First Year Students Perceived Similarity to Faculty and Student Mentors: Exploring

Feelings of Belongingness

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Abstract

A student's first semester at a new university comes with exciting and challenging experiences, which ultimately impact the level of satisfaction and motivation to obtain a degree in that learning environment. Different interpersonal factors have been proposed to influence student satisfaction in the past, such as feelings of belongingness. Mentorship programs have been suggested to have a positive impact on students as well, with student mentors being especially impacting. This research investigates how students' feelings of belongingness are influenced by their level of perceived similarity to mentors. It was hypothesised that a higher level of perceived similarity leads to a greater sense of belonging, and that a student mentor evokes this more strongly than a faculty mentor. The study used a cross-sectional, correlational, observational design to examine the proposed relationship between perceived similarity and feelings of belongingness. First-year psychology students (N=180) completed an online questionnaire. It was found that generally a high level of perceived similarity to mentors correlates with a high level of sense of belonging (p<.01), that student mentors are perceived as significantly more similar than faculty mentors (p<.01) and that the correlation of student mentor similarity to feelings of belongingness alone is significant (p<.01), while the correlation of faculty mentor similarity to feelings of belongingness alone is not (p=.337). We conclude that student mentors evoke higher levels of perceived similarity in students and therefore have a greater impact on students' feelings of belongingness. The dynamics between students and mentors, perceived similarity and the sense of belonging are discussed.

Keywords: mentoring, perceived similarity, sense of belonging, student mentors, faculty mentors

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Feelings of Belongingness

The transition to higher education is without a doubt an exciting and eventful one for first year university students. Many students decide in the first months of their first semester whether they made the right decision with their study program as well as their university. For universities, it is useful to explore factors that influence student drop out, to reduce the number of dropouts and to accomplish a higher satisfaction in their students. Different factors play a role in students' satisfaction, with interpersonal ones being especially influential (Blair, 2016) and support having a great impact on students' overall satisfaction (Maymon et al., 2019).

Mentoring is found to have a positive impact on students´ transition to university and their integration into university (Buddingtion et al., 2024; Burke, 2019). Generally, mentoring can be explained as the process of a more experienced person sharing their knowledge, experiences, and skills with someone relatively new to a field (Mullen et al., 2021). Academic mentoring influences different aspects of a students´ transition to university such as academic satisfaction, a sense of belonging, well- being, or mattering (Estudillo & Flores, 2018; Hamilton et al., 2018; Marshall et al., 2021). There are different types of academic mentorships that have been implemented and studied in a great amount of research over the last years (Lunsford, 2021). Faculty mentoring (FM) means the pairing of a student with a professor or somebody who is part of the faculty and an expert on the field (Fard et al., 2019). Meanwhile, student mentoring (SM) is the collaboration of a student and someone who is on a comparable academic level (Farid et al., 2022). SM has been accepted as being beneficial for first year students and implements many different aspects that make it a favourable type

of mentorship (Altonji et al., 2019; Casey, 2019; Dong et al., 2024; Estudillo and Flores, 2018; Marshall et al., 2018). A student mentor might have a great impact on a student especially because of a possible similarity between the student and the mentor, they might resemble each other in age, background, and interests (Arruzza et al., 2023; Mitchell et al., 2015). However, it is still unclear if, and to what extent, perceived similarity between a student and a peer mentor is in fact an influential aspect.

According to Baumeister and Leary (1995), the need to belong underpins the importance of feelings of belongingness. According to them the need to belong is a fundamental human motivation that leads humans to have a drive to form and maintain a minimum amount of lasting, positive, and significant relationships. They offer an evolutionary grounding of this need and propose it to be innate in all human beings. A lack of belongingness seems to have a great variety of negative effects on human beings, such as emotional distress, greater stress, poor health, maladaptive behaviors and unhappiness (Baumeister & Leary, 1995). This suggests that feelings of belongingness have a deeply rooted and highly meaningful purpose in human beings.

The present study aims to explore what style of mentoring, FM or SM, creates a higher perceived similarity in students and whether this has an influence on feelings of belongingness. Hence, a link between perceived similarity and feelings of belongingness will be explored.

Perceived Similarity

In this paper, perceived similarity means the degree to which students feel like they are like their student or faculty mentor. This similarity can be about multiple characteristics such as age, ethnicity, educational background, personality, attitudes and many more. Past

research supports the importance of similarity between a mentor and a mentee (Lankau et al., 2005). Perceived similarity has been found to be a consistent predictor of positive mentoring experiences (Mitchell et al., 2015) and positive outcomes on the learning environment have been suggested to increase with high perceived similarity to mentors in any university context (Pedersen et al., 2024). Research by Pedersen et al. (2022) supports this finding while looking at the similarity and contact frequency between mentors and mentees in Hispanic undergraduates. It was found that a higher perceived psychological similarity between mentor and mentee is related to higher levels of social support and relationship satisfaction, Hispanic students with a Hispanic mentor reported higher levels of satisfaction than Hispanic students with a non-Hispanic mentor (Pedersen et al., 2022).

Interestingly, Neuwirth et al. (2017) conducted a study on the `Mentoring for Migrants program` which led them to conclude that objective similarity between mentee and mentor, such as sex, age, ethnicity, and vocational background, had no effect on positive mentoring outcomes. However, subjective perceived similarity, such as shared attitudes, have a positive effect on mentoring outcomes. Furthermore, research has found that psychological similarity between mentor and mentee is the key to forming high-quality mentoring relationships (Hernandez et al., 2023). Hernandez et al. found that perceived psychological similarity between mentors and mentees has both short and long-term effects on the quality of the mentoring relationship.

A great variety of past research supports the importance of similarity between a mentor and a mentee (D'Souza et al., 2019; Lankau et al., 2005). However, similarity between a mentor and a mentee has been mostly looked at in the context of STEM and medical institutions such as nursing programs. Arruzza et al. (2023) looked at the concept of Near-peer mentoring in a nursing context and what effect it has on the learning outcomes of a

mentee. Near-peer mentoring means the pairing of a mentor with a mentee who has had recent experiences in the same social, geographical, and educational context. In their research it was found that not only does near-peer mentoring cause less anxiety for mentees in the learning environment, but it also helps facilitate the development of real friendships between mentor and mentee while adding the mentor to the emotional support system of the mentee (Arruzza et al., 2023).

In the past the focus has mostly been put on underrepresented groups in very specific fields of expertise. Hence, more research is needed to investigate whether high perceived similarity between mentor and mentee also has a positive effect in a more general classroom context for first-year university students. Also, past research has often focused on the impact psychological similarity has on the quality of the relationship between mentor and mentee (Pedersen et al., 2022), to take this a step further we will look at whether perceived similarity influences a mentee's feelings of belongingness to a classroom.

Feeling of Belongingness

Sense of belonging is a fundamental human need that can be described as a subjective feeling of deep connection with social groups, physical places, and individual and collective experiences (Strayhorn et al., 2018). Allen et al. (2022) propose that feelings of belongingness predict numerous mental, physical, social, economic, and behavioural outcomes. The feeling of belongingness is a widely researched concept in the context of school or university environments. In this context, feeling of belongingness is described as a students' sense of being valued, included, and accepted at university (Bentrim et al., 2023). A sense of belonging has been found to be positively linked to a student's aspirations, achievements and whether they stay at their school or decide to drop out (Strayhorn, 2018). A

literature review by Singer et al. (2022) found that belongingness is an important concept that supports positive learning experiences and an increased satisfaction of undergraduate students.

Past research has also investigated that there are negative consequences of low feelings of belongingness in students. Syed et al. 2021 conducted a study in which they compared student's feelings of belongingness to their school with their use of non-prescribed opioids. The findings suggested that low school belongingness is associated with high use of opioids (Seyed et al., 2021). Research by Palmer et al. (2009) even explores the idea that a low sense of belongingness in first year college students might be a predictor for college dropout.

Therefore, a feeling of belongingness should be acknowledged as an important factor in a first-year student´s transition to university and the different aspects leading to a sense of belonging should be explored. So far there is little significant past research supporting that perceived similarity between mentors and mentees causes a sense of belongingness. We will focus on what type of mentoring correlates with perceived similarity the strongest and how this has an impact on feelings of belongingness.

Current Study

The current research investigates the effect of perceived similarity from differing types of mentors on feelings of belongingness, specifically whether there is a significant difference between a student mentors' impact and a faculty mentors' impact. In the past, SM has been found to be beneficial for students with positive impacts on the relationship between mentor and mentee and on the learning environment in general. A reason for this might be a higher perceived similarity between first year students and a student mentor. Hence, faculty

and student mentors are expected to evoke different levels of perceived similarities between first year students and themselves. Psychological similarity between mentor and mentee has positive effects on a first-year students overall satisfaction level (Pedersen et al., 2024). One important concept that plays a role in students' satisfaction is their sense of belongingness, a feeling of connection to the classroom.

The goal of the study is to examine whether faculty or student mentors evoke higher perceived similarity in first year students and whether this perceived similarity has an effect on first year students' feelings of belongingness. Hence it will be explored whether a faculty mentor or a student mentor has a stronger effect on feelings of belongingness to the class.

The following hypotheses are suggested for this study:

H1: The perceived similarity between a first-year student and a mentor has an effect on the first-year students' feeling of belongingness to the class.

H2: Perceived similarity is higher between a first-year student and the peer mentor than a first-year student and the faculty mentor.

H2a: The peer mentor has a stronger effect on first year students' feelings of belongingness than the faculty mentor.

Method

Participants

To be eligible, participants had to be psychology students at the University of Groningen, who are currently enrolled in a first-year practical course where they have a student and faculty mentor. Participants were recruited using a convenience sampling method as the study was part of the SONA program, where students get credits for a university

course in return for engaging in research. Additionally, participants were recruited using a snowball sampling method where students referred each other to fill out the questionnaire which was available on Qualtrics (Qualtrics, Provo, UT). In order to achieve the desired sample size, the link to the Qualtrics survey was shared in social media groups that included the target group. Initially, our study involved 224 participants, of whom 44 were excluded. Among the excluded participants, 21 were omitted because they did not complete the survey, seven did not meet the inclusion criteria, two were previews submitted by our team, and the remaining 13 individuals were excluded due to not allocating sufficient time to complete the survey (i.e., less than 500 seconds). A final of 180 participants were included in the study, out of which 127 identified as female, 47 as male, two as other, two preferred not to share this information, and the remaining two skipped the question. The minimum age in our sample is 17, while the oldest participant is 35 years old *(M = 19.77, SD = 1.96)*. Furthermore, the participants were asked to share their nationalities with 117 of them stating to be Dutch, 17 stating to be German, and 46 belonging to another culture.

Material

The study included eight scales in total. This paper was a part of a larger project for the bachelor thesis.

Sense of Belonging

To gauge students' sense of belonging within their class, we utilised the Classroom Community Scale (CCS), adopted from Rovai (2002). While this instrument originally comprised two subscales, the Learning subscale and the Connectedness subscale, we focus solely on the latter subscale in this study. Through a process of face validity assessment, it was determined that isolating the Connectedness subscale better aligns with the objectives of our project. A total of 10 items were employed to evaluate students' sense of belonging,

including statements such as "I feel connected to others in this course", "I feel uncertain about others in this course", "I feel confident that others will support me". Each item was rated using a 5-point Likert scale, ranging from *strongly disagree* to *strongly agree*. Overall, the CCS is regarded as an instrument that reliably measures students´ sense of belonging, yielding an alpha coefficient of 0.86 in this project.

Similarity

To measure students' level of perceived similarity to their student mentor we used two items: "I recognize something of myself in my student mentor" and "I think I am similar in some ways to my student mentor". To measure student's level of perceived similarity to their faculty mentor we also used two items: "I recognize something of myself in my faculty mentor" and "I think I am similar in some ways to my faculty mentor". All items were rated using a 7-point Likert scale, ranging from *strongly disagree* to *strongly agree*. The Cronbach's-alpha is 0.83.

Procedure

This study used a cross-sectional, correlational, observational design to examine the proposed relationship between perceived similarity and feelings of belongingness. This study was part of a larger bachelor thesis project and was approved by the Faculty Ethics Committee. Data were collected via an online survey created by Qualtrics (Qualtrics, Provo, UT). Students were invited to participate in the research on the SONA system (Sona Systems, n.d.) or via Qualtrics directly. Initially, the survey was only available through the SONA project. However, to reach the desired sample size, we relied on the snowball sampling method and shared the Qualtrics link with the groups of students who matched our inclusion criteria. The choice to participate was voluntary and there was no monetary

compensation. The only remuneration involved was for students who accessed the survey through SONA as they received credits required to pass a course.

The primary prerequisite for participation was that participants had to confirm that they were psychology students enrolled in the Academic Skills course. Only those who met this requirement were able to proceed, and those who did not were redirected to the end of the survey. Before commencing the questionnaire, participants were presented with detailed information regarding the study's objectives and procedures. They received information outlining the research's aim to investigate participants' perceptions of mentoring experiences and personal values. Participation in the research was voluntary, and participants' informed consent was required. They were encouraged to carefully read the provided information and to address any questions before providing consent. Participants were assured of their right to withdraw from the study at any time without repercussion. Upon consenting, participants were then asked to provide demographic information such as gender, nationality, and age, before proceeding to complete a series of questionnaires covering topics such as perceptions of mentoring in the Academic Skills course. Each participant filled out the same questionnaire in a fixed order and the estimated completion time for the questionnaire was approximately 20 - 30 minutes. At the end of the questionnaire, the participants were thanked for their time.

Results

Descriptive Statistics

In Table 1 Pearson's correlations, standard deviations, and means between the variable for the category peer mentors and for the category student mentors are shown.

Table 1

Pearson's correlation, standard deviations, and means of the variable for student mentor

	1.	*2.*	*3.*	*Mean*	*SD*
1. Feelings of Belongingness	-			*32.71*	*5.99*
2. Similarity SM	*.26***	-		*9.07*	*2.91*
3. Similarity FM	*.05*	*.39***	-	*7.26*	*2.98*

Note. N= 177

** Correlation is significant at the 0.01 level (2-tailed).

Regression Analysis

A regression analysis was conducted to investigate the overall effect of a student's perceived similarity to their mentor on feelings of belongingness. All assumptions for a regression analysis have been met. Overall, a significant model supporting a positive effect of increased perceived similarity to mentors on feelings of belongingness was found (*F (2,17) = 7.58; p < 0.01*). This finding supports hypothesis 1.

H1: The perceived similarity between a first-year student and a mentor has an effect on a first-year students feeling of belongingness to class.

The findings suggest that perceived similarity to the student mentor alone has a significant effect on feelings of belongingness (*Beta = .30, 95% CI = [0.30; 0.94], t = 3.83; p < 0.01*). The findings suggest that perceived similarity to the faculty mentor alone has no significant effect on feelings of belongingness (*Beta = -.07, 95% CI = [-0.45; 0.17], t = -0.89; p = .38*). A paired samples t-test was conducted to investigate the difference between the level of perceived similarity to student mentors (*M = 9.07, SD = 2.91)* and perceived similarity to faculty mentors (*M = 7.26, SD = 2.98*). The results indicated that there was a

significant difference between the groups ($t\ (176) = 7.43;\ p < 0.01$), suggesting that the mean score for student mentors is significantly higher than the one for faculty mentors. Hence, hypothesis 2 and hypothesis 2a are supported.

H2: Perceived similarity is higher between a first-year student and the peer mentor than a first-year student and the faculty mentor.

H2a: The peer mentor has a stronger effect on first year students' feelings of belongingness than the faculty mentor.

Discussion

The present study aimed to explore the relationship between first-year university students' perceived similarity to their mentors, in a first-year practical course, and their feelings of belongingness to that classroom. It was hypothesised that a higher degree of perceived similarity between student and mentor predicts a higher sense of belonging in the student. This idea is supported by the findings of our research. Furthermore, it was hypothesised that students' perceived similarity is higher regarding their student mentor than regarding their faculty mentor, which has also been supported by our results. Lastly, it was proposed that a student mentor has a greater impact on a student's sense of belonging, than a faculty mentor. We have found support for this claim as well. Our findings imply interesting questions and proposals about the dynamics between students and their mentors, as well as about the dynamics between perceived similarity and its effect on a sense of belonging, which has been found to be innate and of great significance in the past (Baumeister & Leary, 1995). In the following paragraphs our findings, their implications and limitations will be discussed.

Theoretical Implications

When looking at hypothesis 1, our research supports the idea that the perceived similarity between a first-year student and their mentors has an effect on the students' feelings of belongingness. Increased perceived similarity positively correlates with greater feelings of belongingness. This finding is in line with past research that suggested perceived similarity to be a predictor of positive mentoring experiences (Mitchell et al., 2015). Mentoring has been widely identified as an important predictor of students' academic satisfaction, including their sense of belonging to the classroom and the university (Estudillo & Flores, 2018; Hamilton et al., 2018; Marshall et al., 2021). Up until now, there is little research on whether similarity causes a greater sense of belonging specifically, though similarity has been found to have an effect on a great variety of positive learning outcomes (D'Souza et al., 2019; Lankau et al., 2005). Our findings suggest a positive link between similarity to one's mentor and a sense of belonging. As proposed by Baumeister and Leary (1995) feelings of belongingness can be defined as an innate fundamental human motivation, which emphasizes its significance for well-being and satisfaction.

Regarding hypothesis 2, our findings suggest students feel more similar to their student mentor than to their faculty mentor. This finding helps connect the dots of past research linking high perceived similarity to positive learning outcomes (D'Souza et al., 2019), as well as emphasising student mentorships as a preferred model of mentoring (Altonji et al., 2019; Estudillo and Flores, 2018; Marshall et al., 2018).

When considering hypothesis 2A, findings of this study suggest that student mentors do in fact have a greater impact on students' sense of belongingness than faculty mentors. As this study advocates, a student mentor offers higher similarity to students which in turn seems to favour greater satisfaction of the student, here operationalized by sense of belonging. Past research proposes that students are successful and satisfied when paired with a mentor who has had the same recent experiences in social, geographical and educational contexts as

themselves (Arruzza et al., 2023; Pedersen et al., 2022). Hence, both kinds of mentor relationships might have a positive impact on students, but when it comes to a sense of belonging, the student mentor, as someone who has had the same recent experiences as the students, seems to have a greater influence.

Practical Implications

This paper emphasizes the importance of student mentors for university students' satisfaction. Our findings suggest that a student who is matched with a mentor who resembles him or herself, feels a higher sense of belonging to the classroom and therefore perhaps to the entire university. Especially for first-year students it is vitally important to feel comfortable at a new university. Students need to feel that they belong to the university and to the study program that they picked for themselves. Universities need to be aware of the impact that mentorship has on the satisfaction of students and how the matching of students with mentors similar to themselves, can ease the transition to university for first-year students and even reduce dropout.

This study proposes the importance of practical first-year courses, where one student mentor is teaching a small number of students, which gives students the opportunity to identify with their mentor. Universities should make sure that they offer student mentorship to all students and that the student mentors are chosen wisely, as they should resemble the students in various aspects, to increase similarity. Student mentors should be aware of the great impact that they can have on their students regarding their sense of belongingness, which can prove as a predictor for overall students' satisfaction and low dropout rates from the university and the specific study program.

In line with this, universities could increase their efforts in the process of matching a mentor with a group of students. Both parties could be asked to fill out a questionnaire before

the beginning of a course, so that students can be placed with a mentor that has similar interests, attitudes and perhaps a similar background.

Limitations

Participants of this study were recruited using a convenience sampling method from a population of first-year psychology students following the specific first year practical course "Academic skills" at the University of Groningen. The generalizability to other universities, departments and older students would be interesting to investigate. However, as findings might not be replicable among more advanced students, one must keep in mind that great feelings of belongingness might be important especially to first year students, as they are navigating through a university environment that is new to them.

The sample in this study can be described as western, educated, industrialized, rich and democratic (WEIRD). The participants of this study are predominantly matching the stereotype of WEIRD participants, which leads one to question the findings generalizability to other cultures and locations. In past research there have been crucial differences especially between individualistic and collectivistic cultures regarding student mentors' characteristics, teaching styles, ambitions and environmental influences (Moses et al., 2019; Nguyen, 2022). However, this sample of mostly WEIRD participants represents the population of first year psychology students at the University of Groningen well.

The survey in this study was posted online and was accessible for first year psychology students through the university's SONA platform. First year psychology students at the University of Groningen are required to collect a set amount of SONA credits, to successfully end their first year of the study program. Hence it can be questioned whether the participants of this study took the survey seriously and filled them out in a thorough manner.

However, since all participants were psychology students at the University of Groningen themselves, they are expected to be aware of the importance of high-quality research.

The results of this study are based on correlations and a regression analysis. Therefore, a positive correlation between the variables is implied, however there is no support for a causal relationship. To draw causal conclusions of the relationship between the factors perceived similarity and feelings of belongingness, one could manipulate the degrees of mentor's similarity in an experimental design. Even though a causal relationship cannot be suggested by our findings, a significant relationship between the variables is strongly supported.

Future Research

Future research could investigate what factors specifically make a student perceive a mentor as similar to oneself. Multiple studies support the suggestion that similarities in educational background, social and geographical context promote a positive mentoring experience (Arruzza et al, 2023; Pederson et al., 2022). Contradicting, past research suggests that it is not objective similarity between mentors and students that has an impact, but the subjective similarity between the two, such as shared attitudes (Neuwirth et al., 2017). Research is needed to investigate what kind of similarity, that is objective or subjective/ psychological similarity, has the greatest impact on positive outcomes in mentorship experiences.

As suggested by our findings as well as past research, SM is a favorable type of mentorship (Altonji et al., 2019; Estudillo and Flores, 2018; Marshall et al., 2018). We have found support for the claim that students perceive their student mentor as more similar to themselves than their faculty mentor, which helps explain why positive learning experiences are often connected to SM. However, there is still room for speculations as to why students

perceive their student mentor as more similar than their faculty mentor. Future research is needed, to identify possible aspects of student mentors that make them so similar to their students. For example, universities could consider mentors and students characteristics and background information in the process of matching a specific mentor with a specific group of students. Is there overlap in students and mentors' characteristics and background that predominantly occurs and might therefore disclose factors that lead to perceived similarity? Furthermore, factors as to why students perceive their student mentor as more similar need to be explored. Student mentors might simply seem less formal to their students and contact might be easier accessible with less feelings of interpersonal distance (Quinlan et al., 2019).

We have found that perceived similarity is positively correlated with greater feelings of belongingness, which is in line with past findings proposing that similarity between mentors and mentees leads to a variety of positive learning outcomes (Lankau et al., 2005). Future research might investigate, what aspects shape the sense of belongingness of a student to his or her classroom and university, and what part mentor similarity plays in this. Causal experiments, in which the levels or similarity are manipulated, might reveal whether sense of belongingness is affected by the manipulations. Mediation analysis could explore factors that mediate the relationship between similarity and belongingness, to possibly explain why similarity leads to belongingness.

Feelings of belongingness have been proposed to be of importance for an individual's satisfaction and well-being (Baumeister & Leary, 1995). It is still unclear whether this can be translated in the university context. Future research should explore the effect of a high level of sense of belonging in university students, in order to investigate whether a high sense of belonging also predicts higher satisfaction and if this has an effect on academic outcomes, as for example the chance of drop out.

Conclusion

In conclusion, this study examined whether perceived similarity to mentors has an effect on students' feelings of belongingness to their classroom, and whether perceived similarity is higher to student mentors than to faculty mentors. Support was found for the suggestion that students perceive themselves as more similar to their student mentors compared to their faculty mentors. Support was also found for the suggestion that higher perceived similarity to mentors goes in hand with a greater sense of belonging. The correlation between perceived similarity and belongingness is highest when solely looking at student mentor similarity. Hence it has been supported, that student mentors have a greater influence on a student's sense of belongingness, than faculty mentors do. Universities should be aware of the influence that student mentors take on their student's satisfaction, and SM should be valued and made accessible to all university students.

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