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Socio-emotional support in Higher Education: Evidence from First Year Learning Communities

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Socio-emotional support in Higher Education: Evidence from First Year Learning Communities

Abstract

First-year learning communities (FLCs) are known to improve student integration during the first year at university. The FLC classroom social climate and its potential role in contributing to this positive effect of FLCs have not been studied. The current study wants to elucidate students' perceptions of the social climate within the Utrecht Undergraduate Pharmacy FLCs by exploring students' perceptions and perceived value of peer and student-teacher interactions within these FLCs, relate these perceptions to the dimensions of the classroom social climate and clarify which factors help or hinder a positive perceived value. Fourteen first-year students from the cohort 2020-2021 (n=208) participated in semi-structured individual interviews in the first, second, and fourth period of the first year. At year's end, first year students completed an online questionnaire on the quality of peer and student-teacher interactions. Our results show that FLC interactions are positively valued when students experience academic support from peers and teacher, socio-emotional support from peers and teacher, and active participation in class activities which corresponds to the classroom social climate dimensions student cohesiveness, student involvement and personalisation. Students' perceived value of interactions was influenced by a variety of factors of which online classes hampered all valued classroom social climate dimensions. Socio-emotional support from peers and teacher was not only one of the most valued classroom climate elements, it also indirectly promoted academic support and active participation. This highlights the importance of socio-emotional support in the classroom, which should receive an increased amount of attention in higher education.

Practitioner Notes

1. Interactions with peers and teachers in the classroom are positively valued when students experience high levels of academic support from peers and teacher, socio-emotional support from peers and teacher, and active participation in class activities.
2. An online setting of classes has a huge impact on the perceived value of classroom interactions because it hampers the experienced academic support from peers and teacher, socio-emotional support from peers and teacher, and active participation in class activities.
3. Socio-emotional support takes a core position in perceived value of classroom interactions: When students experience a high level of personal connection with peers and teacher, they seem to feel comfortable in the classroom and, as a result, dare to ask for help and speak up in class.
4. Supportive and caring relationships can be fostered by pedagogical strategies, such as devoting time and effort to know names and unravel a student's personal needs, expressing positive emotions, and explicating availability for help and questions.
5. Teachers may positively affect student-student relationships by creating opportunities for students to get to know each other during class time, including collaborative assignments and changing groups in collaborative assignments.

Keywords

First-year experience, learning communities, classroom social climate, peer interactions, teacher interactions

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Introduction

The undergraduate year marks the transition from high school to university and sets a foundation for students' academic performance and persistence during their university career (Reason et al., 2006). Tinto's model on student retention (Tinto, 1993) highlights the importance of student integration into the academic environment, specifically during the first year, in promoting sense of belonging, persistence and successful graduation (Pascarella & Terenzini, 2005). Higher education institutions therefore developed strategies to improve academic and social integration focusing on the "first-year experience" (FYE) (Jamelske, 2009; Reason et al., 2006). FYE programs vary widely, ranging from co-curricular activities, such as student organizations and activity in campus residence halls, to curricular activities, such as basic courses introducing students to college life or highly organized learning communities (Jamelske, 2009).

First-year learning communities (FLCs) are typical examples of FYE programs aiming to improve first year integration through interactive small group learning environments (B. L. Smith et al., 2009; Tinto, 1997). A considerable amount of research has shown positive consequences of FLCs for integration, retention and learning outcomes (Johnson, 2000; R. Smith, 2011; Zhao & Kuh, 2004). However, the mechanisms of integration in FLCs that may explain these positive consequences are not yet clear. To address this research gap, we studied students' perceptions of the social climate in the FLC classroom to elucidate what may help or hinder the development of a strong first-year learning community and thus may explain the effects. More specifically, we explored students' perceptions and perceived value of interactions with peers and teacher within the Utrecht undergraduate Pharmacy FLC to clarify which characteristics can explain positive or negative perceived value of these interactions.

Literature Review

Peer and Student-Teacher Interactions

Tinto's model of student retention (Tinto, 1993) considers the educational institution as comprising a social and academic system, and distinguishes student integration in both systems, which interact and enhance each other. The quality and amount of student interactions with peers and teachers, inside and outside the classroom, play a central role in Tinto's model. Several studies have distinguished formal and informal peer and student-teacher interactions (Meeuwisse et al., 2010). At the beginning of students' college journey, the classroom is the

primary place where interactions take place for most students (Tinto, 1997), emphasizing the important role of the classroom in promoting academic and social integration.
Multiple studies have shown that the quality and amount of peer and student-teacher interactions are related to student achievement, satisfaction, persistence, academic self-confidence, and academic skill development (Astin, 1993; Deil-Amen, 2011; Pascarella & Terenzini, 2005; Tinto, 1993). Tinto highlighted the importance of classroom interactions in the undergraduate year for academic and social integration (Tinto, 1997). He also noted that it is not just the occurrence of interactions that matters, but rather the student's perceptions of them (Tinto, 1987; Tinto & Goodsell, 1993). The nature and quality of interactions can influence the way students perceive them and, thereby, affect their sense of belonging and membership within the academic and social community of the university. Tinto argued that a student's perception of becoming a competent member of this community is crucial for successful integration. Therefore, an in-depth exploration of students' perceptions of peer and student-teacher interactions in the undergraduate classroom is essential to delineate the process of integration and to identify factors that contribute to successful integration.

Classroom Social Climate

The classroom social climate refers to the social and emotional atmosphere in the classroom. Fraser, Treagust and Dennis (1986) distinguish seven dimensions of the classroom social climate in the higher education contexts: Personalisation, Involvement, Student Cohesiveness, Satisfaction, Task Orientation, Innovation, and Individualism. A positive social classroom climate is characterized by a sense of belonging, supportive relationships among students and teachers, and an atmosphere of respect and trust. Hence, the classroom social climate is fundamentally interpersonal in nature and dependent on the quality of interactions between and among students and teachers (Reyes et al., 2012). Social climate has proven to be a powerful construct in predicting social and academic outcomes for students such as student achievement, motivation, and satisfaction (Fraser, 1987; e.g., Raviv et al., 1990).

First-Year Learning Communities

First-year experience (FYE) programs primarily aim to increase persistence and academic success by stimulating student involvement, social integration, and academic engagement in the undergraduate year. Various types of programs have been designed to meet these objectives such as first-year seminars, learning communities, orientation, student development interventions, and course support initiatives (Barefoot, 2000). One of the most widely applied strategies is the implementation of first-year learning communities (FLCs): small groups of

students (15-30 students) from the same cohort who are co-registered in two or more courses in the first-year program. Students take multiple courses together and participate in several educational activities together (Tinto, 2003). In our case, the Utrecht Undergraduate Pharmacy FLCs are small groups that remain fixed for all courses in the first semester. FLCs aim to create a safe learning environment in which there is extensive interaction and collaboration between peers and between students and teacher within the classroom environment (Shapiro & Levine, 2000).

The positive impact of FLCs on persistence, academic achievement, involvement, and satisfaction has been well documented (see Andrade, (2007) for a review). However, it is not clear yet from existing studies and implementations what specific features or mechanisms linked to the FLCs could explain these effects. To address this research gap, we focused in this study on exploring students' perceptions of interactions within the FLC classroom and aimed to clarify which characteristics may help or hinder a positive perceived value.

Research Questions

This study aimed to elucidate students' perceptions of the social climate within the Utrecht Undergraduate Pharmacy FLCs by exploring students' perceptions and perceived value of peer and student-teacher interactions within these learning communities during the first year. We sought to relate these perceptions to the dimensions of the classroom social climate and clarify which characteristics can explain positive or negative perceived value of these interactions. Our research questions were as follows:

1. Which elements of peer and student-teacher interactions do students perceive as valuable in FLCs at three different time points during the first year of study?
2. How are the elements of peer and student-teacher interactions that students perceive as valuable related to the dimensions of the classroom social climate?
3. How do students' perceptions and perceived value of peer and student-teacher interactions in Utrecht Pharmacy FLCs develop during the first year of study?
4. What factors promote or hinder a positive perceived value of peer and student-teacher interactions in FLCs?

The study took place during the COVID-19 pandemic period in 2020-2021, during which many classes were forced to switch to an online setting. This shift affected, among other things, the relational aspects of interactions and the opportunities for interactions outside the classroom (Resch et al., 2022). Thus, the online FLC classroom setting most likely influenced students'

experiences of the social climate and interactions and should be considered when interpreting the results of our study.

Methods

Design and Procedure

The study was approved by the ethical committee of the Faculty of Sciences at Utrecht University: Science L-20436.

To answer the research questions, semi-structured individual interviews were conducted three times during the first year to delineate students' perceptions and perceived value of the interactions, and which factors help or hinder a positive perceived value. At Utrecht University, the academic year is divided into four periods of 10 weeks each (period 1: September - November; period 2: November - February; period 3: February – May; period 4: May – July). Individual interviews were carried out in the first (T1), second (T2), and fourth (T3) period of the first year. We invited students in a stepwise manner from the list of course participants, starting with student number 2 from each FLC, followed by number 4, 6, 8 and 10. A total of 66 students were invited from multiple FLCs and 14 students volunteered to participate. Interviews were confidential, carried out online via MS Teams by an experienced research assistant (a master's student), and lasted a maximum of 60 minutes. Participants provided informed consent and received a reward of 20 euros after the third interview.

At the end of the year, all students from the cohort were asked to voluntarily complete an online questionnaire measuring the quality of peer and student-teacher interactions. This instrument was used to substantiate the results from the interview data to address Research Question 1.

Participants and Setting

Participants were first-year students from the cohort of 2020-2021. Students (n=208) were divided in 16 first-year learning communities (FLCs) of between 12 to 14 students. The groups were led by an academic skills teacher, with each teacher guiding two FLCs (Teacher I: Group 1 and 9; Teacher II: Group 2 and 10, etc.). The teacher also served as a tutor for the students in the group, providing individual support and study guidance throughout the program. During the first year, the teacher met twice with each student to discuss in a one-on-one conversation their academic progress and personal development. The FLCs were centered around an interactive course in academic skills (the Ba100 course), which spanned the entire first year. The group composition remained fixed for all courses during periods 1 and 2. In period 3 and 4, the group composition was only fixed for the academic skills course. The academic skills course included mandatory group meetings every 2-4 weeks throughout the first year. For all courses, meetings

were held on average 1-2 days per week on campus, with online meetings on the remaining days in the period from September to December 2020. Starting from January 2021 (midway through period 2) until April 2021 (beginning of period 4), all FLC meetings took place online. From May 2021 onwards, FLC meetings for the academic skills course resumed on campus every 2-4 weeks, unless the teacher was in quarantine.

In the first round of semi-structured interviews 16 students participated, of which 14 completed all three rounds of interviews. The data from the two participants who did not complete all the interviews were not used. A total of 100 students filled in the questionnaire, but three students who only partially completed it were excluded from analyses.

Instruments

Individual Interviews

A semi-structured interview guide with questions related to the dimensions of the classroom climate was used (see Appendix 1). The interview guideline was piloted on two students and minor adjustments were made based on these pilot interviews. As the modifications of the initial interview guideline were minimal (e.g., the addition of a few follow-up questions to aid the interviewer in gathering supplementary information), the data from the pilot interviews were included in our analysis.

Questionnaires

An online questionnaire was employed to assess students' perceptions of peer and student-teacher interactions. The quality and quantity of these interactions were evaluated using four sub scales that measured both formal and informal interactions with peers and teachers, originally developed by Severiens et al. (2006). The items were modified to focus specifically on the interactions within the designated FLC, e.g., 'Students from my FLC approach me to cooperate'. Participants were asked to rate each item from every sub scale on a 5-point Likert scale, ranging from 1 (totally disagree) to 5 (completely agree). The formal student-teacher interaction scale (TSI-formal) comprised seven items (e.g., the FLC teacher is available for students from the group) with a Cronbach's alpha of .79. Informal interaction with teachers (TSI-informal) was assessed with eight items (e.g., I have good personal contact with my teacher) and yielded a Cronbach's alpha of .79. The formal peer interaction scale consisted of eight items (e.g., Fellow students from the FLC approached me to work together on study tasks) and exhibited Cronbach's alpha of .88. Lastly, the scale measuring informal interaction with peers consisted of five items (e.g., Fellow students from the FLC are interested in me) with a Cronbach's alpha of 0.88.

Data Analysis

Interview Data

Audio recordings of the interviews were transcribed and analysed with NVivo. A combination of approaches for analyses was used, top down (theoretically driven coding) and bottom up (coding from the data) (Merriam & Tisdell, 2016). A priori codes aligned with the key concepts of our theoretical framework combining concepts of Tinto (1993) and Fraser, Treagust and Dennis (1986) (e.g., quantity of interactions, nature of interactions, students' perceived value of interactions), whereas codes representing themes in the data were e.g., shared experiences.

To become familiar with the data, the first author (pharmacy professor, female) and a research assistant (final year master's student, educational sciences, female) read the interviews from round 1, took notes, and applied the a priori codes to the transcripts. Through several rounds of discussion, they reviewed the coded fragments and refined the definition of a priori codes. This process also led to the addition of codes: themes that were different from the a priori codes and represented the data, such as the codes 'shared experiences' and 'teacher academic support'. The coding process also revealed that some fragments could have multiple codes (e.g., academic support and student involvement). The resulting coding scheme (Appendix 2) was then used by both researchers to independently code interviews of round 1.

To assess interrater reliability, the weighted kappa was calculated for themes that had five or more coded fragments. A weighted kappa above 0.6 was considered sufficient reliability. If the weighted kappa of a theme fell below 0.6, the researchers discussed the theme and modified its definition accordingly. The weighted kappa for this theme was then determined again in the next cycle of coding, using a new set of interviews, until a value above 0.6 was achieved. As a result, the mean weighted kappa for the 14 themes coded more than five times (out of a total of 22 themes) was 0.74 (0.60-0.91).

After coding all interviews, the first and last authors reviewed all coded fragments for each theme and time point and summarised the main topics. The summaries for each time point were compared to identify changes over time. The coders compared and discussed their summaries until consensus was reached, resulting in a comprehensive overview of the main topics and changes over time. Elements mentioned by three or more participants were considered relevant and will be included in the results section.

Questionnaire Data

SPSS was used to analyse the questionnaire data.

Results

Valued Elements of Interactions and Relations of these elements to the Classroom Social Climate (Research Questions 1 and 2)

The results for Research Questions 1 and 2 will be addressed for peer and student-teacher interactions separately.

Peer Interactions

Regarding peer interactions participants consistently mentioned, and positively valued, three key elements at all time points: i) knowing each other, ii) helping each other, and iii) active participation in class activities.

These positively valued elements align with the social climate dimensions of student cohesiveness and student involvement. Student cohesiveness refers to “the extent to which students know, help and are friendly towards each other” (Fraser et al., 1986). In our data, we distinguished two aspects of student cohesiveness: knowing each other (e.g., socio-emotional support) and helping each other (e.g., academic support). In addition, our data revealed that the extent to which students knew and were friendly towards each other promoted helping each other, suggesting that these two aspects influenced one another. Quotes from the interviews that illustrate these valued elements are shown in Table 1.

Table 1

Quotes Illustrating the Three Positive Valued Elements of Peer Interactions and Related Classroom Climate Dimensions in The Undergraduate Utrecht Pharmacy FLCs

Valued element of student-teacher interactions	Classroom Social Climate dimension	Example quote
Socio-emotional support	Student cohesiveness	“And I have the idea that everyone knows each other a bit more than in the other courses, because you always have a new group there. So, there it is often a bit more superficial and

		in BA100 classes you just start a conversation more often." Participant J, T3
Academic support	Student cohesiveness	"Well, they are all very helpful anyway and also if things do not make sense to you, because you find it difficult, because you have a lot of questions, yes, everyone gives a bit of the feeling: we are in it together and together we'll get through it. Yes, you notice a lot of support, even if you find something difficult, then they simply say: 'Yes, come on, you can do it, we will help." Participant O, T1
Active participation	Student involvement	"... it's really nice, everyone actively participates, everyone just chats with each other and there is also a lot of educational interaction like: 'Have you already finished this, can you help with that?' Everyone supports each other. Participant N, T1

Student-Teacher Interactions

Consistent with the findings on peer interactions, the most frequently mentioned and valued elements of student-teacher interactions at all time points were: i) personal interest and knowing each other (e.g., socio-emotional support), ii) receiving help from the teacher regarding the learning content (e.g., academic support), and iii) the teacher's role in active participation. These aspects align with the classroom social climate dimensions of personalisation and student involvement (Fraser et al., 1986). Within the dimension personalisation, a clear distinction between academic support and socio-emotional support could be observed. Quotes from the interviews that illustrate these valued elements are presented in Table 2.

Table 2

Quotes Illustrating the Three Positive Valued Elements of Student-Teacher Interactions and Related Classroom Climate Dimensions in The Undergraduate Utrecht Pharmacy FLCs

Valued element of student-teacher interactions	Classroom Social Climate dimension	Example quote
Socio-emotional support	Personalisation	"Well, I think at the time of measurement one we hadn't had that 1-to-1 conversation yet and, well, I think since that conversation, it has become clear to me that she understands me and that she knows how I'm put together." Participant O, T2
Academic support	Personalisation	"Yes, very good, because my teacher is just really nice and she has positive energy, positive appearance, always smiling and always willing to answer questions. When people ask super small questions, she always gives a comprehensive answer. She really gives you the feeling that you can just go to her with all problems, with everything." Participant G, T3
Active participation	Student involvement	"Well, she just asked a lot of questions. For example, she had prepared a presentation and then she tried giving people turns and asking questions, so that everyone actively participated." Participant J, T1

Students' Perceptions and Perceived Value of Interactions during the First Year (Research Question 3)

The results for Research Question 3 will be addressed separately for peer and student-teacher interactions and based on the positively valued elements and the corresponding social climate dimensions as described in the previous paragraph.

Peer Interactions

An overview of the main topics mentioned by students regarding the three positively valued elements of peer interactions at the three interview time points throughout the first year is presented in Table 3.

Table 3

Summary of the main topics mentioned by participants related to the three valued elements of FLC peer interactions at the three interview time points.

Valued Element	Main topics		
	Sept - Nov (T1)	Nov – Feb (T2)	May – July (T3)
Socio-emotional Support	Limited interaction/not knowing each other well (10) Interactions mostly in classroom (10) Atmosphere is nice and friendly (9)	Knowing each other better/stronger connection with peers in time (10) Fewer interactions due to online setting of meetings (10) Interactions more informal over time (10) Fewer interactions due to switching of groups in other courses (7) Contact outside lessons only with a couple of FLC peers (7) Online atmosphere is less personal (7) Working in break-out rooms stimulates informal interaction online (5)	Still not close to each other (9) Fewer interactions in online setting (8) FLC is grassroot group who they know best and feel safe (7) Fewer interactions due to small number of lessons (6) Contact outside lessons with a couple of FLC peers (6)
Academic Support	Shared experiences and problems stimulate helping each other (10) Peers are willing to help each other (6) Most questions are asked in group app of complete cohort (5)	Peers from FLC approachable for questions (7)	Peers from FLC approachable for questions (8)
Active Participation	Active participation in class (8) Suboptimal participation (6)	Lack of active participation due to online setting of classes (8) Active participation in FLC better than in other courses (6) Course became more interesting in time (6)	Active participation in FLC better than in other courses (7) Lack of active participation in online classes (6) Preparation of classes diminished due to workload in other courses (4)

	Working in break-out rooms stimulates active participation online (4)

In T1, participants indicated that there was limited interaction among peers and that peers from the FLC did not know each other very well (e.g., limited socio-emotional support).

We don't talk much, only during the meetings when working on the assignments. But personally, I don't really have fellow students I talk to daily or whom I ask questions about homework or exams. I do have contact with one fellow student, because she is also from The Hague, so I speak with her more often. (Participant M, T1)

Still, participants did note that, despite the limited interactions, the atmosphere in the FLC was pleasant and friendly, and students were willing to help each other. They acknowledged that first-year students sharing similar experiences and problems made it easier for them to help each other (i.e., provide each other academic support), which was specifically mentioned in T1.

At T2, shortly after all educational meetings switched to online, participants indicated they had got to know their FLC peers better since T1 and felt a stronger connection with the group. This indicates that students experienced an increase in socio-emotional support between T1 and T2. However, participants mentioned in T2 and T3 that interactions with most peers from the group diminished since i) meetings shifted to online, ii) group composition for the other courses changed in semester 2, and iii) the number of lessons decreased.

Well, I know the people a bit better now that I've had lessons with them for a long time, but now we've split up again, because we're all taking new courses now. Now the group is really a bit divided. So, I'm not going to see them all outside lessons of BA100. But yeah, not much has changed. It's all a bit, online a bit, I don't know, a bit less social I think, less social interaction. (Participant D, T2)

At T3, participants pointed out they still did not feel particularly close to each other. That said, half of the participants expressed that the FLC was their grassroots group which they knew best, where they felt safe (e.g., socio-emotional support), and where they sought academic support.

And I have the idea that everyone knows each other a bit better than in the other courses, because you always have a new group there. So, there it is often a bit more superficial and in BA100 classes you just start a conversation more often. (Participant J, T3)

With respect to active participation, students' perceptions varied on T1. In T2 and T3, however, participants expressed their dissatisfaction with the lack of active participation in online classes, mainly because students did not feel addressed to respond to questions in an online setting.

It has been a bit more difficult since the second lockdown period, because everything now goes online instead of face-to-face, and I do notice that this made people less active than they were before. They feel less urged to respond than before. (Participant A, T2)

Active participation appeared to be lowest in T3 due to the already diminished participation in online classes, further aggravated by the high workload in parallel courses.

From BA100, euh, yes, not so much, because I notice, euh, what I remember from the last meetings about those interview skills training, I think, yes, I don't remember what you call it, but yes, there were a lot of people who hadn't prepared. But I think that makes sense, because the other two courses were tough during this period. So, if you have to do self-study, then yes, then I think it makes sense that I put BA100 last .... (Participant G, T3)

Still, participants did mention in T2 and T3 that active participation seemed to be easier with FLC peers compared to other online classes because they knew each other.

Yes, it is always nice to be surrounded by people you know, because for example with other groups, there are also new groups now and you have never seen those people. So then when you are dropped in a group then, it's kind of uncomfortable or nobody turns on the camera or microphone and you're all, yeah, kind of staring at a black screen. That's a bit uncomfortable. (Participant K, T2)

Based on our interview data, the quality and quantity of formal and informal interactions with peers seemed to decrease throughout the year and thus might be relatively low in T3. However, results from our questionnaire data were not consistent with the interview results. The questionnaire data revealed that the mean total score for formal student-student interactions on T3 was 3.80 ± 0.68 and the mean total score for informal student-student interactions was 3.69 ±0.79, indicating that the overall perception of the quantity and quality of peer interactions on T3 was not low.

Student-Teacher Interactions

An overview of the main topics mentioned by students related to the three valued elements of student-teacher interactions at the three interview time points throughout the first year is provided in Table 4.

Table 4

Summary of the main topics mentioned by participants related to the three valued elements of FLC student-teacher interactions at the three-interview time points

Valued Element	Main topics		
	Sept - Nov (T1)	Nov – Feb (T2)	May – July (T3)
Socio-emotional Support	Teacher knows names (11) Limited interaction, only in classroom (9) Teachers asks about personal welfare (7); teacher does not ask about personal welfare (4) Teacher does not know students (6) Teacher is approachable (6)	Teachers asks about personal welfare (11); teacher does not ask about personal welfare (3) Teacher is approachable (10) More personal contact since 1-on-1 meeting (8)	Teacher asks about personal welfare (11); teacher does not ask about personal welfare (3) Teacher is approachable (13) Limited interaction due to small number of lessons (4)
Academic Support	Teacher is approachable (6) Clear explanations of learning material (6) Rapid response to questions (6) Expectations of assessment unclear (4) Good organization of lessons (3)	Teacher is approachable (10) Clear explanations of learning material (7) The barrier to ask for help decreased (6)	Teacher is approachable (13) Clear explanations of learning material (7)
Active Participation	Teacher stimulates active participation by asking questions and giving turns (8)	Lack of active participation in online classes (6) Teacher asks questions and gives turns in online classes (6)	Lack of active participation in online classes (6) Teacher asks questions and gives turns in online classes (6)

Overall, perceptions and perceived value of student-teacher interactions appeared to be relatively stable over time.

In T1, participants indicated limited interactions with the teacher, primarily occurring within the classroom setting. The limited number of interactions continued in T2 and T3. In T1, teachers sometimes asked the group about their personal welfare, but in T2, shortly after all meetings switched to online, more participants reported that the teacher asked about their well-being. Participants also indicated that personal contact had grown in T2, because they had the half-

year individual meeting with the teacher. Hence, socio-emotional support from the teacher seemed to have grown between T1 and T2.

Well, I think at the time of measurement one we hadn't had that 1-to-1 conversation yet and, well, I think since that conversation, it has become clear to me that she understands me and that she knows how I'm put together. (Participant O, T2)

Participants valued the academic support provided by teachers, including well-organized, clear explanations of learning material, and rapid responses to questions.

Well, I appreciate the feedback. That's really straight to the point, so to speak. If I ask something, I get an answer right away so then I am able to continue. (Participant I, T1)

These perceptions of academic support remained consistent over time, except for a decreased barrier to asking the teacher for help reported by participants on T2.

Well, during the first period I was like: but I don't really dare to ask anything yet and I don't know if he would help then. But now, yes, then you sit there for almost half a year, then you feel more comfortable when you ask the teacher for help, so to say. (Participant I, T2)

On all timepoints, participants particularly appreciated the approachability of the teacher for both socio-emotional support and academic support, even if they did not require support. It gave them the feeling that there was a faculty member they could turn to.

Finally, participants appreciated the role of the teacher in stimulating active participation in class activities. In T1, most participants pointed out that the teacher stimulated active participation by asking questions to the group and giving turns to students.

Well, she just asked a lot of questions. For example, she had prepared a presentation and then she tried giving people turns and ask questions, so that everyone actively participated. (Participant J, T1)

Although active participation declined in T2 and T3 due to the online setting, participants still felt that FLC teachers encouraged active participation.

The positive perceived value of student-teacher interactions observed in our interview data again were evaluated considering the questionnaire data. The interview results appeared consistent with the questionnaire results on formal and informal student-teacher interactions on T3. The mean score for informal teacher-student interactions was 4.02 ± 0.59 and the mean for formal was 4.08 ± 0.53 on T3.

Factors contributing to the Perceived Value of Interactions by students (Research Question 4)

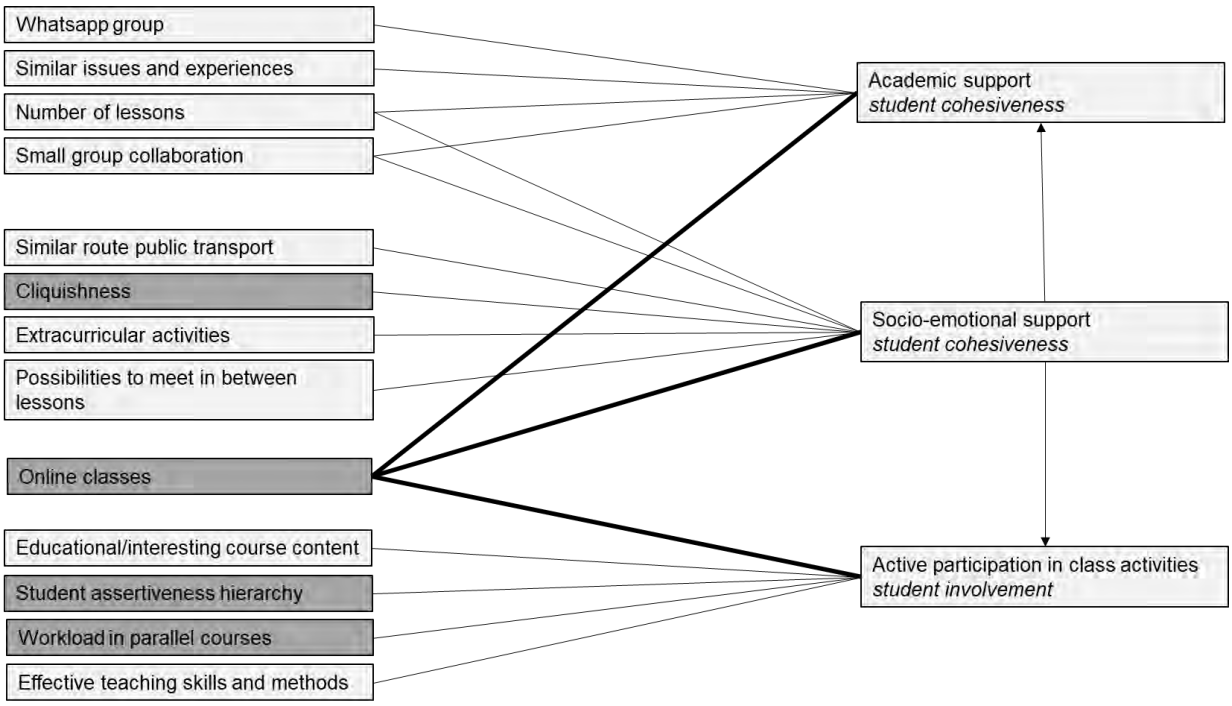
The results for Research Question 4 are based on interview data and will be addressed separately for peer and student-teacher interactions.

Peer Interactions

According to our data, the positively valued elements of peer interactions, including socio-emotional support, academic support, and active participation in class, were influenced by a variety of factors. While the way participants experience elements of interactions and this experience may differ across the first year, the direction of the influence of these elements on perceived value of interactions remained consistent across timepoints and participants. For example, an individual participant may find the course content more interesting at T3 compared to T1, but the positive influence of interesting course content on active participation and thereby on the perceived value of interactions remained consistent. Figure 1 provides an overview of the factors that contribute to the perceived value of peer interactions, incorporating interview data from all time points.

Figure 1

Overview of Factors Contributing to the Perceived Value of Peer Interactions, Incorporating Data from All Timepoints



Note: Factors in light grey represent a positive contribution while factors in dark grey represent a negative contribution. The factors are presented in relation to the three main positively valued aspects of peer interactions: academic support, socio-emotional support, and active participation in class.

Remarkably, online classes emerged as a factor that hampered all three aspects of positive perceived value. The online setting hindered both the process of getting to know each other and asking each other questions (e.g., help each other). Participants noted that active participation had decreased in an online setting due to higher thresholds for speaking up and increased susceptibility to distractions.

At home it's just turning on your laptop and then you sometimes just do something else and then you'll know when you must do something. But yes, when face-to-face, you cannot just walk out of class, so you are more busy, more involved in class. You just must. (Participant B, T3)

Another striking result was the indirect influence of knowing each other on the other two elements. Participants expressed that when they knew their peers, they felt more comfortable to actively participate and speak up in class. In addition, knowing each other appeared to facilitate seeking help from peers.

Because I like discussions of course, but if I don't know the group that well, I find it a bit more uncomfortable in the beginning or I usually wait before I say something. (Participant F, T1)

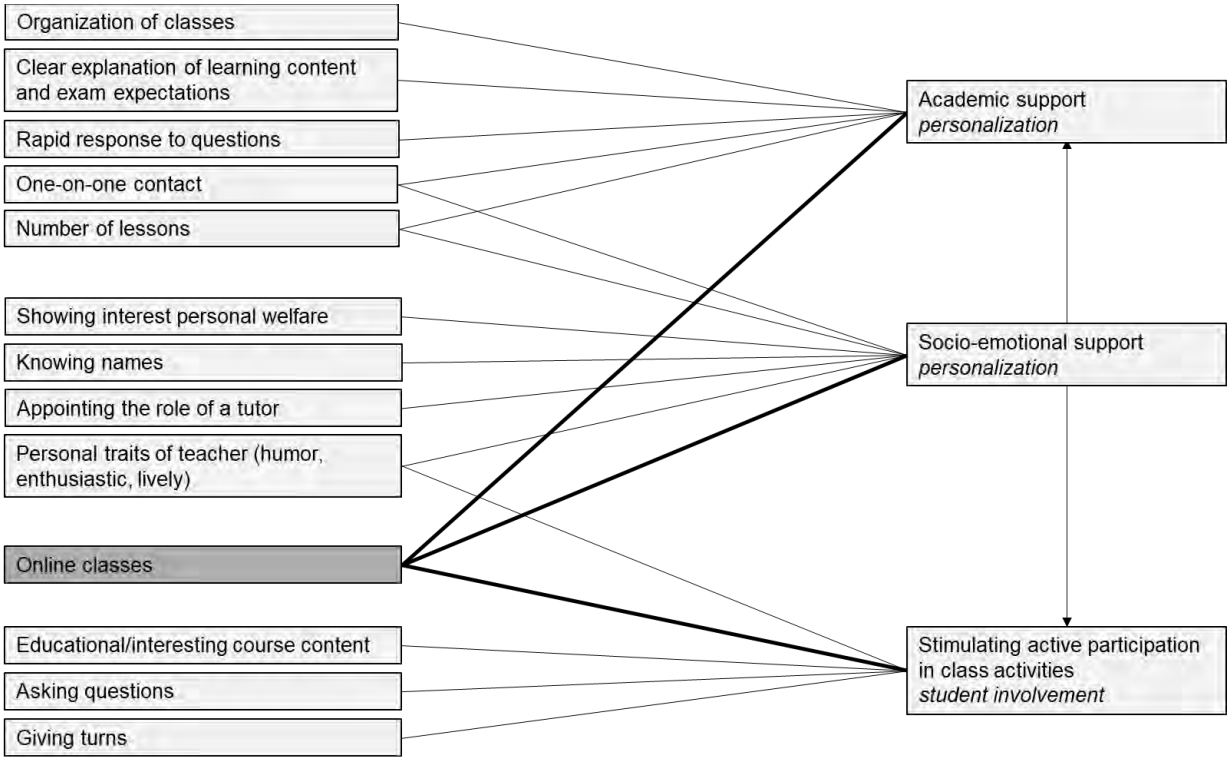
It's nice to feel free in what you want to say and then you learn the most. And yes, that you will not be held back as in: oh, when I say this, what would they think then? Or that you say unnecessary things, that you doubt yourself or whatever. (Participant K, T2)

Student-Teacher Interactions

As for peer interactions, the direction of the influence of factors on perceived value of interactions remained consistent across timepoints and participants. Therefore, Figure 2 presents an overview of factors that contribute to the perceived value of student-teacher interactions, particularly focusing on the positively valued elements knowing each other, helping each other, and active participation in class. This overview is based on data collected from all time points.

Figure 2

Overview of factors contributing to the perceived value of student-teacher interactions, incorporating data from all timepoints



Note. Factors in light grey represent a positive contribution while factors in dark grey represent a negative contribution. Factors are presented in relation to the three main positively valued aspects of student-teacher interactions: socio-emotional support, academic support and stimulating active participation in class.

As for peer interactions, online classes had a negative impact on all three valued aspects of student-teacher interactions. In addition, knowing each other indirectly influenced the other two aspects. Participants indicated that they felt more comfortable actively participating and speaking up when they knew their teacher. They also believed that the teacher's academic support aligned better with their personal needs and development when the teacher knew them well.

Yes, so if I summarise: the better the teacher knows you, the better that teacher also knows how to guide you to achieve new goals or improve new skills. (Participant A, T2)

You know, she always picks out the one who would rather not say anything or, well, like teachers can so to speak. Motivate people a little to get something out of themselves. But you also must know the students for that, so that's why I think she's good at that. (Participant A, T1)

Discussion

Our results show that interactions with peers and teachers in the FLC were positively valued when students perceived high levels of the social climate dimensions student cohesiveness (academic support and socio-emotional support from peers), student involvement (active participation in class activities) and personalisation (academic support and socio-emotional support from teacher). When students felt a personal connection with their FLC peers and teacher, they found it easier to actively participate and seek help when needed. Furthermore, students' perceptions of student cohesiveness, personalisation, and student involvement were influenced by a range of factors. Notably, online classes emerged as a significant factor that negatively impacted all these classroom climate dimensions.

Overall, students experienced an increase in student cohesiveness during the first months of the academic year, but this growth did not continue into the second semester. From the end of the first semester on, academic and socio-emotional support was hindered by reduced opportunities for contact which followed the transition to online classes, a decrease in number of lessons and the mixing of groups in other courses in the second semester. Furthermore, the level of student involvement was perceived to diminish after the switch to online classes, starting from the end of the first semester. Hence, the quality and quantity of FLC interactions stagnated or even diminished during the second semester, mainly due to the transition to online education. However, the quantitative data on quality and quantity of peer interactions at the end of the year were not low and thus did not confirm this finding. This outcome was unexpected since it is widely recognised that online education generally has a negative impact on interactions (Hebebci et al., 2020). One possible explanation is that questionnaire scores reflected the perceived quality and quantity of interactions relative to experiences in other courses and/or relative to students' own expectations. Hence, because interactions with FLC peers were perceived as more positive compared to interactions with other peers from the cohort, students may have rated the FLC interactions more positively than expected.

In contrast to the changes in perceptions and perceived value of peer interactions throughout the academic year, student-teacher interactions were perceived as positive and remained relatively stable. The only exception was the experienced socio-emotional support which showed a slight increase, particularly after one-on-one conversations between teacher and

students. Students specifically valued the approachability of the teacher, even if they did not need support.

The high questionnaire scores for the quantity and quality of informal and formal student-teacher interactions supported the findings from the interviews indicating a positive perceived value of student-teacher interactions. These scores may reflect the significant attention that FLC teachers dedicated to student's well-being during the COVID-period and thereby may highlight the crucial role of student-teacher interactions during that period. This assumption aligns with previous studies emphasizing the importance of teacher support during the COVID-period for academic and social integration (Resch et al., 2022) and learning experiences (Shin & Hickey, 2020). Due to the lack of peer relations during this period, students became highly dependent on relations with their teachers (Resch et al., 2022; Tice et al., 2021). The positive perceived value of student-teacher interactions in our study suggests that FLC teachers effectively responded to the changing needs of students during the COVID-period.

The personal connection with peers and teacher emerged as one of the most highly valued elements of the classroom climate in our study. Not only did it hold intrinsic value, but it also had an indirect influence on the other two highly valued elements of the classroom social climate: academic support and active participation. When students felt a strong personal connection with their peers and teacher, they experienced a sense of comfort within the FLC, creating an open and welcoming atmosphere. As a result, they felt more confident in seeking help and speaking up in class. Socio-emotional support thus took a core position in the perceived value of FLC interactions. These findings align with previous work emphasizing the importance of interpersonal relationships in the classroom for student motivation. Scholars such as Ryan and Deci have outlined relatedness as one of the three components of Self Determination Theory, which explains what motivates human behaviour (Ryan & Deci, 2000). Relatedness refers to the fundamental psychological need for connection and support from others. The sense of relatedness that learners feel towards their peers and teachers in the classroom, including a sense of belonging to the classroom community (Goodenow, 1993), is linked to engagement and academic motivation (Furrer & Skinner, 2003; Fedesco et al., 2019). While these affective components of learning are sometimes overlooked in higher education, our findings strongly indicate that fostering positive social relationships with peers and the teacher should be a priority in the higher education classroom.

It is important to acknowledge that our study specifically examined the classroom environment and did not encompass the broader institution. While our results demonstrate that a sense of socio-emotional support within the FLC classroom positively influenced various aspects of the

learning process, it is essential to recognise that this might not directly impact integration and sense of belonging at the institutional or study program level. To gain further insights into the impact and relevance of FLCs as a first-year initiative, future studies should explore institutional integration.

Numerous studies have highlighted the beneficial effects of positive teacher-student relationships in higher education, including increased persistence (Wilcox et al., 2005) and enhanced student learning processes (Bergin et al., 2009). Our results support these findings and emphasize the importance of fostering a positive teacher-student relationship across multiple facets of the learning experience.

Students' perceived value of peer and student-teacher interactions was influenced by a variety of factors within the classroom environment. Our data revealed that the transition to online classes hampered all valued aspects of the classroom social climate, thereby greatly impacting students' perceptions and perceived value of FLC interactions. Studies that investigated the effects of remote teaching during the COVID-period have reported a decrease in academic and social integration (Resch et al. 2022), an increased desire for a teacher-student relations and socio-emotional support, and a decline in motivation (Shin & Hickey, 2020). Our results support these findings and reveal that students experienced a decrease in active participation, academic support, and social contact with peers. On the other hand, the positive perceived value of student-teacher interactions in our study also suggests that students did perceive socio-emotional and academic support from teachers, as well as a stimulating role in active participation in online education. Nevertheless, apart from asking students about their personal well-being more frequently, teachers did not seem to use other pedagogical strategies for stimulating active participation as suggested by Thomas et al. (2022). This suggests that teachers may have fallen short in facilitating interactions in the online FLC classroom and may have played a greater role in the lack of interactions than students may have realised.

Recommendations for Future Practice

To the best of our knowledge, this is the first study that extensively explored students' perceptions and perceived value of interactions in a higher education classroom setting along with providing an overview of the factors contributing to that perceived value. Based on our results, we can infer recommendations for teachers and institutions regarding educational and pedagogical strategies that promote a positive classroom climate in both online and face-to-face settings. We delineate some key recommendations.

First, creating and facilitating a classroom that demonstrates socio-emotional and academic support should be a priority of higher education teachers and institutions, specifically in the

context of online teaching. While the recognition of the importance of relational pedagogy in higher education is growing, it is not yet widespread (Hagenauer & Volet, 2014; Pranjić, 2021). Our results suggest that supportive and caring relationships between students and teacher can be fostered through pedagogical strategies such as devoting time and effort to know students' names, unravelling their personal needs and interests (Iannarelli et al., 2010), expressing positive emotions and explicating availability for help and questions. However, it is important to note that building a supportive learning environment takes time, as observed in our study (approximately 3-4 months). Given that course periods in the Dutch higher education system typically span 8-12 weeks, creating such an environment within a single course remains a challenge. Therefore, higher education institutions should consider extending course periods or maintaining group composition across multiple courses, especially during the undergraduate year.

Second, teachers can positively influence student-student relationships, for instance, by creating opportunities for students to get to know each other during class time. This can include incorporating collaborative assignments and periodically changing groups in collaborative assignments to prevent cliquishness.

Third, to strengthen active participation, teachers should employ pedagogical methods that encourage collaboration, particularly in small groups, and utilise techniques such as asking questions and giving turns. It is essential for teachers to recognise that active participation may be more challenging in online classes and may require alternative methods to gather student input beyond verbal cues (Thomas et al., 2022).

Finally, we encourage institutions to take their responsibility and invest in supporting teachers to build an optimal classroom climate for their students. Teachers have an enormous impact on classroom interactions, but they cannot be solely held responsible for the quantity and quality of classroom interactions. Improving factors that often lie beyond the control of teachers, such as the number of lessons and pandemic-related restrictions should be on the institutional agenda. Attention to building a positive teacher-student relationship should also be an integral element in teacher training programs. This recognition is vital because a positive teacher-student relationship can enhance student learning in any classroom and should not only be seen as the responsibility of faculty mentors or tutors.

Limitations

Our study has several limitations that should be acknowledged. First, the response rate for the questionnaire was around 50% among first-year students, and these respondents were not equally distributed across the different FLC groups. As a result, there may be an under- or

overrepresentation of certain FLC groups in our data, which could introduce bias and affect the generalisability of our findings.

Second, our identification of factors influencing interactions was solely based on students' experiences and perceptions. This approach may have resulted in blind spots in our results as certain factors might not have been present in the given context or may not have been perceived by the participants. For example, previous studies identified teacher self-disclosure as a factor contributing to personal connection between students and teachers (Mazer et al., 2007). However, if the teachers in our study did not share their own experiences and stories, students may not have recognised this as valuable.

Third, we primarily focused on interactions to explore the classroom social climate, which may not provide a comprehensive insight into all dimensions of the classroom social climate. While student cohesiveness, student involvement and personalisation played central roles in shaping perceptions and perceived value of interactions in FLCs, it does not necessarily imply these dimensions are universally more important than other classroom social climate dimensions. It may well be that different educational contexts may emphasize alternative classroom social climate dimensions, such as innovation or individualism. Nonetheless, our findings do confirm that specific goals of FLCs, such as stimulating interactive learning and social connections, were achieved and that FLCs were successfully implemented.

Conclusions

Our study offers a unique insight into how students perceive interactions within an FLC classroom and identifies factors that promote or hinder a positive perceived value. It goes beyond examining the process of integration and provides insights into how to foster a positive classroom social climate, making it a useful guideline for improving educational practices. One of the key findings of our study is the importance of socio-emotional support, both in online and face-to-face classrooms. We believe that this aspect needs an increased amount of attention in higher education settings. To enhance social relations and promote a positive classroom environment, higher education systems should invest in developing strategies that effectively improve interactions and social connections in both online and traditional classroom settings.

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