight-knit group. (16)	○	○	○	○	○	○	○
I associate with peers outside class time. (17)	○	○	○	○	○	○	○

Some of my best friends study in the same program as me. (18)	○	○	○	○	○	○	○
Most members of the educational staff of my study program know me by name / would recognize me in-person. (19)	○	○	○	○	○	○	○
I generally feel comfortable expressing my ideas in an online class. (20)	○	○	○	○	○	○	○
I generally feel comfortable expressing my ideas in an in-person class. (21)	○	○	○	○	○	○	○

How would you compare your current Sense of Belonging in Higher Education to the situation before the Covid-19 pandemic?

○ My Sense of Belonging is now higher than before the Covid-19 pandemic. (1)

○ My Sense of Belonging is now comparable to before the Covid-19 pandemic. (2)

○ My Sense of Belonging is now lower than before the Covid-19 pandemic. (3)

○ I don't know. (4)

○ Not Applicable, I wasn't in Higher Education before the Covid-19 pandemic. (5)

End of Block: Sense of Belonging

Start of Block: Interviews

To clarify the answers (if necessary) you have given in the questionnaire, I would like to contact you for an interview. Participation in these interviews is completely voluntarily.
If you want to participate in the interviews I would like to ask you to give your consent and to enter your e-mail address.
If you are interested in the results of this research, you can enter your e-mail address below.

Thank you for participating in this research about Sense of Belonging of Students in Higher Education. If you have any questions about your participation you can contact me (a.n.dirksen@student.utwente.nl).

☐ Yes, I would like to participate in the interviews. Please enter your e-mail address: (1)

_____

☐ Yes, I would like to receive the final project of this research. Please enter your e-mail address: (2) _____

☐ No, I don't want to participate in the interviews and I don't want to receive the results of this research. (3)

End of Block: Interviews

APPENDIX B

INTERVIEW GUIDELINE4

<u>Intro</u>

Welkom bij het interview voor mijn masterthesis over students' sense of belonging in het hoger onderwijs tijdens COVID-19. Fijn dat je aan mijn onderzoek mee wilt doen!

Dit interview neemt ongeveer 10 tot 15 minuten in beslag. Er zijn geen goede of foute antwoorden. Ik ben namelijk geïnteresseerd naar jouw ervaringen.

Je mag op ieder moment besluiten om een vraag niet te beantwoorden of om je deelname aan dit onderzoek te stoppen. Zonder dat je hiervoor uitleg hoeft te geven.

Voel je ook vrij om vragen te stellen zodra deze bij je op komen. Daarnaast is het belangrijk om te weten dat jouw antwoorden geanonimiseerd worden en daardoor niet aan jou kunnen worden teruggeleid. Ik ga vertrouwelijk om met de informatie die je aan mij geeft. Heb je nu nog vragen? Anders kunnen we beginnen!

<u>Vraag 1</u>

Zou je een (alomvattend) algemeen beeld kunnen schetsen van hoe het onderwijs voor jou eruit zag tijdens COVID-19?

→ Denk hierbij bijvoorbeeld aan: online of in-person onderwijsactiviteiten, hoeveel dagen per week, met hoeveel medestudenten.

<u>Vraag 2</u>

Je hebt zojuist een algemeen beeld geschetst van hoe het onderwijs er voor jou uit zag tijdens COVID-19, maar hoe heb je dit ervaren?

→ Denk hierbij aan: hoe voelde je je hierbij, wat vond je fijn of niet fijn?

<u>Uitleg sense of belonging</u>

Bedankt voor het schetsen van een beeld van jouw onderwijssituatie tijdens COVID-19. Graag wil ik je nu iets uitleggen of students' sense of belonging. In het kort is

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[4] All participants of the interviews were Dutch, therefore the interview guideline is only available in Dutch.

sense of belonging het gevoel hebben dat je ergens bij hoort. Als student zijnde is students' sense of belonging dus het gevoel hebben dat je deel bent van de groep studenten, bijvoorbeeld van je opleiding of je onderwijsinstelling, en dat je het gevoel hebt dat je er toe doet in deze groep. Heb je nog vragen over sense of belonging? Graag wil ik jou wel de volgende vragen over sense of belonging stellen.

Vraag 3

Hoe heb je jouw students' sense of belonging ervaren tijdens de COVID-19 maatregelen in het onderwijs?

→ Denk hierbij aan: welke factoren hebben hier invloed op gehad, voorbeelden, waarom?

Vraag 4

Hoe denk je dat jouw students' sense of belonging had verbeterd kunnen worden tijdens de COVID-19 maatregelen in het onderwijs?

→ Denk hierbij aan: welke factoren, voorbeelden, waarom?

Outro

Bedankt voor je deelname aan mijn onderzoek en voor je duidelijke en eerlijke antwoorden in dit interview.

APPENDIX C

FINAL CODE TREE

	Category	Explanation
Positive relations with Sense of Belonging	Academic support and Online Platforms	Educational staff who academically supported the students to include them in the educational activities and to make sure all expectations were clear. Also, the way staff used online platforms to support the students. The online platforms that were used in online distance education. The used platforms were: Blackboard, Google Meet, Teams and Zoom.
	Collaboration	Actively participate in collaboration projects.
	Pros of in-person educational activities during COVID-19	The pros of in-person educational activities during COVID-19. For example, smaller group sizes for in-person activities make it

		easier to get to know everybody.
	Pros of online educational activities during COVID-19	The pros of online educational activities during COVID-19. Like fun interaction tools and small break-out rooms to collaborate and socialize with peers.
	Social support	Educational staff who socially supported the students.
Negative relations with Sense of Belonging	Cons of in-person educational activities (due to the safety measures)	The cons of in-person educational activities during COVID-19. The cons were mainly caused by the limitations of the safety measures. For example, collaboration is difficult when you have to keep (social) distance.
	Cons of online educational activities during COVID-19	The cons of online educational activities

	Not meeting academic needs	Academic needs of students like enough contact hours were not met.
	Not meeting social needs	Social needs of students like opportunities to socialize at their educational institute or before/after educational activities were not met.
	Practical disadvantages of online educational activities during COVID-19	The practical disadvantages of online educational activities during COVID-19. Like only being allowed to study from home when you live in a dorm or on campus.
A generic negative experience in Online Distance Education	Uncertainty	The feeling of uncertainty about the educational circumstances.
Tips to improve Sense of Belonging	What could educational institutes do to improve Sense of Belonging	What could educational institutes do to improve Sense of Belonging.
	What could educational staff do to improve the Sense of Belonging	What could educational staff do to improve Sense of Belonging.

	What could students do to improve Sense of Belonging	What could students do to improve Sense of Belonging.
No need for a (high) Sense of Belonging	Other priorities in education	Some students had other priorities in education. For instance not feeling the need to socialize due to the fact of almost graduating, or just not being a very social person and therefore feeling less need for contact with peers.

APPENDIX D

PRINCIPAL COMPONENT ANALYSIS

	Components				
Item	1	2	3	4	5
1. I feel like I belong in my study program.	.72				
2. I feel like I'm a real part of my study program myself.	.70				
3. I can really be myself in my study program.	.67				
4. Overall, I feel happy to be in my study program.	.71				
5. I think that educational staff of my study program care about me.	.66				
6. I think that my peers care about me.	.78				
7. Peers generally ignore me in an online class.	.53		.57		
8. Peers generally ignore me in an in-person class.	.50		.52		
9. Peers do not involve me in their plans.	.60				

	Components				
Item	1	2	3	4	5
10. I don't have close bonds with peers.	.63	.64			
11. I don't have close bonds with the educational staff of my study program.	.63				-.50
12. I feel isolated from the rest of the world in my study program.	.66				-.43
13. I feel myself excluded in my study program.	.73				
14. I feel like if I were struggling in one or more of my courses, I would feel comfortable talking with at least one member of the educational staff about how to get back on track.	.54	-.53			
15. I feel like I could talk to at least one member of the educational staff about problems that I may have that are non-academic in nature.	.49				
16. I feel like my peers and I are a tight-knit group.	.50	.64			

STUDENTS SENSE OF BELONGING IN DISTANCE EDUCATION DURING COVID-19

| | Components | | | | |
Item	1	2	3	4	5
17. I associate with peers outside of class time.	.52	.67			
18. Some of my best friends are in the same study program as me.		.62			
19. Most members of the educational staff know me by name / recognize me when they see me.	.51			.55	
20. I generally feel comfortable expressing my ideas in an online class.	.46		.46		
21. I generally feel comfortable expressing my ideas in an in-person class.	.42		.42	.44	

Note. Component loadings <.4 have been suppressed.