

The Mediating Role of Trust on Self-Disclosure and Student Engagement

Tara Katharina Krahn

S4023307

Department of Psychology, University of Groningen

PSB3E-BT15: Bachelor Thesis

Group number: 32

Supervisor: Dr. Stacey Donofrio

Second evaluator: Dr. Max Agostini

In collaboration with: Lorian Bregkasi, Daniel Jürgens, Nina Rack, Eimear McWalters..

July 03, 2022

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

Older students often mentor their younger peers, taking over the role of peer-mentors. Their relationship to their mentees can have positive consequences, such as the students' engagement in class, functioning as a predictor for academic achievements. Thus this research aimed to investigate how student engagement is related to relevant peer-mentor self-disclosure and whether this relationship is mediated by trust. Furthermore, a moderator, anxious attachment style was included in the study. The analysis used the Hayes PROCESS macro for SPSS. The study was conducted by administering a questionnaire to first-year university students from the University of Groningen. The students participated in a year-long course, in which they were mentored by a peer-mentor and faculty-mentor interchangeably, this study focuses on the peer-mentor and student relationship. The moderated-mediation model was only partially significant. There seemed to be a significant relationship between relevant peer-mentor self-disclosure and trust as well as trust and student engagement. Anxious attachment style was found to be not significantly related to self-disclosure and trust. Furthermore, the relationship between self-disclosure and student engagement was also found to be not significant. Future implications are discussed from an academic and practical perspective. The take-home message is that relevant self-disclosure appears to have an effect on trust and student engagement, thus mentors-mentee relationships might benefit from topic-related self-disclosure. However, further research is needed to establish a more conclusive picture on the relationship.

Keywords: self-disclosure, student engagement, student motivation, trust, mentoring, peer-mentoring

The Mediating Role of Trust on Self-Disclosure and Student Engagement

Mentoring comes along with many benefits, for the mentee and mentor alike.

Mentoring is believed to increase the individual learning experience (Williams & Fowler, 2014), as well as to improve measurable results like grades and knowledge level in both the mentee and the mentor (Tayler et al., 2015). However, the underlying reasons for this are not always clear (Law et al., 2020). Previous research explored the outcomes of mentoring but has yet to fully explain how those come about. One of the possible outcomes is the students' motivation. For future implications, it is important to understand how a student-mentor relationship is being formed and strengthened in order to increase the beneficial effect of peer-mentoring in education. Society has developed towards a more achievement and ambition-oriented outlook in the last years (Li & Li, 2010), thus this research hopes to offer further insight and thus can possibly help students cope with the pressure of academia, by examining how effective mentor-mentee relationships can be formed. Furthermore, considering the increase in competitive behavior, performance-pressure has dealt a hit on students' mental health (Deb et al., 2015). Seeing how interpersonal relationships are linked to mental health (Deci & Ryan, 1985), as well as giving room for more personal development and growth (Aron et al., 2013), in other words, student engagement, we aim to investigate the mechanism of the variables' relationship to one another, in order to gain further insight.

As children we start learning by looking at our parents for examples, by copying what they are doing or listening to their advice. In a sense, they mentor us. And this is no different in the field of education. Here, students also learn from mentor figures which then are not our parents but rather older students or teachers and professors. In this research we are focusing on the student/mentor relationship between students and student-mentors/ peer-mentors (i.e., students who are only one or two years further in their education). Relationships as such are a continuous process of verbal and interpersonal exchanges, which can be elicited by disclosing

personal information, expressing trust towards each other and displaying a form of engagement. Naturally, the way a relationship forms and develops is also dependent on the previous experience of the individual and their perception of relationships, resulting in specific attachment styles.

Self-disclosure

Self-Disclosure is an act of telling another person something of more intimate nature creating a sense of personal connection (Sprecher et al., 2012). It can be measured by its amount, its valence (i.e., positive or negative), and in regards to its relevance to the topic of discussion. Self-disclosure, while a form of expressing vulnerability to another person and facilitating trust and liking, depends on multiple other factors as well. An example for that would be self-disclosure being received better when topic related rather than unrelated, i.e. disclosing a personal experience with failure when discussing the struggles faced with start-up companies. However, it is unclear how often one has to self-disclose and how quantity, quality and relatableness affect trust. Because relatable self-disclosure was found to have the highest level of significance (Clarke et al., 2018) this research will focus on it. A theory that underlines the human desire to grow as an individual and to expand one's sense of self is the Self-Expansion Model by Aron et al., 2013. It describes how we absorb new input and add it to our self-perception, achieved through interpersonal relationships and by engaging with others. By living in one's own frame of reference, one is limited to the already known; cognitively and emotionally. However, by engaging with others, especially with those who differ vastly from us in knowledge, behavior, and viewpoints, we are confronted with new and different concepts. Building a relationship with those people tends to allow us to adopt certain aspects and principles of theirs to such a degree that we perceive them as part of our own identity, hence our self-perception has grown and expanded through another person's input (Aron et al., 2013). While Aron et al. (2013) states that the desire to expand the self is an

underlying motivation, it is also connected to the motivation to learn and gain a deeper understanding of the makings of the world we live in, also known as epistemic motivation (Lee, 2019). Previous research suggests there is also an existing link between the increase of self-expansion and the increase of working performance (McIntyre et al., 2014).

Self-expansion is increased by building and creating relationships with others, while relationships appear to be built and increased by self-disclosure (Sprecher et al., 2012). They draw the connection in their article that self-disclosure facilitates trust, seeing as we usually self-disclose information to people we have a trusting relationship with. In turn, we also experience a higher level of trust towards the other person if they self-disclose to us, which makes it also more likely to self-disclose yourself. Henceforth, this study is focusing on the mediating role of trust between peer-mentor self-disclosure and its effect on the students' engagement.

Trust

Other aspects potentially influencing the effectiveness of the student-mentor relationship are the degree of trust and openness both parties are willing to offer, which can be expressed through self-disclosure. While trust is created over time and can be difficult to achieve, previous research suggests that self-disclosure can facilitate trust (Sprecher et al., 2012). Trust is here described as the willingness to rely on the other person as well as to confide in them, believe them and feel a connection (Hoy, n.d.). Trust is given based on the assumption that it will be reciprocated (Hoy, n.d.), it is an essential component in human relationships. Trust influences how we perceive relationships to others and therefore how we act and how those relationships further develop. It might also be affected by self-beliefs, which can be inferred from outside feedback, e.g. in group structures. This is supported by the research of Molleman et al. (2007) which illustrates that negative self-beliefs and downward comparison towards one-self compared to the group members causes a decrease in trust and

individual learning performance. Furthermore, Peng et al. (2019) explore in their research the effects of student's trust towards their group leaders on their academic outcomes and achievements (Lee & Kang, 2016). Peer-mentors or instructors are here considered the group-leaders and show how the trust towards the group leader affects the students academic performance. In accordance with this further research suggests that there is a bidirectional relationship between self-disclosure and liking (Leary et al., 2007). Consequently, this research aims to further explore the linkage of the trust to self-disclosure and student engagement. Trust was chosen as a mediating variable.

Student engagement

Motivation is a broad construct with many subgroups, such as intrinsic motivation (i.e., the desire to act with a feeling of internal fulfillment without outside merits, e.g. studying to master a skill for personal joy of mastering that skill) and extrinsic motivation (i.e., the desire to act to gain rewards from outside stimuli, i.e. working for a good grade) (Deci & Ryan, 1985a). In the scope of this study, a holistic approach to motivation would create a too broad of an approach thus affecting its quality. Therefore, this study will focus on intrinsic motivation, which observable effects will be measured by student engagement.

Student engagement is a holistic concept that encompasses the student's emotional, cognitive and behavioral response to the learning and mentoring experience, including an internal depiction of the student's mental state and the resulting behavior in the frame of their education (Zhoc et al., 2018). It focuses on the student's perception of their own self-development in those areas. Student engagement as such can be affected by outside stimuli which in turn form internal attitudes. According to Deci and Ryan's(1975) Self-Determination Theory, we desire an autonomous environment in which we can confidently express our abilities and form connections with others. By receiving feedback from the outside we infer about our environmental circumstances and our attitude and

motivation towards it, forming student engagement. Student engagement consists of the student's intention and motivation, as well as their exhibited and measurable engagement in class (Zhoc et al., 2018). Intention and motivation are continuously developing concepts, being based on interhuman relationships, thus are susceptible outside stimuli, such as other students, the mentors behavior and their own past experiences. As such this research aims to explore how student engagement is influenced by trust and relevant peer-mentor self-disclosure (theorized to increase trust) to further understand how helpful interventions can be developed to increase well-being and prevent or interject loneliness and mental struggles.

Anxious attachment style

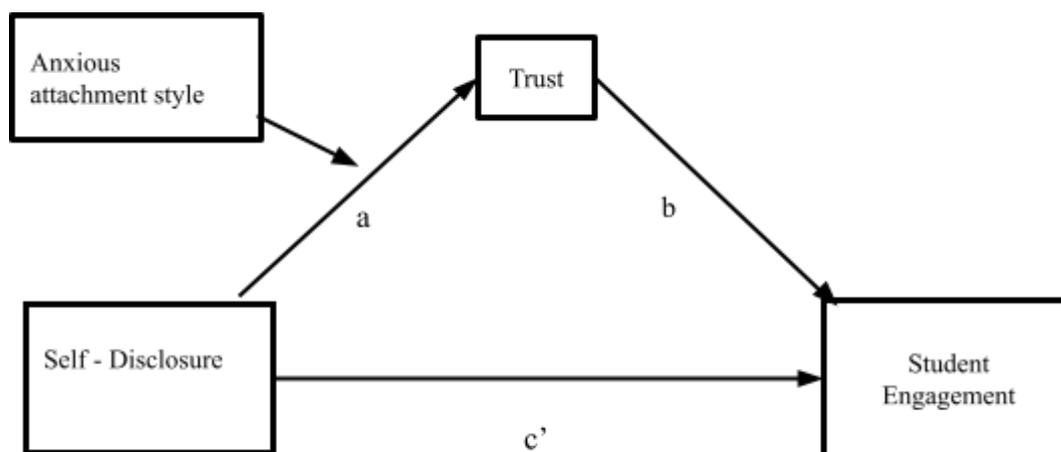
Furthermore, in this research the moderator anxious attachment style is included, in order to explore whether the way love and attachment have been experienced and understood previously in the students life, has an effect on how they develop trust towards their mentor, based on their self-disclosure. The anxious attachment style is a form of attachment that is marked by a fear of losing the caregiver. It is elicited through neglect by the primary caregiver in young age. Thus, later in life, the behavior exhibited by the individual is primed by the anxiety that the caregiver or partner might leave and thus be not dependable. A form of dependency is created and later affects the individual's understanding of and exhibited behavior in relationships (Hudson & Fraley, 2017).

In this research, it is theorized that having an anxious attachment style moderates the relationship between peer-mentor self-disclosure and trust with an increasing level. A facilitator of this might be students' anxious attachment style, which shapes their perceptions and beliefs (Hudson & Farely, 2017) of themselves and their understanding of their social interactions with others, inferring back to self-perception (Kaya & Öz, 2020). Anxious attachment style as a moderating variable, is implemented to control for personal experiences

and behavioral patterns in building relationships with others, and to further explore the predictiveness of student engagement.

Figure 1

Moderated-mediation model of the examined variables



Peer-Mentors

The mediating role of trust in this model is theorized to further explain the relationship between peer-mentor self-disclosure and the students' engagement. This research focuses on the role of the peer-mentor influence instead of the faculty mentor's influence due to the lower discrepancy in social hierarchy between students and peer-mentors, compared to students and faculty mentors. We hypothesize that a peer-mentor might be more successful in facilitating trust rather than a faculty-mentor, seeing as student and peer-mentor are closer related to each other in terms of academic hierarchy than the faculty-mentor and the student, thus reducing social inhibition. Tayler et al. (2015) describe in their research how peer-mentors might have an advantage over faculty-mentors regarding trust, seeing as the peer-student relationship tends to be more on common ground and thus be more open to suggestions.

Model Summary

Trust, here used as the mediator, is theorized to be increased by self-disclosure and thus increase the students' engagement. As a further moderator, displaying an anxious attachment style is included. An anxious attachment style can presumably alter the perception and reciprocity of self-disclosure within the individual and hence affect the outcome variable, student engagement. This is why we are investigating the mediating relationship between peer-mentor self-disclosure, trust and student engagement. We hypothesize that a peer-mentor might be successful in facilitating trust, because student and peer-mentor are closely related to each other in terms of academic hierarchy, thus reducing social inhibition.

While previous research has explored the effects of self-disclosure and the nature of self-expanding motivation our research tries to establish a mediating relationship between self-disclosure, trust and student engagement. By measuring the relatability of student mentors' self-disclosure, from the perspective of the students, we try to measure the effectiveness of their statements in regards to trust (path a) and how this mediates the student motivation to interact and perform in class (path b). We are including a moderator of anxious attachment style in path a, seeing as students might react differently to their mentors self-disclosure depending on whether they score high or low on the anxious attachment style scale. We hope to gain a deeper understanding on the effectiveness and needs of student-mentor relationships and thus further help develop beneficial strategies for both parties. Seeing as being able to understand the relationship and its makings better, increases its potential for benefit, such as the students' well-being and performance.

First Hypothesis: the relationship between peer-mentor self-disclosure and student engagement is mediated by trust.

Second Hypothesis: anxious attachment style moderates how trust mediates the relationship between peer mentor self-disclosure and student engagement.

Method Section

Participants

In this study 188 first-year psychology students, taking the Academic Skills course in the Bachelor of Psychology programme at the University of Groningen, took part in (35 male; 91 female; 3 other/gender not specified) this study. A total of 93 participants were excluded from our study due to incomplete data, leaving a total of 95 participants. The participants varied in age from 18 to 34 (SD=2.5). The Participants' nationality included 46.1% German, 28.9% others, and 25% Dutch. Participants were recruited through advertising from faculty staff and during class breaks; no compensation was given for participation.

Study Design and Procedure

In the present study, a correlational research design was used. The nature of the study was observational in that levels of self-disclosure in peer-mentors/faculty- mentors were not modified or influenced by the study design directly. The mediation model, as well as the moderator relationship, were being assessed using a set of questionnaires addressing participants' perception of their peer-mentors/faculty-mentors level of self-disclosure, participants' perceived trust levels of their peer-mentors/faculty-mentors, anxious attachment style and student engagement. All participants that agreed to partake underwent the same order and set of questionnaires.

The present study was part of a larger research project conducted for the bachelor thesis. Ethical approval was obtained by the faculty ethics committee. After asking participants whether they were first-year students taking the course Academic Skills, they

were given an introduction to the study stating its content and procedure. After providing informed consent, the participants were asked to fill out an anonymous online questionnaire. Participants were allowed to take as much time as needed and drop out of the study at any given time. A dropout resulted in the exclusion of their data. After informed consent was given, participants were shown a set of questionnaires referring to peer-mentor/faculty-mentor self-disclosure, trust, student engagement in the framework of the study itself and a variety of alternative variables were also assessed. After completion of the survey, participants were thanked for their participation.

Materials and instruments

Self-disclosure

The Teacher Self-Disclosure Scale (Cyanus & Martin, 2008) was used to measure the amount, relevance, and negativity of self-disclosure from both faculty and peer mentors. The questionnaire consists of 14 items (e.g., “My peer/faculty mentor often shares their dislikes or likes.”), measured on a 7-point Likert scale ranging from completely disagree (1) to completely agree (7). All three dimensions show high internal consistency: amount ($\alpha = .80$), negativity ($\alpha = .84$), relevance ($\alpha = .88$). Moreover, each item has been shown to have content validity (Cyanus & Martin, 2008). In our sample, Cronbach’s alpha was .88.

Attachment anxiety

In order to measure the extent to which students are anxiously attached, we used the anxious attachment subscale from the Attachment Style Questionnaire (ASQ-SF; Iwanaga et al., 2018). The scale consists of 14 items (e.g., “I worry a lot about my relationships.”), scored on a 6-point Likert scale, ranging from strongly disagree (1) to strongly agree (7). The internal consistency reliability of the scale was computed to be $\alpha = .76$ and was similar to the long version of the scale. Furthermore, the scale was found to be valid (Iwanaga et al., 2018). Cronbach’s alpha in our study was 0.88.

Trust

The Student Trust in Faculty Scale (STF; Forsyth et al., 2012) is a 13-item instrument (e.g., “Peer/Faculty mentors care for students.”) used to measure students’ level of trust in their peer mentors and faculty mentors. The scale is scored along a 4-point Likert scale, ranging from strongly disagree (1) to strongly agree (4). The internal consistency of the scale has been shown to be very high ($\alpha = .90$). Moreover, there is support for construct, concurrent as well as predictive validity (Forsyth et al., 2012). In our sample, Cronbach’s alpha was 0.82.

Student engagement

The Higher Education Student Engagement Scale (HEIS) (Zhoc et al., 2019) was used to measure academic motivation. The HEIS is a 28-item questionnaire (e.g., I usually come to class having completed readings or assignments) based on the five-factor model of student engagement (Fredricks et al., 2012). The domains of academic, cognitive, social, and affect engagement were included in the study. Online engagement was removed as it was not relevant. Academic motivation was measured on a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5). The questionnaire was supported to have criterion validity and inter-consistency (Zhol et al., 2019). The Cronbach’s alpha in our study was 0.78.

Statistical Analysis

After collecting the data, descriptive analyses were performed to establish an overview of the participants’ demographic distribution. Furthermore, an assumption check for linearity, homoscedasticity and normality was performed. We investigated the correlations between the independent variable, self-disclosure, the moderator, anxious attachment style, the mediator, trust, and the dependent variable student engagement. The following analysis was conducted using the PROCESS macro for SPSS model (Hayes, 2013). Firstly, a mediation analysis was conducted using model 4. Then a moderation analysis was conducted examining the effect of anxious attachment style on the relationship between self-disclosure and trust, using model 1.

The proposed moderated mediation model was then tested using the PROCESS macro for SPSS (model 7). This model tests the indirect effect of the moderating variable anxious attachment style on the relationship between the independent variable self-disclosure and the outcome variable student engagement via the potential mediator trust. A bootstrapping inferential analysis was conducted to control for normality (Hayes, 2013).

Results

Correlation analyses of the measured variables of the peer-mentor model are presented in Table 1 below. The assumptions of normality, homoscedasticity, and linearity were met.

Mediation analysis

This mediation analysis (Hayes, 2013) tested whether the relationship between relevant peer-mentor self-disclosure and student engagement was mediated by peer-mentor trust. A partially significant model was found ($F(2, 92) = 3.329, p = 0.0402$), with 8.29% of the variance in student engagement explained by the predictor variables, peer-mentor self-disclosure and trust. The total direct effect of peer-mentor self-disclosure on student engagement was not significant ($\beta = 0.259, SE = 0.190, 95\% CI [-0.118, 0.637], p = 0.176$). The indirect effect of the mediator was significant ($\beta = 0.086, SE = 0.040, 95\% CI [0.013, 0.169]$). After controlling for the indirect effect, the direct effect was smaller and remained insignificant ($\beta = 0.123, SE = 0.192, 95\% CI [-0.258, 0.504], p = 0.523$). It shows there is a partial mediating effect.

Table 1

Pearson correlations, means and standard deviations of the measured variables.

	1	2	3	4	Mean	SD
1. Anxious Attachment Style	–				49.70	12.03
2. Student Engagement	-0.02	–			57.81	8.30
3. Peer-mentor trust	-0.04	0.27**	–		40.87	4.68
4. Relevant peer-mentor self-disclosure	0.00	0.16	0.34**	–	25.02	5.28

Note. The unstandardized Pearson correlation coefficients are reported for each variable.

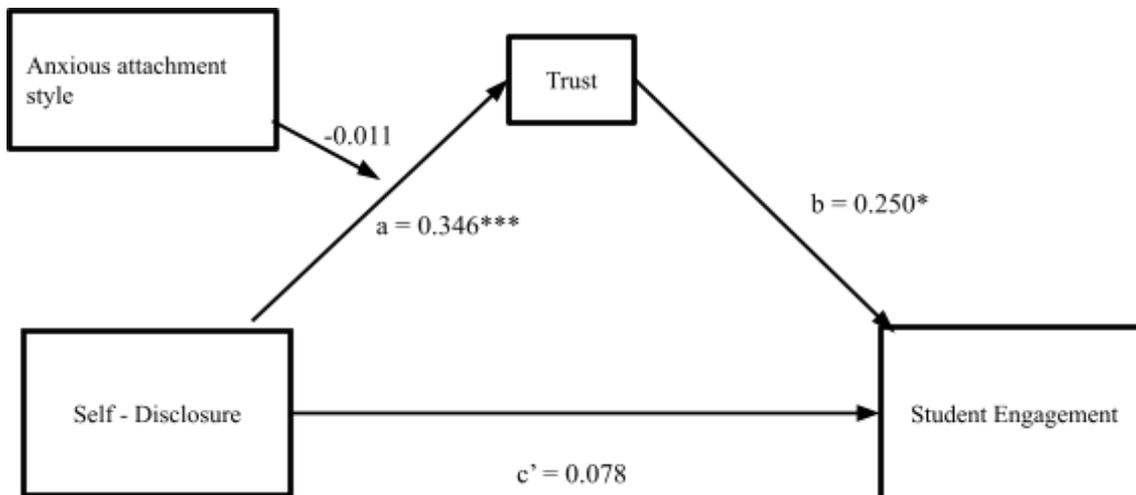
** $p < .01$.

Moderation analysis

The third analysis inspected the moderating influence of anxious attachment style on the relationship between relevant peer-mentor self-disclosure and peer-mentor trust. The overall model was significant, ($F(3, 91) = 6.887, p = 0.0003$), with 16.2% of the variance explained. However, the interaction effect was not significant ($\beta = -0.011, SE = 0.006, t(91) = -1.955, p = 0.053$). Specifically, and as shown in Fig. 2, the relationship between peer-mentor self-disclosure and peer-mentor trust decreased in size from low- ($-1SD; \beta = 0.466, SE = 0.104, p < .001***$) to moderate ($M; \beta = 0.322, SE = 0.086, p = 0.0003***$) to high- ($+1SD; \beta = 0.178, SE = 0.122, p = 0.147$) at increasing levels of anxious attachment style.

Figure 2

Moderated-mediation model of relevant peer-mentor self-disclosure on student-engagement, via peer-mentor trust and moderated by anxious attachment style.



Note. The standardized effect sizes are shown for each variable.

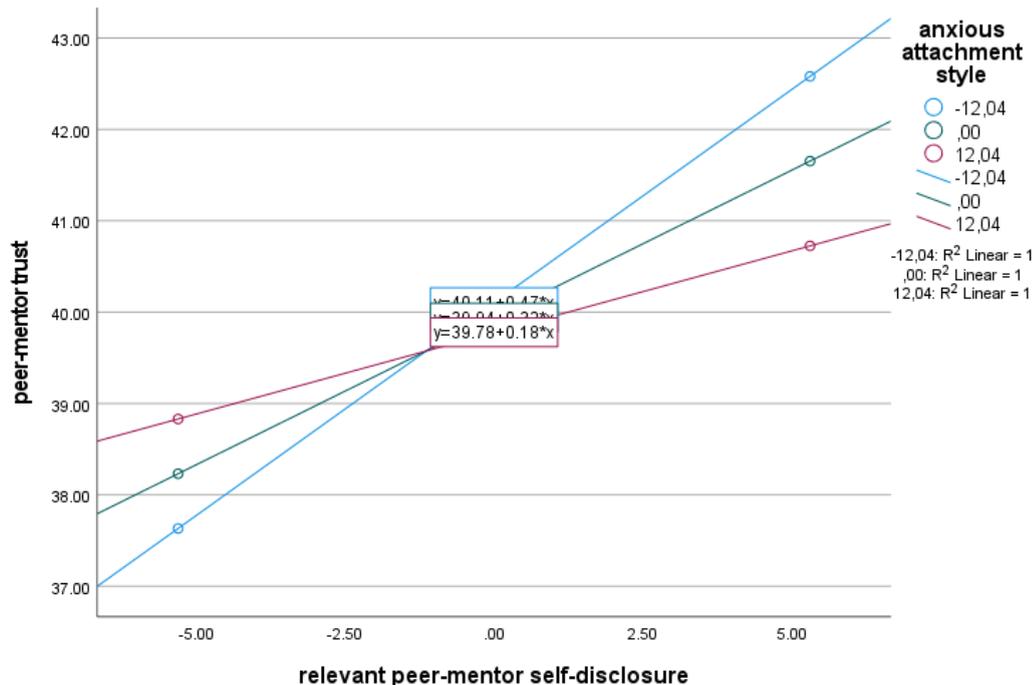
* $p < .05$., ** $p < .01$., *** $p < .001$

Moderated mediation analysis

The moderated mediation analysis (Hayes, 2013) examined the association between the moderating variable, anxious attachment style, and the indirect effect; it was not significant ($\beta = -0.005$, $SE = 0.003$, 95% CI [-0.014, 0.000]). Peer-mentor trust partially mediated the relationship between relevant peer-mentor self-disclosure and student engagement over increasing levels of anxious attachment style: the conditional indirect effect of peer-mentor self-disclosure on student engagement, through peer-mentor trust, was significant at low (-1SD; $\beta = 0.466$, $SE = 0.104$, 95% CI [0.259, 0.673], $p = 0.000$) and moderate (M ; $\beta = 0.322$, $SE = 0.086$, 95% CI [0.150, 0.494], $p = 0.0003$), but not significant at high (+1SD; $\beta = 0.178$, $SE = 0.122$, 95% CI [-0.064, 0.4213], $p = 0.1477$) levels of anxious attachment style.

Figure 3

The moderating effect of anxious attachment style on peer-mentor self-disclosure and peer-mentor trust over increasing levels of the moderating variable.



Note. $-1SD = -12.04$, $Mean = 0.00$, $+1SD = 12.04$

Explorative moderated-mediation analysis of faculty-mentors

This moderated mediation (Hayes, 2013), reflects the relationship between the moderating variable, anxious attachment style, and the indirect effect; it was not significant ($\beta = -0.004$, $SE = 0.003$, 95% CI [-0.011, 0.001]). Faculty-mentor trust partially mediated the relationship between relevant faculty-mentor self-disclosure and student engagement measured at increasing intensity of anxious attachment style: the conditional indirect effect of faculty-mentor self-disclosure on student engagement, through faculty-mentor trust, was significant at low ($-1SD$; $\beta = 0.145$, $SE = 0.076$, 95% CI [0.007, 0.304]) and moderate (M ; $\beta =$

0.087, $SE = 0.051$, 95% CI [0.005, 0.204]), but not significant at high (+1SD; $\beta = 0.029$, $SE = 0.048$, 95% CI [-0.033, 0.157]) levels of anxious attachment style.

Discussion

We hypothesized that the relationship between peer-mentor self-disclosure and student engagement would be mediated by trust. We focused on a group of first year students, participating in an introductory course, Academic Skills, at the University of Groningen. Furthermore, we hypothesized that the relationship between peer-mentor self-disclosure and trust is moderated by an anxious attachment style. The results partially supported the first hypothesis and did not support the second hypothesis. The marginal mediating effect of trust expresses itself in a way, that trust mediates relevant peer-mentor self-disclosure and student engagement, while the direct effect is not significant.

Sprecher et al. (2012) discuss in their paper that trust can be facilitated by self-disclosure, our findings support this. Further, the relationship between peer-mentor trust and student engagement was significant, which is in line with previous studies. Hold and Varagona (2019) examined how trust relates to student engagement in nursing students and found that it seems to influence the students' well-being. The relationship between relevant peer-mentor self-disclosure and student engagement was not significant, which is not congruent with previous research. Similarly, Cayanus et al. (2009) stated in their study how relevant self-disclosure relates to student participatory engagement. The moderating effect of anxious attachment style was also found to be not significant. This is also incongruent to the previous research consensus (Anders & Tucker, 2000) which shows that anxious attachment style appears to have an effect on relationship forming habits and abilities in adults. However, it might be that the effects of anxious attachment style are more apparent in one-on-one relationships and are difficult to observe in the current study's group setting. As a total, the

model was not significant while individual pathways (path a and path b) were. However, the study provides no evidence for correlation being causation nor supplies evidence for the direction of effect between the variables.

Explorative analysis

As an exploratory analysis, the model was also tested in the context of faculty-mentors. Relevant peer-mentor self-disclosure was substituted for relevant faculty-mentor self-disclosure and peer-mentor trust was exchanged for faculty-mentor trust. When considering the model focusing on faculty-mentors path a (relevant faculty-mentor self-disclosure on faculty-mentor trust) and path b (faculty-mentor trust on student engagement) were significant while the moderator and path c (relevant faculty-mentor self-disclosure on student engagement) were not significant. The results were congruent with the peer-mentor model results, faculty-mentors show an overall similar correlation level among the variables, within their respective models, as in the peer-mentor condition.

However, there was a correlation between relevant faculty-mentor self-disclosure and student engagement. This indicates that faculty-mentors self-disclosing information, relevant to the course topic, is related to the student engagement. Future research implications could examine the relationship and the cognitive implications of self-disclosure on students' class-participation. Especially, seeing as there might be potential confounding variables included that have yet to be determined. Such could be the mentees' relationship to the other students or the overall opinion of the student body towards the mentor. Further possible confounding variables might be the type of instructor (student-mentor or peer-mentor) and the type of topic that is being discussed.

Theoretical and Practical Implications

Aron et al. (2013) drew a connection between the human desire to grow as a person, in terms of world views, experience and understanding, and the way to achieve such expansion.

It is proposed that disclosing personal information in the context of a conversation towards another person facilitates an exchange of viewpoints. By comparing and contrasting each other's viewpoints, we experience growth, thus fulfilling our innate desire. This desire of self-expansion can also be seen as a form of motivation to further understand the world around us, which is known as epistemic motivation. Epistemic motivation is part of the subcategory intrinsic motivation, describing internal desires and interests which are being pursued for the sake of being pursued and the pleasure or satisfaction it brings. This motivation can be measured when looking at student engagement. Student engagement describes a student's internal motivation and perspective towards a study. Students' motivation and their attitude towards a class is predictive of their performance in class and their grades (Lei et al., 2018). Establishing the baseline theory, happy students equal good results.

We explored whether students trusting their mentors would be an underlying factor in the relationship between self-disclosure (the method to create an opportunity for growth) and student engagement. The current study has provided no such indication. While trust did seem to mediate self-disclosure and student engagement, the overall model did not hold. This suggests that there are other factors that play a role in this model and that have not been explored in this study. However, the interesting aspect is that among the subgroups of self-disclosure, relevance was significantly related to trust. Thus our findings imply that trust plays a role in the formation of interhuman mentor-relationships.

Within the current body of research, regarding peer-mentoring, this research falls somewhat in the middle. It is in alignment with previous literature, stating that relevant self-disclosure receives a high response rate (Clark et al., 2018) and that trust is an important factor to be considered when focusing on the nature and development of relationship-based mentoring (Hold & Varagona, 2019). However, this research was conducted on Aron et al.'s (2013) premise that self-disclosure is a method to further develop oneself. Contrary to that,

Leary et al (2007) proposes in their research that the underlying motivation for self-expansion, via self-disclosure, is founded in our desire to be liked by others and thus is outwards rather than inwards directed. This paper indicates that there is a connection between self-disclosure and our connection to others, which influences our attitudes regarding our motivational level. However, literature has suggested that those interpersonal relationships are influenced by the individual's attachment style (Anders & Tucker, 2000). An anxious attachment style is theorized to be connected to a high amount of self-disclosure (Hudson & Fraley, 2017) thus perhaps future research could try to draw more connections between the individual attachment styles and forms of self-disclosure. The literature and this study's findings suggest that a tailored approach of type and quantity of self-disclosure per class or student might be most beneficial for the mentees.

The real-world implications of this study and general model can be viewed in regards to teaching. By focusing on disclosing relevant information to students, trust is facilitated, thus being selective about the type of information being disclosed might be more important than disclosing personal information for the sake of being personal. On another level, mentoring as the general topic of this research is also being used outside of academia, for example in the practice of management and leadership. In the 70s, business strategies were proposed focusing on the performance of the individual and being generally number- rather than emotion-focused (Pixely, 2002). However, after the financial crisis a shift in mentality happened, placing the individual as a multifaceted being and not as a fully rational individual into perspective again, which led to new definitions of effective leadership (McCann & Sweet, 2014). As such studies on student engagement and self-disclosure are able to provide more incentives on how to best help people and how to motivate and educate mentis in a way that it supports their intrinsic motivation to further their personal development. This research

displays steps into the direction of further explaining the makings of how to motivate people. However, further research is required to fully establish how to increase the student well-being.

Limitations and future research

Possible explanations for the not significant peer-mentor and faculty-mentor models might be self-disclosure being of less importance than expected. Furthermore, other students might be influencing the overall classroom experience, affecting trust and student engagement (Laursen & Veenstra, 2021). Consequently, following studies could include peer-relationships as a moderator to further explore this option.

Methodological limitations of this study, which have to be considered are the sample size of 95, a small sample size vulnerable to type I and type II error, as well as to potential confounding variables, as mentioned above. Furthermore, this study was only done with first year students of the University of Groningen, providing less diversity in age and socioeconomic status. All participants being first year university students could cause low generalizability. Moreover, due to the Covid-19 pandemic the course Academic Skill was, for the first half of the academic year, the only in-person class the students had. Possible results of that are uncertain but could entail an effect on the student-mentor relationships. The course Academic Skill ran over the course of the entire academic year, yet the study focuses on one measurement at the end of the year. Future research could profit from data collection at various points in time.

This study's goal was to establish a relationship between the aforementioned variables. It was partially successful in establishing a relationship between relevant self-disclosure and trust (path a) as well as, a relationship between trust and student-engagement (path b). The study's findings suggest that trust has a mediating effect on the other two variables, implying that trust is worth considering in future research. Other studies might also benefit from exploring the different subcategories of self-disclosure and its effects in an academic setting

compared to its effect in a more casual environment. Furthermore, considering the relationship among peers in general as a moderating factor, as well as the class's overall opinion regarding the mentors might further illuminate a different perspective. Students might be influenced by their peers' opinion and thus have a different perspective on their individual relationship to their mentor. To give more room to the complexity of the relationships, future researchers might want to consider conducting research during varying times of the year, giving a more holistic perspective on the development of mentor and mentee relationships.

Conclusion

Trust is connected to self-disclosure and student engagement but has to be further explored. Anxious attachment style is not correlated with the other variables and the relationship between self-disclosure and student engagement has to be further explored in future research. However, there seems to be an indication for relevant self-disclosure being a valuable future lead in following studies. Rather than disclosing random information, mentors might benefit from disclosing topic-related information to their students.

References

- ANDERS, S. L., & TUCKER, J. S. (2000). Adult attachment style, interpersonal communication competence, and social support. *Personal Relationships*, 7(4), 379–389. <https://doi.org/10.1111/j.1475-6811.2000.tb00023.x>
- Aron, A., Lewandowski, G. W., Mashek, D., & Aron, E. N. (2013). *The Self-Expansion Model of Motivation and Cognition in Close Relationships*. Oxford University Press.
- Cavanagh, A. J., Chen, X., Bathgate, M., Frederick, J., Hanauer, D. I., & Graham, M. J. (2018). Trust, Growth Mindset, and Student Commitment to Active Learning in a College Science Course. *CBE—Life Sciences Education*, 17(1), ar10. <https://doi.org/10.1187/cbe.17-06-0107>
- Cayanus, J. L., & Martin, M. M. (2004). An instructor self-disclosure scale. *Communication Research Reports*, 21(3), 252–263. <https://doi.org/10.1080/08824090409359987>
- Cayanus, J. L., & Martin, M. M. (2008). Teacher Self-Disclosure: Amount, Relevance, and Negativity. *Communication Quarterly*, 56(3), 325–341. <https://doi.org/10.1080/01463370802241492>
- Cayanus, J. L., Martin, M. M., & Goodboy, A. K. (2009). The Relation Between Teacher Self-Disclosure and Student Motives to Communicate. *Communication Research Reports*, 26(2), 105–113. <https://doi.org/10.1080/08824090902861523>
- Chevrier, B., & Lannegrand, L. (2021). The relationship between academic motivation and basic psychological needs within the freshman year context: a longitudinal person-oriented approach. *European Journal of Psychology of Education*. <https://doi.org/10.1007/s10212-021-00569-7>
- Ching Sing Chai, Lin, P.-Y., King, R. B., & Siu, M. (2021). Intrinsic motivation and sophisticated epistemic beliefs are promising pathways to science achievement:

- Evidence from high achieving regions in the east and the west. *Frontiers in Psychology*, 12.
- Clarke, J., Poole, F. J., Katarina Pantić, Hamilton, M., Sun, C., & Allan, V. H. (2018). How near peer mentoring affects middle school mentees. In *Proceedings of the 49th ACM Technical Symposium on Computer Science Education*.
- Credé, M., & Phillips, L. A. (2011). A meta-analytic review of the Motivated Strategies for Learning Questionnaire. *Learning and Individual Differences*, 21(4), 337–346.
<https://doi.org/10.1016/j.lindif.2011.03.002>
- Dalley, S. E., Bron, G. G., Hagl, I. F. A., Heseding, F., Hoppe, S., & Wit, L. (2019). Bulimic symptoms in a sample of college women: disentangling the roles of body size, body shame and negative urgency. *Eating and Weight Disorders - Studies on Anorexia, Bulimia and Obesity*, 25(5), 1357–1364. <https://doi.org/10.1007/s40519-019-00771-z>
- Deb, S., Esben Strodl, & Sun, J. (2015). *Academic stress, parental pressure, anxiety and mental health among Indian high school students*.
- Deci, E. L., & Ryan, R. M. (1985). Intrinsic Motivation and Self-Determination in Human Behavior. *Contemporary Sociology*, 17(2), 253. <https://doi.org/10.2307/2070638>
- Forsyth, P. B., Adams, C. M., & Hoy, W. K. (2012). Collective trust: Why schools can't improve without it. *Journal of Educational Administration*, 50(2), 255-257.
<https://doi.org/10.1108/0957823121210611>
- Fredricks, J. A., & McColskey, W. (2012). The measurement of student engagement: A comparative analysis of various methods and student self-report instruments. In S. L. Christenson, A. L. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement*. (pp. 763–782). Springer Science + Business Media.
https://doi-org.proxy-ub.rug.nl/10.1007/978-1-4614-2018-7_37

- Gray, C. E., McIntyre, K. P., Mattingly, B. A., & Lewandowski, G. (2020). Self-concept change at work: Characteristics and consequences of workplace self-expansion. In *Interpersonal Relationships and the Self-Concept*.
- Hayes AF (2013) Introduction to mediation, moderation, and conditional process analysis: a regression-based approach. Guilford Press, New York
- Hold, J. L., & Varagona, L. M. (2019). *The perceived impact on nursing students of their trust in faculty*.
- Howard, J. L., Marylène Gagné, & Alexandre. (2020). Putting the pieces together: reviewing the structural conceptualization of motivation within SDT. In *Motivation and Emotion* (pp. 1–16).
- Hoy, W. K. (n.d.). *Student Trust | Wayne K. Hoy*. Retrieved June 11, 2022, from <https://www.waynehoy.com/student-trust/>
- Hudson, N. W., & Robert Chris Fraley. (2017). Adult attachment and perceptions of closeness. *Personal Relationships*, 24, 17–26.
- Iwanaga, K., Blake, J., Yaghmaian, R., Umucu, E., Chan, F., Brooks, J. M., Rahimi, M., & Tansey, T. N. (2018). Preliminary validation of a short-form version of the Attachment Style Questionnaire for use in clinical rehabilitation counseling research and practice. *Rehabilitation Counseling Bulletin*, 61(4), 205–216.
<https://doi-org.proxy-ub.rug.nl/10.1177/0034355217709477>
- Jenny, Theo van Tilburg, & Dykstra, P. A. (2006). *Loneliness and social isolation*.
- Jurek, P., & Besta, T. (2019). Employee self-expansion as a mediator between perceived work conditions and work engagement and productive behaviors. *Current Psychology*, 40, 3048–3057.

- Karcher, M. J., Davidson, A. J., Rhodes, J. E., & Herrera, C. (2010). Pygmalion in the program: The role of teenage peer mentors' attitudes in shaping their mentees' outcomes. *Applied Developmental Science, 14*, 212–227.
- Kaya, Y., & Fatma Öz. (2020). *The roles of adolescents' perceived parental attitudes and attachment styles in their self-perception : A structural equation modelling.*
- Laursen, B., & Veenstra, R. (2021). Toward understanding the functions of peer influence: A summary and synthesis of recent empirical research. *Journal of Research on Adolescence : The Official Journal of the Society for Research on Adolescence, 31* 4, 889–907.
- Law, D. D., Hales, K., & Busenbark, D. (2020). Student success: A literature review of faculty to student mentoring. *Journal on Empowering Teaching Excellence, 4*(1), 6.
- Leary, M. R. (2007). Motivational and emotional aspects of the self. *Annual Review of Psychology, 58*, 317–344.
- Lee, H. (2019). Teachers' negative emotional feedback can facilitate students' learning: the role of epistemic motivation in undertaking divergent- and convergent-thinking tasks. *Educational Psychology, 39*, 900–922.
- Lee, S.-Y., & Kang, Y.-J. (2016). Influence of instructor trust on learning flow and academic achievement in dental hygiene students. *Journal of Korean Society of Dental Hygiene, 16*, 687–693.
- Lei, H., Cui, Y., & Zhou, W. (2018). Relationships between student engagement and academic achievement: A meta-analysis. *Social Behavior and Personality, 46*, 517–528.
- Li, W., & Li, Y. (2010). An analysis on social and cultural background of the resistance for china's education reform and academic pressure. *International Education Studies, 3*, 211–215.

- McCann, J., & Sweet, M. (2014). The perceptions of ethical and sustainable leadership. *Journal of Business Ethics, 121*(3), 373–383.
<https://doi-org.proxy-ub.rug.nl/10.1007/s10551-013-1704-4>
- McIntyre, K. P., Mattingly, B. A., Lewandowski, G., & Simpson, A. (2014). Workplace self-expansion: Implications for job satisfaction, commitment, self-concept clarity, and self-esteem among the employed and unemployed. *Basic and Applied Social Psychology, 36*, 59–69.
- Mohamed, S., Amin, S., & El sayed, N. (2022). Perceived Faculty Support and Burnout among Students' of Nursing Faculty. *Assiut Scientific Nursing Journal, 0*(0).
<https://doi.org/10.21608/asnj.2022.108139.1272>
- Molleman, E., Nauta, A., & Buunk, B. P. (2007). Social Comparison-Based Thoughts in Groups: Their Associations With Interpersonal Trust and Learning Outcomes. *Journal of Applied Social Psychology, 37*(6), 1163–1180.
<https://doi.org/10.1111/j.1559-1816.2007.00207.x>
- Olle ten Cate, van, & van. (2012). Academic achievement of students tutored by near-peers. *Indian Journal of Medical Ethics, 3*, 6–13.
- Peng, Z., Gao, B., & Zhao, H. (2019). Coaching leadership and subordinates' career success: The mediating role of leader–member exchange. *Social Behavior and Personality: An International Journal, 47*(11), 1–8. <https://doi-org.proxy-ub.rug.nl/10.2224/sbp.8406>
- Pintrich, P. R., Smith, D. A. F., Garcia, T., & Mckeachie, W. J. (1993). Reliability and Predictive Validity of the Motivated Strategies for Learning Questionnaire (Mslq). *Educational and Psychological Measurement, 53*(3), 801–813.
<https://doi.org/10.1177/0013164493053003024>
- Pixley, J. (2002). Emotions and economics. *The Sociological Review, 50*(Suppl 2), 69–89.
<https://doi-org.proxy-ub.rug.nl/10.1111/j.1467-954X.2002.tb03592.x>

- Sprecher, S., Treger, S., & Wondra, J. D. (2012). Effects of self-disclosure role on liking, closeness, and other impressions in get-acquainted interactions. *Journal of Social and Personal Relationships, 30*(4), 497–514. <https://doi.org/10.1177/0265407512459033>
- Sprecher, S., Treger, S., Fisher, A., Hilaire, N., & Grzybowski, M. (2015). Associations Between Self-Expansion and Actual and Perceived (Dis)Similarity and Their Joint Effects on Attraction in Initial Interactions. *Self and Identity, 14*(4), 369–389. <https://doi.org/10.1080/15298868.2014.1003592>
- Taylor, N., Hall, S., Carr, N. J., Stephens, J. R., & Border, S. (2015). Near peer teaching in medical curricula: integrating student teachers in pathology tutorials. *Medical Education Online, 20*.
- Thompson, S. K. (2008). *Social learning theory*.
- Turman, P. D. (2003). Coaches and cohesion: The impact of coaching techniques on team cohesion in the small group sport setting. *Journal of Sport Behaviour, 26*(1), 86–104.
- Wallace, H. M., & McIntyre, K. P. (2021). Social autonomy ` social empowerment: The social self-restriction model. In *Journal of Theoretical Social Psychology*.
- Williams, B., & James Baird Fowler. (2014). Can near-peer teaching improve academic performance? *The International Journal of Higher Education, 3*, 142–149.
- Xu, S., Yang, Z., Liu, P., & Yang, F. (2022). How does mentoring affect mentees innovation behavior: The role of self-expansion and social face consciousness. In *Current Psychology*.
- Žardeckaitė-Matulaitienė, K., & Paluckaitė, U. (2013). THE RELATION BETWEEN TEACHER'S SELF-DISCLOSURE AND STUDENT'S MOTIVATION TO LEARN. *European Scientific Journal, 9*, 1857–7881.
- Zhoc, K. C. H., Webster, B. J., King, R. B., Li, J. C. H., & Chung, T. S. H. (2018). Higher Education Student Engagement Scale (HESES): Development and Psychometric

Evidence. *Research in Higher Education*, 60(2), 219–244.

<https://doi.org/10.1007/s11162-018-9510-6>