Examining Soft Outcomes: The Effect of Mentor Approachability on Student Belonging and Intellectual Risk Taking Behavior

Katrine Marit Stokke

s4612515

Department of Psychology, University of Groningen

PSB3E-BT15: Bachelor Thesis

Group 14

Supervisor: Dr. Stacey Donofrio

Second evaluator: Prof. Dr. R.R. Meijer

In collaboration with: Nives Mandic, Ale Siebert, Sasha Nicole Correa, Luisa Staege,

Maximilian Gebauer.

June 30, 2024

A thesis is an aptitude test for students. The approval of the thesis is proof that the student has sufficient research and reporting skills to graduate, but does not guarantee the quality of the research and the results of the research as such, and the thesis is therefore not necessarily suitable to be used as an academic source to refer to. If you would like to know more about the research discussed in this thesis and any publications based on it, to which you could refer, please contact the supervisor mentioned

Abstract

In this study, we examined the effect of mentoring programs on student outcomes, specifically the effect of peer mentor and faculty mentor approachability on their students' feeling of belongingness in the classroom and their engagement in Intellectual Risk Taking behavior (IRT). We implemented a cross-sectional, correlational, observational design within a psychology student sample. Our findings showed that students perceived both student and faculty mentors as similarly approachable. When students perceived their peer mentor as approachable, it seems to have had a positive effect on their feeling of belongingness. Conversely, faculty mentor approachability had no effect on student belongingness. Neither student nor faculty mentor approachability had an effect on their students' IRT. The generalizability of our findings is limited since our sample consists of only students from the University of Groningen, but they still give valuable insight into the mentor-student relationship found in mentor programs across universities. Further implications are discussed in the paper.

Keywords: peer mentor, faculty mentor, mentor, mentor approachability, intellectual risk taking, feeling of belongingness

Examining Soft Outcomes: The Effect of Mentor Approachability on Student Belonging

and Intellectual Risk Taking Behavior

Many students' first-year university experience begins with the move to a new city, where they face the struggles of living alone, finding new friends, and the challenges of starting a university degree (Worsley et al., 2021). This transition period is typically characterized by distress, pressure to adjust and, consequently, academic struggle (Poyrazli & Kavanaugh, 2006). To help students overcome these challenges, universities often implement mentoring programs, typically involving a faculty member who supports a selected group of students academically and emotionally (Avinger, 2021). Mentors typically meet with the students about twice a week to facilitate their learning and university experience by providing support, advice, and guidance (Yomotov et al., 2015).

These mentoring programs often include both a mentor from the staff of the university, typically older and with expertise in the field, and peer mentors, who are of similar age and often students themselves. Mentors commonly share similar experiences with the students, however, the peer mentors in particular might more easily relate to the struggles of the students, both academically and interpersonally (Bonin, 2013). As such, the distinction between faculty and peer mentors appears to be significant, but research directly comparing the two is scarce. Thus, in our study we examine the two types of mentors and the differences of their influence on student behavior.

Mentoring can be of great benefit to students when done effectively. It has been shown that mentoring can support students' career development and positively impact their psychosocial well-being (Retallick & Pate, 2009). Additionally, a positive relationship between a student and their mentor is associated with increased academic motivation and participation in

class, indicating the important role mentors play in their students' lives (Jasmi & Hin, 2014; Snowden & Hardy, 2012). When mentors create an environment where their students feel comfortable and supported, they, even if already successful, are more likely to engage within the classroom and benefit from the experience to a greater extent (Bonin, 2013; Inda-Caro et al., 2019). A safe classroom that fosters mutual respect and nurtures self-esteem often subsequently leads to facilitated learning in students (Inda-Caro et al., 2019). Not only does mentoring impact student behavior in the classroom, it also often positively affects psychosocial aspects of their lives (Smith et al., 2021), such as interpersonal relationships between the students, as well as between students and their schools (Glazzard et al., 2021). Additionally, it can lead to improved social confidence, greater general well-being and positivity in day-to-day life (Glazzard et al., 2021; Liu et al., 2023). To encourage mentors to create a positive environment for their students to flourish in, studying what specific variables contribute to it is of great value.

Mentor Approachability

One key aspect of effective mentorship is the mentor's approachability (Melanson, 2013). It has been previously defined as "specific behaviors reflecting concern for students" (Denzine & Pulos, 2000, p. 1), including their responsiveness to students' needs (Chopra et al., 2018). It involves, for example, informal contact and direct assistance, which are seen as some of the key functions contributing to a successful mentoring experience (Retallick & Pate, 2009). According to Hagendauer & Volet (2014), a teacher is deemed highly approachable if they, for instance, frequently smile at the students and know their names. Conversely, an unapproachable teacher is characterized by behaviors such as talking down to students and appearing bored during teaching. An approachable mentor fosters a healthy, encouraging environment that leads to effective teaching, improved student outcomes, and a stronger connectedness to the university

(Hagendauer & Volet, 2014; Hall, 2017). Jasmi & Hin (2014) found that teachers who prioritized being accessible to their students had a positive impact on the student's confidence in asking questions. When students perceive their teachers as approachable, their willingness to rely on them for support increases (Hall, 2017; Ostermann, 2000). Therefore, by prioritizing the development of approachable mentor-student relationships, universities can support students' academic success by fostering a safe environment and meeting the student's emotional needs, especially within the transition period of their first year.

There has been limited research about the differences between faculty and peer mentor approachability, but it has been shown that students experience difficulty in approaching faculty members and that "traditional aged students" (Bonnet & McAlexander, 2012, p. 74) have an easier time approaching people their own age (Bonnet & McAlexander, 2012; Denzine & Pulos, 2000). The impressions people make of others are often determined by visible characteristics like age, height, and attractiveness (Montepare, 1995), with attractiveness often being based on similarity (Klohnen & Luo, 2003). Considering that peer mentors typically share a similar age and experience with their students, this paper therefore assumes that peer mentors will seem more approachable to students than their faculty mentors.

Belongingness

The subjective feeling of belongingness is an important factor in student behavior, especially in first-year students who have often moved away from home for the first time. Belongingness, or "relatedness, sense of community, sense of school or classroom membership, support and acceptance" (Ostermann, 2000, p. 21), is when a person in a group feels as though its members can provide for their socioemotional needs and make them feel important and cared for. A sense of inclusion and connectedness can generally lead to an increase in happiness and

calmness, as well as a decrease in emotional distress and suicidality (Ostermann, 2000). Palmer et al. (2009) touches upon a certain "in-between-ness" that comes from existing in-between two places, in the case of first-year students between home and university, which might lead to a lack of belonging. It is pivotal to mitigate this deficit, as the need to belong is theorized to be one of the fundamental human motivations and is connected to general, as well as academic, well-being (Hagendauer & Volet, 2014; Ostermann, 2000). Relationships fulfilling this need not only include student-on-student friendships—the significance of the mentor-student relationship cannot be underestimated. For instance, Ostermann (2000) examined the connections between student relationships and measures of academic outcomes and found the strongest correlation between student-teacher relationships and student engagement.

Helping the students develop a sense of connection facilitates their adjustment to the new university environment (Bonin, 2013). It is a key factor in keeping students enrolled, engaged, and successful in university (Ostermann, 2000; Yomotov et al., 2015). Particularly during the first year of studying, implementing a mentoring program is an important step toward increasing students' positive connection to and involvement with the university (Ostermann, 2000; Smith et al., 2021; Yomotov et al., 2015). This "positive academic identity" (Soutter & Clark, 2023, p. 509) can lead to improved student outcomes and academic achievement (Soutter & Clark, 2023, Yomotov et al., 2015). Additionally, belongingness is also an important factor in strengthening student well-being in general, as well as students' sense of social competence (Ostermann, 2000). Ploskonka and Servaty-Seib (2015) provide evidence for a sense of belonging as a mediator between perceived burdensomeness and suicidal ideation, indicating that in the presence of belongingness, burdensomeness alone does not have a direct effect on suicidal ideation. This emphasizes the wider implications of belongingness in its potential to enhance

overall well-being. Moreover, Ostermann (2000) found that students who were guided to establish connections with each other (i.e fostering belongingness) had a greater ability to engage in Intellectual Risk Taking Behavior (IRT), which is demonstrated by students' lack of fear of making mistakes in the classroom and speaking out in front of their peers without fear of judgment (Clark & Soutter, 2022). Students were less likely to ask questions or express unpopular ideas in a class where they did not know anyone, suggesting that belongingness and IRT may be interconnected variables.

Intellectual Risk-Taking Behavior

Studies have shown that mentoring programs influence learning by facilitating participation and feelings of engagement in students (Snowden & Hardy, 2012; Yomotov et al., 2015). Part of the positive learning environment the mentors aim to build is creating a "culture of error" (Soutter & Clark, 2023, p. 509), which not only allows but actively encourages students to make mistakes and take risks in their approach to learning (Liu et al., 2023). This is reflected in IRT, an important aspect of student participation (Gaziantep University et al., 2014). Opposed to other risk-taking behaviors, IRT is considered adaptive, meaning that it may lead to desirable outcomes (Beghetto, 2009). Students might consider it risky if they fear possible unwanted consequences, including judgment from their peers, or feeling inferior. Previous research highlights the importance of IRT regarding student academic outcomes (Beghetto, 2009; Clark & Soutter, 2022) and a mindset that views mistakes not as failures, but as opportunities to grow (Soutter & Clark, 2023). Students who engage in IRT in class show increased participation, have more fun learning, and are more motivated (Gaziantep University et al., 2014; Soutter & Clark, 2023).

All in all, there have been many positive outcomes found to be associated with IRT, however, there has been less research conducted about how to foster a classroom that facilitates this type of student behavior as a teacher or mentor (Soutter & Clark, 2023). It is important to create a safe environment in which students feel comfortable in order to encourage risk-taking and active engagement in class (Clark & Soutter, 2022). Specifically, peer mentoring is suggested to make students feel more comfortable and supported in their university, and consequently increases the students' feeling of engagement and belonging in class (Yomotov et al., 2015). When they perceive their teachers as supportive, students are more likely to engage in IRT, and if they seem dismissive and unwelcoming, they are less likely to do so (Beghetto, 2009). Students should be shown that taking part in IRT is a worthwhile endeavor.

Our Study

While previous studies have examined mentoring at schools and universities, the specific factors within mentor behavior that lead to increased student achievement are not well understood (Bonin, 2013; Hagendauer & Volet, 2014). Therefore, more research into the mentor-student relationship is needed to address this gap. Building an effective training program for mentors is pivotal, therefore it is important to investigate some of the ways in which to improve student outcomes. Light should be shed on the specific mentoring behaviors and their subsequent influence on student behaviors, as well as the difference between the effects of a peer mentor and a faculty mentor.

Current examinations of the first-year experience emphasize "hard" academic student outcomes, such as drop-out rates and grades (Inda-Caro et al., 2019), which include more easily measurable and more objective variables (Zepke & Leach, 2010). It can be seen that the focus lies on academic success, rather than students' socioemotional needs (Ostermann, 2000). Instead,

we are looking at so-called "soft" outcomes, which measure success subjectively, based on the students' perception of their learning achievements. Even though hard academic outcomes are important to examine, soft outcomes should not be overlooked, as they reflect students' experiences and useful skills gained during the learning process (Zepke & Leach, 2010). Soft student outcomes may also lead to hard student outcomes. The findings of Ostermann (2000) for example, supported the notion that a sense of belonging (a "soft" outcome) has a positive effect on student success (a "hard" outcome) through the former's influence on engagement. It has been shown that peer mentoring programs reduce drop-out rates by, for instance, helping new students adapt to their new environment (Smith et al., 2021), as well as improving and maintaining higher grades (Bonin, 2013). This demonstrates that through examining soft student outcomes, ways to increase student enjoyment and adaptation can be identified, potentially resulting in improved hard student outcomes such as academic success.

The current study aims to understand the impact of mentor approachability on student behavior and belongingness and to answer how the approachability of peer mentors versus faculty mentors influences undergraduate students' engagement in intellectual risk-taking behavior and student belongingness to their class. Three hypotheses were derived for the study from the literature regarding the effect of mentors on student behavior:

H1: The students will perceive their peer mentors as more approachable than the faculty mentors.

H2: Peer mentor approachability will be a stronger predictor of student belongingness than faculty mentor approachability.

H3: Peer mentor approachability will be a stronger predictor of student intellectual risk taking behavior than faculty mentor approachability.

Methods

Participants

To be eligible, participants had to be psychology students at the University of Groningen who are currently taking the Academic Skills course, and therefore have a peer and a faculty mentor. The course consists mainly of first-year students. Participants were recruited using a convenience sampling method as the study was part of the SONA program, through which students gain credits within a university course in return for participating in research (Sona Systems, n.d.). Additionally, participants were recruited using a snowball sampling method in which students referred other students 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. Our study included a total of 221 participants, out of which 41 entries were excluded because they either were not enrolled into the Academic Skills course or failed to provide sufficient data. A final count of 180 participants was included in the study, out of which 47 identified as male (26.1%), 127 as female (70.6%), and the rest as other or preferred not to say (2.2%). The minimum age in our sample was 17, while the oldest participant was 35 years old *(M = 19.8)*. Furthermore, the participants were asked to share their nationalities with 117 of them being Dutch (65%), 17 German (9.4%), and 46 belonging to another nationality (25.6%).

Material

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

Approachability

To assess students' perceptions of approachability exhibited by both faculty and peer mentors, the Instructor Accessibility Scale from Bippus et al. (2001) was employed. Through a process of face validity assessment, we determined that isolating the Instructor Discouragement subscale better aligns with the objectives of our project. As the total questionnaire exceeded the desired length, it was checked for repetitiveness and two items were eliminated based on face validity, leaving a total of 5 items to be assessed. Examples of items include statements such as "My teacher seems impatient about interacting with students outside of class", "I find it difficult to approach my teacher outside of class", and "My teacher seems distant when interacting with students outside of class". For a comprehensive overview of the scale, the reader can consult Appendix A. The approachability items were presented once regarding each mentor type to enable separate assessments of faculty and peer mentors' approachability behaviors. Responses were recorded using a 5-point Likert scale, ranging from *strongly disagree* to *strongly agree*. Overall, the Instructor Accessibility Scale is regarded as an instrument that reliably measures students´ sense of belonging, yielding a reliability of $a = 0.87$ regarding peer mentor approachability in this project, and a reliability of $a = 0.92$ for faculty mentor approachability.

Sense of Belonging

To gauge students' sense of belonging within their class, we utilized the Classroom Community Scale (CCS), adopted from Rovai (2002). While this instrument originally consisted of 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". Additional items can be found in Appendix B. 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 a reliability of $a = 0.86$ in this project.

Intellectual risk-taking

A 5-point Likert scale was used to assess students' IRT in class, with 5 items ranging from *definitely not* to *definitely yes*. It was taken from the study by Beghetto (2009). Statements such as "In class, I like doing new things even if I am not very good at them", "In class, I try to learn new things even if I might make mistakes", and "In class, I ask questions even if other students will think I am not as smart as them" were included. Higher scores denote more IRT behavior. Further items assessing students' IRT can be found in Appendix C. The reliability is $a = 0.8$.

Procedure

This study used a cross-sectional, correlational, observational design to examine the proposed relationship between student belongingness and IRT, as well as mentor approachability and IRT. This study was part of a larger Bachelor Thesis project and was approved by the Faculty Ethics Committee. Data was 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.), through which students have to earn a certain amount of points to pass a course, 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 questionnaire link with the groups of students who matched our inclusion criteria. The choice to participate was voluntary and there was no monetary compensation.

The primary prerequisite for participation was that participants had to confirm that they were psychology students enrolled in the Academic Skills course. 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. 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 mins. At the end of the questionnaire, the participants were thanked for their time.

Results

A statistical analysis using the software SPSS was conducted to explore the hypotheses. To examine these hypotheses, a linear regression analysis was employed and we used an alpha level of .05 for all statistical tests.

Assumption Checks

Before conducting our data analysis, we checked the assumptions that allowed us to analyze the data. The assumptions were met, therefore the following chosen analyses were valid.

Descriptive Statistics

The standard deviations and means of the variables are shown in Table 1. The possible range of scores on the approachability scale was 5-25. The means of student and faculty mentors are both fairly high, suggesting that students view both mentors as highly approachable.

Table 1

Descriptive Statistics and Correlations

	1	2	3	*M*	*SD*
1. FMApproachability	-			21.2	4.08
2. PMApproachability	.622*	-		20.97	3.76
3. Belonging	.11	.213*	-	32.7	5.99
4. IRT	-.01	.06	.321*	16.67	3.7

Note. PM = Peer Mentor and FM = Faculty Mentor. n = 177 for all variables.

p < 0.05

Key Results and Main Analysis

To test our first hypothesis, we conducted a paired t-test, to compare the perceived approachability of peer mentors to faculty mentors. There was no significant difference in test scores between peer mentor approachability and faculty mentor approachability, signifying no statistical difference between the perceived approachability, $t(179) = -.79$, $p = .43$. Thus, the participating students perceived both their peer and faculty mentor as equally approachable.

To check our first and second hypotheses, we conducted two linear regression analyses to test whether faculty mentor approachability and peer mentor approachability predicted the students' feeling of belongingness and student IRT. Neither the predicted effect of faculty mentor approachability on feelings of belongingness nor on IRT were found to be significant. Thus, faculty mentors with a higher perceived approachability were not related to higher student participation in IRT, or higher belongingness to the class. After calculating the R-squared value with Pearson's r, it is evident that our model does not fit optimally (see Table 2). Therefore this model explains only little variance in our outcomes, indicating an effect of predictors outside of the ones we considered.

Our findings further show a significant positive effect of peer mentor's approachability on feeling of belongingness, which means that as peer mentors seem more approachable, the students' feelings of belongingness to the class improved *(β = 0.34, p = .005)*. Here as well, the R-squared value is low (see Table 2). On the other hand, the peer mentor's effect on student IRT was found to be insignificant. Here too, the R-squared value indicates a poor model fit (see Table 2).

Exploratory Analysis

We explored our dataset further by doing a regression analysis for belongingness as a predictor for IRT, hypothesizing that the feeling of belongingness of students in the classroom is a predictor of their IRT behavior. We found that belongingness has a positive, significant effect on IRT *(β = 0.2, p < .001)*. The R-squared value shows a relatively acceptable fit, with a higher value than the previous models, although it still does not explain much of the outcome variance (see Table 2).

Table 2

$\square^2$ *values*

	1	2	3
1. FMApproachability	-		
2. PMApproachability	.387	-	
3. Belonging	.012	.045	-
4. IRT	-.02	.004	.103

Note. PM = Peer Mentor and FM = Faculty Mentor. n = 177 for all variables.

Discussion

Within our sample, we hypothesized that peer mentors would be perceived as more approachable by their students than faculty mentors. We also predicted that peer mentor approachability would be a stronger predictor of student belongingness than faculty mentor approachability. Lastly, we expected peer mentor approachability to be a stronger predictor of student IRT than faculty mentor approachability.

When examining the first hypothesis, our findings did not show a significant difference between the approachability of student and faculty mentors, indicating that both types of mentors were seen as equally approachable. Both mentor groups received high approachability scores, indicating that they were perceived as highly approachable by their students. In testing the second hypothesis, we found a significant relationship between *peer* mentor approachability and

student belongingness, but not between *faculty* mentor approachability and belongingness. This suggests that when peer mentors are perceived as approachable, it may positively affect students' sense of belongingness, whereas the same effect is not observed with faculty mentors. This finding aligns with the previously mentioned research. However, our findings did not support our third hypothesis. The data showed a non-significant relationship between mentor approachability and student IRT for both mentor types. Thus, students' perceptions of their mentors' approachability did not impact their IRT.

Faculty vs. Peer Mentor Approachability

Our study did not find support for the first hypothesis; there were no significant differences in approachability between peer and faculty mentors. This could be attributed to a social barrier between students and their peer mentors. Since they are of similar age, there may be an element of intimidation stemming from the potential for the formation of a social relationship. This social dynamic might have influenced our outcomes from both the students' and mentors' perspectives. For instance, students may find it challenging to approach their peer mentors outside of class, while peer mentors might present themselves as less approachable due to their own insecurities. However, this effect on mentor approachability is likely small, as both types of mentors were found to be highly approachable in our sample. The discrepancies between our findings and previous research, which indicated that students find it harder to approach faculty mentors, could be attributed to the flatter workplace and academic hierarchy in the Netherlands (Radboud Career Service, 2021), in which students often address their faculty mentors by their first names or the fact that faculty mentors are often younger lecturers. Therefore, the age and experience differences between peer and faculty mentors may be

perceived as less intense, potentially leading to the equal approachability of both. This highlights the potential impact of cultural and institutional factors on mentor-student relationships.

While the approachability of peer mentors is crucial, faculty mentor approachability is equally important. Students often turn to their peer mentors for personal advice on matters such as adjusting to living alone; however, being able to ask academic questions is also essential. Faculty mentors, with their extensive expertise and academic knowledge, play a vital role in this aspect. Therefore, it is encouraging to see that faculty mentors are perceived as just as approachable as their student counterparts.

Effect of Mentor Approachability on Belongingness

Concerning the second hypothesis, our results showed that while faculty mentor approachability did not significantly affect students' feelings of belonging, peer mentor approachability did. Meaning that, when students perceived their peer mentors as approachable, they reported a stronger sense of belonging within the classroom. This aligns with previous research, which suggests that peer mentor approachability positively influences student belongingness (e.g Hagendauer & Volet, 2014; Smith et al., 2021; Yomotov et al., 2015). Contrary to our expectations, faculty mentor approachability had no significant effect, possibly because students may not see faculty mentors as important parts of their learning community due to differences such as age. Consequently, feeling comfortable to approach their faculty mentors would not change anything in the students' feelings of belongingness.

Given the potentially limited impact of faculty mentors on student sense of belonging, questions arise about their role in fostering it. While integrating faculty mentors more deeply into the students' learning community could be beneficial and potentially enhance students' sense of belonging, it could also be argued that fostering belongingness is a unique contribution of peer

mentors, who are naturally more involved in the student community. Therefore, it may be beneficial for faculty mentors to focus on other aspects of student life, such as addressing academic questions. This difference highlights how the different types of mentors complement one another, each making unique contributions to different aspects of the student experience.

Effect of Mentor Approachability on IRT

Additionally, for our third hypothesis, our findings showed no significant effect of either mentor type's approachability on student IRT. We investigated possible explanations that were not taken into account in the original study. For instance, Giorgetta et al. (2012) found that anxiety can hinder risk-taking behavior due to hypersensitivity to potential negative outcomes. Additionally, Beghetto (2009) and Clark & Soutter (2022) emphasized the importance of creating a safe classroom environment to improve students' IRT. Their research suggests that mentor support, rather than approachability, plays a crucial role in fostering IRT, as well as normalizing confusion and mistakes. Therefore, mentor immediacy behaviors perceived as supportive may be more influential predictors. Another possible explanation is that students might compare themselves to their peer mentors, due to shared characteristics such as age, experiences, and potentially similar viewpoints, as posited by the Social Comparison Theory (Goethals & Darley, 1987). This theoretical framework suggests that such comparisons may lead to a heightened fear of judgment, thereby creating a social barrier that inhibits IRT. Moreover, the presence of other students might reinforce this barrier and increase their fear of judgment, undermining the impact of mentor behavior in helping students overcome it. Creating a classroom environment where students feel connected to each other could therefore potentially help dismantle this barrier.

Additionally, first-year students may exhibit a heightened fear of failure compared to other populations (Pillay & Ngcobo, 2010). Therefore, they might require more support to engage in IRT than the populations reflected in the preliminary research. Lastly, first-year students might prioritize factors related to belonging rather than factors of academic success, including IRT. This, however, does not imply that improving student engagement in IRT is impossible—preliminary research suggests that students who feel connected to their peers find it easier to engage in IRT, suggesting a link between IRT and belonging (Ostermann, 2000). Therefore, by enhancing these interpersonal connections that first-year students already prioritize, universities could potentially enhance their participation in IRT.

Effect of Belongingness on IRT

Creating a safe classroom environment is important for encouraging IRT (Beghetto, 2008; Clark & Soutter, 2022). Our exploratory analysis found a significant effect of students' feelings of belongingness on their IRT behavior in class. This suggests that directly enhancing students' sense of belonging may be more effective in promoting IRT than focusing solely on mentor approachability. Both types of mentors should be open to addressing questions perceived as risky and foster an environment that supports a learning experience free from fear of judgment. Directly encouraging students to engage in IRT by explicitly telling them that it is acceptable to make mistakes and encouraging diverse ideas could also serve to facilitate this kind of environment. Faculty mentors, with their academic expertise, can create a space where IRT is supported by modeling these behaviors and demonstrating the value of pushing academic boundaries through their own experiences. In contrast, peer mentors, being closer in age and experience to their students, can offer a more relatable perspective. They can encourage IRT by sharing their personal experiences and strategies for overcoming specific challenges associated

with these behaviors. By sharing how engaging in IRT has benefited their own studies, peer mentors can help create a safe environment that encourages their students to do the same. Additionally, collaborative learning is known to increase students' sense of belonging (Ostermann, 2000). If mentors are taught to facilitate this type of learning, they may also boost students' sense of belonging, potentially leading to improved engagement in IRT. Together, faculty and peer mentors could enhance each other's efforts, providing a well-rounded support system that promotes IRT among students.

Limitations of Our Study

Our research results only partially align with previous studies, and there are several limitations to consider. Methodologically, our use of a younger sample obtained through convenience sampling limits the generalizability of our findings to a broader student population. Additionally, since our study was conducted exclusively at the University of Groningen, the results may not be applicable to other universities. Furthermore, as the data was collected through self-report measures, it could be affected by response biases. Consequently, participants' responses may not accurately reflect their true feelings. The use of SONA points as an incentive might have affected the validity of our data, as some students may not have fully engaged with the questionnaire. Students were required to attain a certain number of SONA points by the end of the year, and our study's late publication may have attracted students who procrastinated in obtaining these points. This subset of students might be less motivated and organized compared to the overall population of psychology students. Another limitation of our study is its correlational design, which prevents any causal inferences about the relationship between variables from being made. Although we can identify associations, the direction of these relationships cannot be determined, as well as any unmeasured confounding variables.

Consequently, any causal interpretations of our findings should be approached with caution. Further research employing experimental or longitudinal designs is needed to establish causality.

Despite these limitations, our study has notable strengths. The sample size included nearly half of all first-year students at the University of Groningen, providing a substantial dataset. Our research contributes to the understanding of the mentor-student relationship by comparing faculty and peer mentors, thereby further opening a field of research that has been minimally explored in such detail. Additionally, our program's focus on soft outcomes, such as a sense of belonging, rather than solely on academic performance, reflects a commitment to student well-being. This emphasis is represented in our data, which indicates that students feel a sense of belonging and that mentor efforts positively influence this feeling. Focusing on soft student outcomes can provide a more comprehensive picture of student development and success (Zepke & Leach, 2010). It is important for an institution to examine not only general results but also the subjective student experience, as these soft outcomes often relate to academic success and well-being variables (Ostermann, 2000).

Future Research

While this study provides valuable insights into the effects of mentor behavior on student outcomes, there are several areas that warrant further investigation. Future studies should aim to replicate this research across different universities to achieve a more diverse sample and therefore enhance the generalizability of the findings. It is intriguing that the approachability of both faculty and peer mentors had no impact on IRT, therefore investigating other variables and their effects on IRT could be a valuable direction for future research. Additionally, specifically exploring the role of belongingness as a predictor of IRT and identifying factors that enhance students' sense of belonging could provide further understanding.

The difference observed between student and faculty mentors in regard to students' perceived belongingness could have occurred due to the differences in training between the two. Peer mentors had a training course that specifically focused on community building, in which they were for instance encouraged to meet the students outside of class, which was not as extensively promoted in the faculty mentors. One option for future research could be to more effectively compare faculty mentors and peer mentors by providing them with the same training and focusing on similar variables. However, emphasizing the unique contributions of each mentor group, allowing them to complement the other rather than becoming more similar through identical training, may prove more powerful than the former. By conducting a qualitative study, it may be possible to identify the aspects of mentorship most valued by students across both types of mentors. These findings could then be used to tailor training programs aimed at enhancing the unique strengths of each mentor group. Ultimately, this approach ensures that the mentors effectively complement each other within classroom settings.

In conclusion, our study found that peer mentor approachability significantly affects students' feelings of belongingness, which is consistent with previous research. However, our hypotheses regarding the effects of faculty mentor approachability and the influence of mentor approachability on IRT were not supported. These findings underscore the need for further investigation into the dynamics of mentor-student interactions and their impact on student outcomes. Maximizing the potential of each mentor type is important to foster an effective and safe classroom. Future research should therefore emphasize understanding the distinct roles of the mentors rather than standardizing their training, thereby enhancing their individual strengths and contributions.

References

Ambrose, S. (2016). *How Do Students Become Self-Directed Learners?* (pp. 189–216).

Avinger, M. (2021). *The Impact of Mentoring on Student Behavior in an Urban Public School*. UMI. https://delaware.contentdm.oclc.org/digital/api/collection/p15323coll5/id/64930/download

Beghetto, R. A. (2009). Correlates of intellectual risk taking in elementary school science. *Journal of Research in Science Teaching*, *46*(2), 210–223. https://doi.org/10.1002/tea.20270

Bippus, A.M., Brooks, C.F., Plax, T.G., & Kearney, P. (2001). Students' Perceptions of Part-time and Tenured/Tenure-Track Faculty: Accessibility, Mentoring, and Extra-Class Communication. *Journal of the Association for Communication Administration, 30*, 13-23.

Bonin, E. (2013). Effect of Peer Mentors on Academic Performance. *River Academic Journal*, *9*(2). https://www2.rivier.edu/journal/ROAJ-Fall-2013/J821-Bonin_DCLL.pdf

Bonnet, J. L., & McAlexander, B. (2012). Structural Diversity in Academic Libraries: A Study of Librarian Approachability. *The Journal of Academic Librarianship*, *38*(5), 277–286. https://doi.org/10.1016/j.acalib.2012.06.002

Chopra, V., Arora, V. M., & Saint, S. (2018). Will You Be My Mentor?—Four Archetypes to Help Mentees Succeed in Academic Medicine. *JAMA Internal Medicine*, *178*(2), 175. https://doi.org/10.1001/jamainternmed.2017.6537

Clark, S., & Soutter, M. (2022). Growth mindset & intellectual risk-taking: Disentangling conflated concepts. *Phi Delta Kappan*, *104*(1), 50–55. https://doi.org/10.1177/00317217221123650

Crisp, G., & Cruz, I. (2009). Mentoring College Students: A Critical Review of the Literature Between 1990 and 2007. *Research in Higher Education*, *50*(6), 525–545. https://doi.org/10.1007/s11162-009-9130-2

Denzine, G. M., & Pulos, S. (2000/09//). College students' perceptions of faculty approachability. *Educational Research Quarterly, 24*(1), 56. http://server.proxy-ub.rug.nl/login?url=https://www.proquest.com/scholarly-journals/college-students-perceptions-faculty/docview/216181530/se-2

Gaziantep University, ÇetiN, B., İLhan, M., & Yilmaz, F. (2014). An Investigation of the Relationship between the Fear of Receiving Negative Criticism and of Taking Academic Risk through Canonical Correlation Analysis. *Educational Sciences: Theory & Practice*. https://doi.org/10.12738/estp.2014.1.1616

Giorgetta, C., Grecucci, A., Zuanon, S., Perini, L., Balestrieri, M., Bonini, N., Sanfey, A. G., & Brambilla, P. (2012). Reduced risk-taking behavior as a trait feature of anxiety. *Emotion*, *12*(6), 1373–1383. https://doi.org/10.1037/a0029119

Glazzard, J., Rose, A., & Ogilvie, P. (2021). The impact of peer mentoring on students' physical activity and mental health. *Journal of Public Mental Health*, *20*(2), 122–131. https://doi.org/10.1108/JPMH-10-2018-0073

Goethals, G. R., & Darley, J. M. (1987). Social Comparison Theory: Self-Evaluation and Group Life. In B. Mullen & G. R. Goethals (Eds.), *Theories of Group Behavior* (pp. 21–47). Springer New York. https://doi.org/10.1007/978-1-4612-4634-3_2

Hagenauer, G., & Volet, S. E. (2014). Teacher–student relationship at university: an important yet under-researched field. *Oxford Review of Education*, *40*(3), 370–388. https://doi.org/10.1080/03054985.2014.921613

Hall, D.M. (2017). The power of feedback: An indicator of mentor effectiveness during student teaching.

Inda-Caro, M., Maulana, R., Fernández-García, C.-M., Peña-Calvo, J.-V., Rodríguez-Menéndez, M. D. C., & Helms-Lorenz, M. (2019). Validating a model of effective teaching behaviour and student engagement: Perspectives from Spanish students. *Learning Environments Research*, *22*(2), 229–251. https://doi.org/10.1007/s10984-018-9275-z

Jasmi, A. N., & Hin, L. C. (2014). Student-Teacher Relationship and Student Academic Motivation. *Journal for Interdisciplinary Research in Education (JIRE)*, *4*(1), 6. https://doi.org/10.7603/s40933-014-0006-0

Johnson, D., W., & Johnson, R., T. (2019). Cooperative Learning: The Foundation for Active Learning. In S. Manuel Brito (Ed.), *Active Learning—Beyond the Future*. IntechOpen. https://doi.org/10.5772/intechopen.81086

Klohnen, E. C., & Luo, S. (2003). Interpersonal attraction and personality: What is attractive--self similarity, ideal similarity, complementarity or attachment security? *Journal of Personality and Social Psychology*, *85*(4), 709–722. https://doi.org/10.1037/0022-3514.85.4.709

Kuhn, C., Hagenauer, G., Gröschner, A., & Bach, A. (2024). Mentor teachers' motivations and implications for mentoring style and enthusiasm. *Teaching and Teacher Education*, *139*, 104441. https://doi.org/10.1016/j.tate.2023.104441

Liu, J., Francis, D. C., Lloyd, K., & Eker, A. (2023). Mathematically productive relationships (MPRs): A potentially effective classroom management approach. *Learning Environments Research*, *26*(2), 573–593. https://doi.org/10.1007/s10984-022-09444-8

Montepare, J. M. (1995). The impact of variations in height on young children's impressions of men and women. *Journal of Nonverbal Behavior*, *19*(1), 31–47. https://doi.org/10.1007/BF02173411

Osterman, K. F. (2000). Students' Need for Belonging in the School Community. *Review of Educational Research*, *70*(3), 323–367. https://doi.org/10.3102/00346543070003323

Palmer, M., O'Kane, P., & Owens, M. (2009). Betwixt spaces: student accounts of turning point experiences in the first-year transition. *Studies in Higher Education*, *34*(1), 37–54. https://doi.org/10.1080/03075070802601929

Pillay, A. L., & Ngcobo, H. S. B. (2010). Sources of Stress and Support among Rural-Based First-Year University Students: An Exploratory Study. *South African Journal of Psychology*, *40*(3), 234–240. https://doi.org/10.1177/008124631004000302

Ploskonka, R. A., & Servaty-Seib, H. L. (2015). Belongingness and Suicidal Ideation in College Students. *Journal of American College Health*, *63*(2), 81–87. https://doi.org/10.1080/07448481.2014.983928

Poyrazli, S., & Kavanaugh, P. R. (2006). Marital Status, Ethnicity, Academic Achievement, and Adjustment Strains: The Case of Graduate International Students. *College Student Journal, 40*(4), 767–780.

Qualtrics. (2024). *Qualtrics* (Version June 2024) [Computer software]. Qualtrics, Provo, UT, USA. https://www.qualtrics.com

Radboud Career Service. (2021, March). Dutch Business Culture.

https://www.ru.nl/publish/pages/985415/dutch_business_culture_en_1.pdf

Retallick, M. S., & Pate, M. L. (2009). Undergraduate Student Mentoring: What do Students

Think? *NACTA Journal*, *53*(1), 24–31. http://www.jstor.org/stable/43765354

Rovai, A. P. (2002). Development of an instrument to measure classroom community. The

Internet and Higher Education, 5(3), 197–211. https://doi.org/10.1016/S1096-

7516(02)00102-1

Smith, A., Sturtevant, K., Kartchner, M., & Bullough, E. (2021). *Peer Mentor Impact on

Student Success*.

https://www.uvu.edu/library/docs/peer_mentor_impact_on_student_success.pdf

Snowden, M., & Hardy, T. (2013). Peer mentorship and positive effects on student mentor

and mentee retention and academic success. *Widening Participation and Lifelong

Learning*, *14*(1), 76–92. https://doi.org/10.5456/WPLL.14.S.76

Sona Systems (n.d.). *Sona Systems: Cloud-based Participant Management Software*

[Computer software]. Sona Systems, Ltd. https://www.sona-systems.com/

Soutter, M., & Clark, S. (2023). Building a Culture of Intellectual Risk-Taking: Isolating the

Pedagogical Elements of the Harkness Method. *Journal of Education*, *203*(3), 508–519.

https://doi.org/10.1177/00220574211037747

Tanner, K. D. (2012). Promoting Student Metacognition. *CBE—Life Sciences Education*,

11(2), 113–120. https://doi.org/10.1187/cbe.12-03-0033

Worsley, J. D., Harrison, P., & Corcoran, R. (2021). Bridging the Gap: Exploring the Unique

Transition From Home, School or College Into University. *Frontiers in Public Health*, *9*,

634285. https://doi.org/10.3389/fpubh.2021.634285

Yomtov, D., Plunkett, S. W., Efrat, R., & Marin, A. G. (2017). Can Peer Mentors Improve

    First-Year Experiences of University Students? *Journal of College Student Retention:*

    Research, Theory & Practice, *19*(1), 25–44. https://doi.org/10.1177/1521025115611398

Zepke, N., & Leach, L. (2010). Beyond hard outcomes: 'soft' outcomes and engagement as

    student success. *Teaching in Higher Education*, *15*(6), 661–673.

    https://doi.org/10.1080/13562517.2010.522084

Appendix A

Figure A1

Instructor Accessibility Scale (Bippus et al., 2001)

Please answer the following questions about your **Peer mentor** in Academic Skills

	strongly disagree	disagree	neutral	agree	strongly agree
My peer mentor seems impatient about interacting with students outside of class	○	○	○	○	○
My peer mentor seems too rushed to deal with students outside of class	○	○	○	○	○
I find it difficult to approach my peer mentor outside of class	○	○	○	○	○
My peer mentor discourages student contact outside of class	○	○	○	○	○
My peer mentor seems distant when interacting with students outside of class	○	○	○	○	○
My peer mentor gets annoyed when students try to talk to them outside of class or office hours	○	○	○	○	○

Please answer the following questions about your **faculty mentor** in Academic Skills

	strongly disagree	disagree	neutral	agree	strongly agree
My faculty mentor seems impatient about interacting with students outside of class	○	○	○	○	○
My faculty mentor seems too rushed to deal with students outside of class	○	○	○	○	○
I find it difficult to approach my faculty mentor outside of class	○	○	○	○	○
My faculty mentor discourages student contact outside of class	○	○	○	○	○
My faculty mentor seems distant when interacting with students outside of class	○	○	○	○	○

Appendix B

Figure B1

Intellectual Risk Taking Scale (Beghetto, 2009)

Please answer the following questions about your behavior in your Academic Skills class.

	Definitely not				Definitely yes
In class, I like doing new things even if I am not very good at them	○	○	○	○	○
In class, I share my ideas even if I am not sure they are correct	○	○	○	○	○
In class, I try to do new things even if I am not sure how	○	○	○	○	○
In class, I try to learn new things even if I might make mistakes	○	○	○	○	○
In class, I ask questions even if other students will think I am not as smart as them	○	○	○	○	○

Appendix C

Figure C1

Belongingness Scale (Rovai, 2002)

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
I feel that students in this course care about each other	○	○	○	○	○
I feel connected to others in this course	○	○	○	○	○
I do not feel a spirit of community	○	○	○	○	○
I feel that this course is like a family	○	○	○	○	○
I feel isolated in this course	○	○	○	○	○
I trust others in this course	○	○	○	○	○
I feel that I can rely on others in this course	○	○	○	○	○
I feel that members of this course depend on me	○	○	○	○	○
I feel uncertain about others in this course	○	○	○	○	○
I feel confident that others will support me	○	○	○	○	○