The role of mentor self-disclosure and identification in student engagement

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PSB3E-BT15: Bachelor Thesis

Group 33

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June 29, 2022

Abstract

Previous research showed the impact of teacher behaviour on student outcomes. This study focused on the effects of teacher self-disclosure on student engagement, and investigated whether this is mediated by identification with the teacher. This was studied for both the *peer mentor* and the *faculty mentor*. The sample size consisted of 107 first-year psychology students. The Teacher Self-Disclosure Scale and the Higher Education Student Engagement Scale were used to measure the variables. No mediating effects were found. What we did find was that self-disclosure of the *faculty mentor*, and especially the part where they disclose 'relevant course information' was associated with more identification and student engagement. In the case of the *peer mentor*, only identification was associated with more student engagement. The differences between the mentors are surprising and yet unclear. The results represent the complexity in which *peer* and *faculty mentors* can influence students with their behavior. This study contributes to the existing literature focused on the effective use of teacher behavior for positive student outcomes. Future research may further look at mentor roles and their different effects on student outcomes such as student engagement, especially in a longitudinal design setting. The measurement of changes in the variables over time can provide very valuable insights.

Keywords: self-disclosure, identification, student engagement, teacher behavior, mentors

The role of mentor self-disclosure and identification in student engagement

Most adults remember that one teacher who had a major impact on their school life. This impact can have manifested itself in many ways, from small motivation enhancements to the development of self-confidence (Johnson & Prom-Jackson, 1986). Hattie (2003) found that teachers account for an impressive 30% of the variance in student's achievement, which makes it the most impactful external factor. Thus, the field of educational psychology has been focusing on instructional effectiveness a lot in the past decades (Den Brok et al., 2004). Given the impact of teachers on students, it is not surprising that teacher behavior has been linked to various positive educational outcomes (Singh, 2021; Shah, 2009). Learning more about the effect of teacher behavior on students can offer new insights to effective teaching behavior.

One position of a teacher that Hattie (2003) connected to student achievement is peer mentoring. This is in line with research from Pilot et al. (2021), who pointed out the improved academic outcomes of students with a peer mentor over students that did not have a peer mentor. These positive outcomes were found mostly in first-year students and range from increased academic achievement (Chester et al., 2013; Leidenfrost et al., 2011) to improved problem-solving skills (Smith & Buron, 2013) and more engagement in the course (Collings et al., 2014). Peer mentoring is defined as support offered to peers (students) that includes the provision of ongoing emotional support or empathy as well as guidance or advice between peers (Dennis, 2003). Important conditions of this reciprocal relationship are that the peer mentor already experienced the situation that the student is experiencing at that time, and there is a transmitting of information and experience from the peer mentor to the peer mentee (Crisp & Cruz, 2009). Despite the many associations between peer mentoring and positive educational outcomes, little is known about how the peer-mentor role can be fulfilled to have the most impact on academic outcomes (Bunting, 2014).

An interesting educational outcome is student engagement. Student engagement has gained a lot of attention because it is a malleable concept that can be influenced by schools and their teachers and is a robust predictor of students' academic grades, retention, and graduation (Appleton et al., 2008; Fredricks et al., 2004; Furlong & Christenson, 2008; Jimerson et al., 2003). Klem and Connell (2004) stated that students that are engaged do more than just show up and perform well in class; they also exert effort, persevere, self-regulate their behavior toward goals, and embrace challenges and learning. To define engagement, this study utilizes the self-determination theory (SDT) of Edward Deci and Richard Ryan (1985). This model emphasizes the different reasons or goals a person can have in order to take action. Engagement is an influential concept on human behavior, driving us to satisfy the three primary needs, as defined by the SDT: *autonomy*, *competence,* and *relatedness*. *Autonomy* refers to the need to have a certain level of control over their own behavior and their lives; *competence* concerns achievements, knowledge, and skills, and refers to the need of experiencing oneself as capable of accomplishing the pursued outcomes; *relatedness* concerns the need of humans to have a feeling of belonging and connectedness (Ryan & Deci, 2008, 2017). To understand the influence of the mentor on student engagement, the self-system model of motivational development (SSMMD) was used (Connell & Wellborn, 1991; Niemiec & Ryan, 2009; see figure 1). This model originated from the SDT and has been widely used to study the effect of teacher-student relationships on engagement (Furrer et al., 2014; Cheon & Reeve, 2015). The model provides a framework which can help identify the social factors of the teacher-student relationship that can fuel student engagement in the classroom by fulfilling students' primary needs (autonomy, competence, and relatedness).

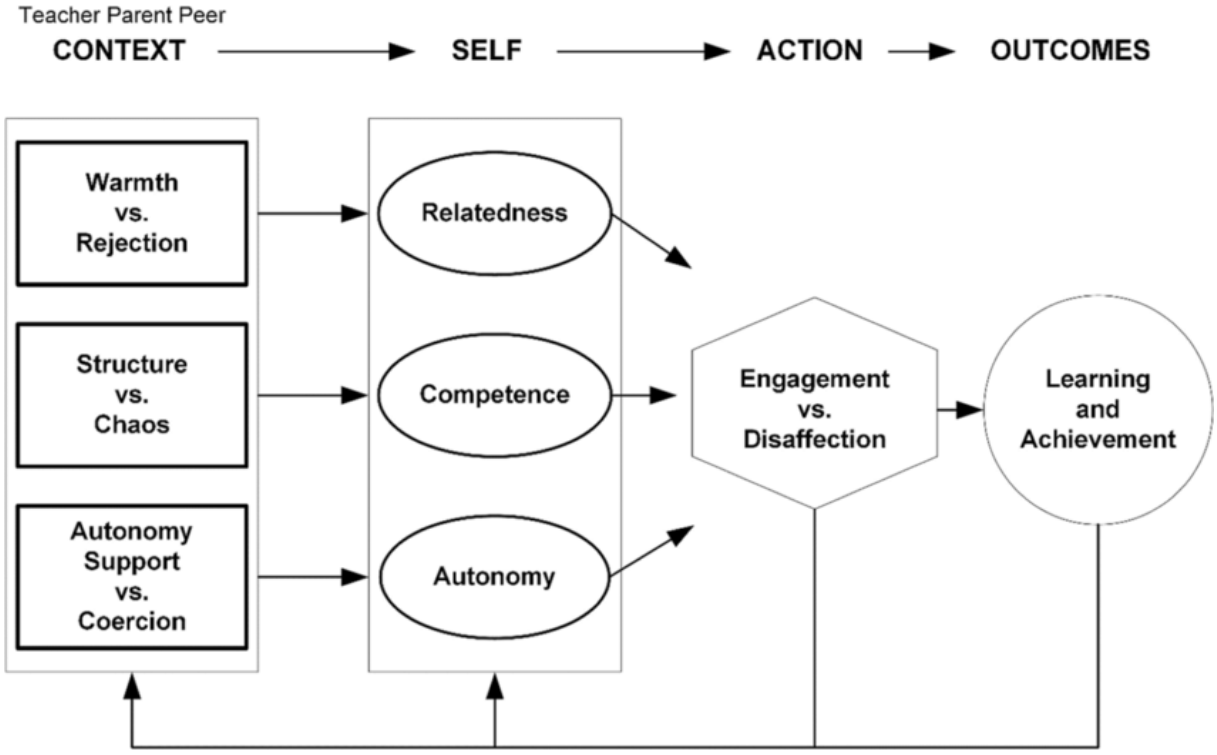


Figure 1. The self-system process model of motivational development (Connell & Wellborn, 1991).

The 'context' components of the model: 'warmth, provision of structure, and autonomy support', all of which have been shown to positively contribute to classroom engagement (Skinner & Belmont, 1993), can be influenced by teachers. This study aims to contribute to the knowledge of the use of teachers' specific behavioral traits that can enhance student engagement.

A widely studied component of teacher behavior is teacher self-disclosure (Žardeckaitė-Matulaitienė & Paluckaite, 2013). Teacher self-disclosure refers to what Sorensen (1989) defined as: "statements in the classroom about the self that may or may not be related to the subject content but reveal information about the teacher that students are unlikely to learn from other sources". In practice, teacher self-disclosure could involve a peer mentor telling a personal story or life experience in order to elucidate the learning material and increase the participation of the students. The increased participation can be explained by a concept called 'disclosure-reciprocity effect', which describes the relation between

receiving disclosure and the urge to respond in a similar way (Greene et al., 2006). This is in line with the research of Dindia (2001), who found supporting evidence that disclosure promotes further disclosure.

Yet, previous research has determined some disagreements among the effect of teacher self-disclosure on student outcomes. Where Goldstein and Benassi (1994) found a positive association between teachers' self-disclosure and the participation of students in the course, Wambach and Brothen (1997) failed to replicate this. Also, Cayanus and Martin (2008) said that the impact of self-disclosure on student affective learning was relatively low. Some researchers were more critical of the concept of self-disclosure itself. As said by Cayanus and Martin (2016); “it is not the sender’s intent but the receiver’s perception that determines the effectiveness and appropriateness of his instructional behavior”. There are a lot of subjective factors that influence the perception of the receiver when the teacher discloses. With this in mind, the effectiveness of teacher self-disclosure should be monitored as objectively as possible.

In the literature, there is an increasing emphasis to focus on three dimensions of teacher self-disclosure: amount, relevance, and valence (Cayanus & Martin, 2008). Each of the three dimensions Cayanus and Martin developed for their self-disclosure measure represent a different part of the multidimensional concept. *Amount* stands for the frequency that the teacher is self-disclosing to their students. *Relevance* means that the teacher discloses course relevant information. The last dimension, *valence*, highlights that self-disclosure can have a positive or negative connotation. Despite this multidimensionality, it is important to note that self-disclosure and teacher self-disclosure are two different terms. The difference lies as said by Lannuti and Straumann (2006), in the degree of immediacy and intimacy, which should not cross the professional boundary between teacher and student. Although every dimension plays a unique role in the concept, they also interact with each other. For

example, when a teacher discloses in a positive way and uses relevant course material, the amount still plays a role.

Cayanus and Martin have done a lot of research on teacher self-disclosure, using the aforementioned three dimensions. They found that the disclosure of high *amounts* of *relevant* information is associated with teacher clarity, and students' affect for the teacher and the course (Cayanus & Martin, 2008). High *amount* of information that was not negative (*valence*), related to more learning and motivation. Furthermore, it increases students' motives to communicate with their teacher (Cayanus et al., 2009). These findings illustrate an importance of the behavior of the teacher on the interpersonal teacher-student relationship. But the choice of self-disclosing can also be counterproductive. As noted by James (2009), teacher self-disclosure is not static, and the teacher entering the curriculum personally can have a counterproductive effect on the learning process of students. Because of these positive and negative outcomes, it is important to uncover the factors that play a role in the process of enhancing student's engagement via self-disclosure.

A factor that has received attention within many different relational constructs is identification (Ding et al., 2017). However, most studies focused on an individual's identification with an organization or university, instead of one person like a student's mentor. This is remarkable, because the object of identification could just as well be a person, for example, a family member, a famous person, or a teacher. Ybema and Buunk (1995) defined identification as 'seeing someone as a likable person that is similar to yourself and in whom you recognize your own situation. Laughlin (1979) stated that when identification takes place, an emotional affiliation is created by making oneself like the other person. During this process, the person takes over certain thoughts, behaviors, or attributes from the object of identification. According to Cramer (2006; 1991), the function of identification varies by age group. While the function of identification in childhood is to become more autonomous and

independent from their parents, during late adolescence and young adulthood, the function of identification is primarily focused on the formation of identity. This is in line with Brown and Braun (2013), who said that peers become increasingly influential in the life of a child when they mature, because the role of the parent decreases. It therefore follows that identifying with a peer mentor could have a significant impact on a university student.

Although the concept identification has not been related to self-disclosure, Sprechter et al (2013) did find a link between self-disclosure and higher levels of liking and perceived similarity. According to the identification-contrast model, humans have a preference to identify themselves upward, and contrast themselves downward (Buunk, 1997). Upward comparison is comparing yourself to others who you rate as better off. It is thought that we do this to restore a sense of self-worth. In the classroom setting, upward comparison is more adaptive than downward comparison. The mentor is seen as the authority figure in class, whom students look up to. In terms of course specific knowledge, students want to get to the same level. Given the positive effects of both self-disclosure and identification, it is interesting whether they are interrelated. Like Zee et al. (2021) suggested, it is likely that a focus on certain teacher-behavior will deliver a valuable return on investment in terms of student academic achievement. This study contributes to the existing literature of teacher self-disclosure, identification and student engagement. Based on the literature, a number of hypotheses have been formulated.

H1. *Teacher self-disclosure is positively associated with student engagement.*

H2. *Teacher identification mediates the relationship between teacher self-disclosure and student engagement.*

This study focused on first year Psychology students who have both a faculty mentor and a student mentor. The student mentor is a second- or third-year psychology student, who

guides the students together with the faculty mentor. In light of Ybema and Buunks' (1997) definition of identification, you would expect a psychology student to see a more senior psychology mentor more as 'similar to oneself' rather than a faculty mentor with a graduate or post-graduate degree. Another aspect of the definition, that one 'recognizes itself in the situation of the other', is also more likely to occur in the case of a senior year psychology student than the faculty mentor. Based on this information, a final hypothesis is formulated:

H3. *The effect of the student mentor will be stronger than the effect of the faculty mentor.*

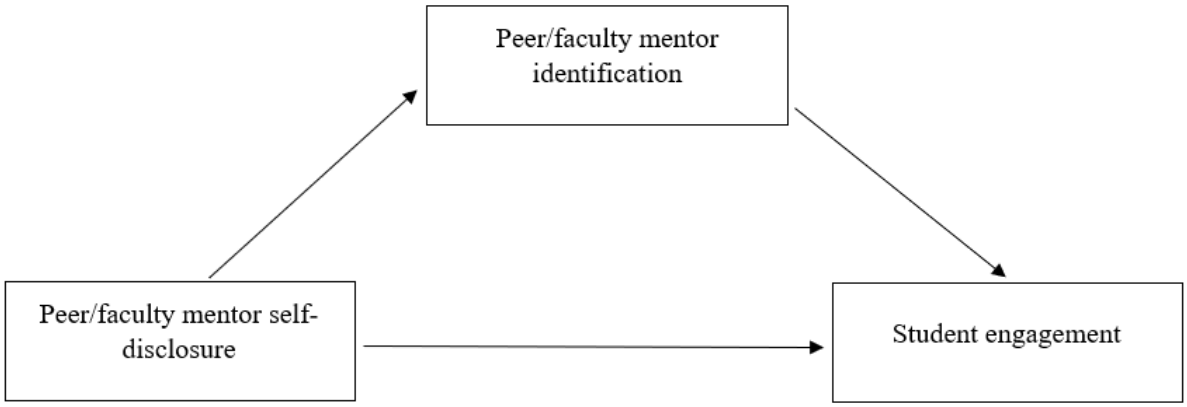


Figure 1. Proposed mediation model.

Method

Participants

All participants were first year psychology students at the University of Groningen from either the Dutch or the international track. Students from the course ”Academic Skills” were approached by members of the research team to participate in the study. The data is gathered using an online questionnaire via Qualtrics. The final sample included 107 participants. 61 participants were excluded because they had not completed the questionnaire in full. Women made up 72.9% of the sample (N = 78), men 24.3% (N= 24), and 2.8% did not specify their gender (N=3). All participants gave consent to use their data.

Measures

Cayanus’s and Martin’s (2008) Teacher Self-Disclosure Scale was developed to measure the teacher’s self-disclosure in the classroom. The measure therefore asks the respective students on 14 items to report their impressions of their teacher’s use of self-disclosure. The subjects can rate each item on how well it applies to their teacher on a seven-point Likert scale. The response-continuum thus ranges from (1) completely disagree to (7) completely agree. A differentiation is made between three aspects of self-disclosure: relevance, amount, and negativity. This study chose to focus on the positive outcomes of self-disclosure, and thus only included the components relevance ($\alpha = .88$) and amount ($\alpha = .80$). Sample items were for instance “My *peer/student-mentor* often shares his/her dislikes and likes” (amount), “My *peer/student-mentor* uses his/her own experiences to introduce a concept” (relevance). The Cronbach’s alphas in the current sample for the peer mentor were .83 (amount) and 0.88 (relevance) and for the faculty mentor .90 and .94.

To gain insight into the extent to which the students identified with their mentors, Ybema and Buunks’ (1995) ´identification scale´ was used. The scale consisted of four

questions (α = .85) that the participants answered twice, once for the *peer mentor* and once for the *faculty mentor*. The participants were instructed to keep in mind 'how well the statements described their experience' with the specific mentor. To measure this, a 7-point Likert scale is used (1= not at all; 7= very much). The Cronbach's alpha in the current sample was .88 for the peer mentor and .90 for the faculty mentor.

The dependent variable of student engagement was assessed, using the Higher Education Student Engagement Scale (HESES), (Zhoc, K. et al., 2018). The questionnaire was designed to assess student engagement. The scale included 5 subscales, of which the Academic engagement, cognitive engagement, social engagement and effective engagement subscales were used as a performance measure to explore student motivation. The five subscales of online engagement were excluded, since it did not fit the context of the academic skills course. The HESES has a Cronbach's alpha of (=0.70 to 0.87). In the current sample, the Cronbach's alpha was 0.78.

Procedure

Participants took part in a self-administered online questionnaire. There, participants were asked whether they are psychology students who are currently taking the course 'Academic Skills'. Then, general information about the study was provided, and informed consent was obtained. The concepts of peer mentors and faculty mentors were brought to the attention of the participants, after which general demographic information was collected (e.g., age, nationality). Participants were asked to think about their peer mentor or faculty mentor before answering relevant questions of the questionnaire.

Design

This study was carried out as a correlational survey study. It is part of a larger research concept of the bachelor thesis. The mediating factor was identification, to assess the indirect

effect that mentoring (Independent Variable) has on student outcome (Dependent variable). Mentoring was assessed on two levels, namely peer mentoring and faculty mentoring. Student outcome was measured through two dependent variables (Student engagement and Self-disclosure). When filling in the questionnaire, students were asked to think about either their student mentor or their faculty mentor. The independent variables are the dimensions relevance and amount of self-disclosure. The dependent variables are the factors of student engagement. The mediating variable is the identification with either the peer or faculty mentor.

Analysis

Data were analyzed using IBM SPSS Statistics Data Editor version 26. The PROCESS macro of Hayes (2013) was used to perform the mediation analysis. This extension utilizes a bootstrap approach to model testing. In this case, bootstrapping is a sort of resampling in which a single original sample is taken repeatedly, with replacement, from a large number of smaller samples of the same size. Each analysis used 5000 bootstrap re-samples, with 95 percent bias-corrected confidence intervals used to establish significance. The bootstrap approach has the advantage of being robust to the influence of non-normal samples (Bolin, 2014; Jose, 2013). As a result, only the assumptions of linearity and homoscedasticity needed to be tested. The three variables self-disclosure, identification and student engagement met both of these assumptions (Appendix A).

Results

Table 1a provides the descriptive statistics, including means, standard deviation, and Pearson's correlations between the variables for the *peer mentor*. Table 1b provides this information for the *faculty mentor*.

Table 1a

Pearson correlations, means and standard deviations of the variables regarding the peer mentor

Variable	1	2	3	4	M	SD
1. *Peer mentor* self-disclosure – relevance	-				25.02	5.23
2. *Peer mentor* self-disclosure - amount	0.278**	-			16.02	4.71
3. *Peer mentor* identification	0.147	-.058	-		18.04	4.66
4. Student engagement	0.165	0.026	0.327**	-	57.81	8.30

* = $p < .05$; ** = $p < .01$

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

Table 1b.

Pearson correlations, means and standard deviations of the variables regarding the faculty mentor

Variable	1	2	3	4	M	SD
1. *Faculty mentor* self-disclosure - relevance	-				20.04	6.99
2. *Faculty mentor* self-disclosure - amount	0.349**	-			15.04	5.49
3. *Faculty mentor* identification	0.383**	-.026	-		15.67	5.25
4. Student engagement	0.267**	0.075	0.193	-	57.81	8.30

* = $p < .05$; ** = $p < .01$

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

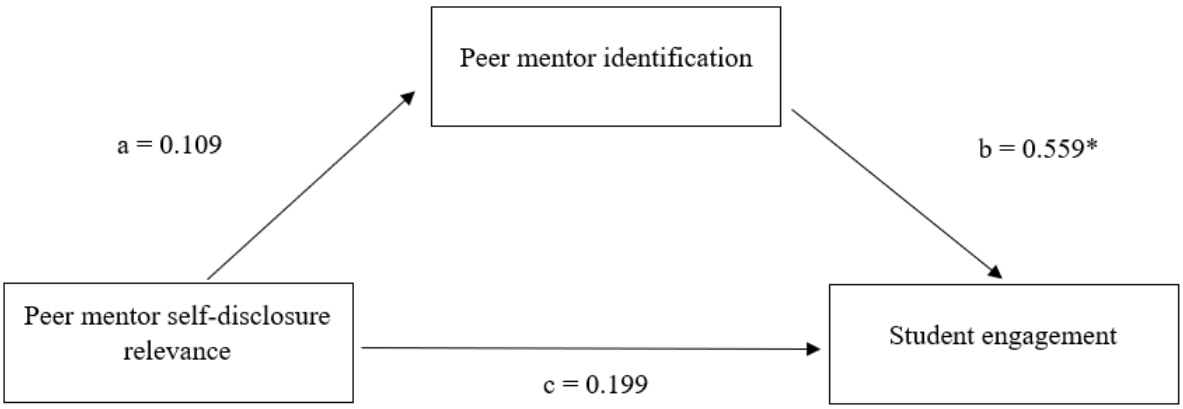
H1 predicted that teacher self-disclosure is positively associated with student engagement. This hypothesis was not supported. A direct effect between identification and student engagement was found (r = 0,320. 95% CI (0,128, 0,489)). H2 stated that teacher identification mediates the relationship between teacher self-disclosure and student engagement. In order to test this hypothesis, self-disclosure is divided into two components: relevance and amount. Following Hayes (2013), four mediation analyses were carried out using PROCESS. Student engagement was the outcome variable for all the analyses and identification with either the *peer mentor* or *faculty mentor* was the mediator. The hypothesis is not supported. Even though a full mediation effect has not been found, some direct effects emerged.

Peer mentor identification has a direct effect on student engagement on both *peer mentor* self-disclosure - relevance (B = 0.559, SE = 0.171, 95% CI (0.220, 0.897), $p < 0.005$; see figure 3), and amount (B = 0.598, SE = 0.161, 95% CI (0.278, 0.918), $p < 0.001$; see figure 4). *Faculty mentor* self-disclosure - relevance has a direct effect on *faculty mentor*

identification (*B* = 0.278, *SE* = 0.072, 95% *CI* (0.134, 0.422), *p* < 0.001; see figure 5) and student engagement (*B* = 0.263, *SE* = 0.116, 95% *CI* (0.033, 0.494), *p* < 0.05; see figure 6).

Figure 3.

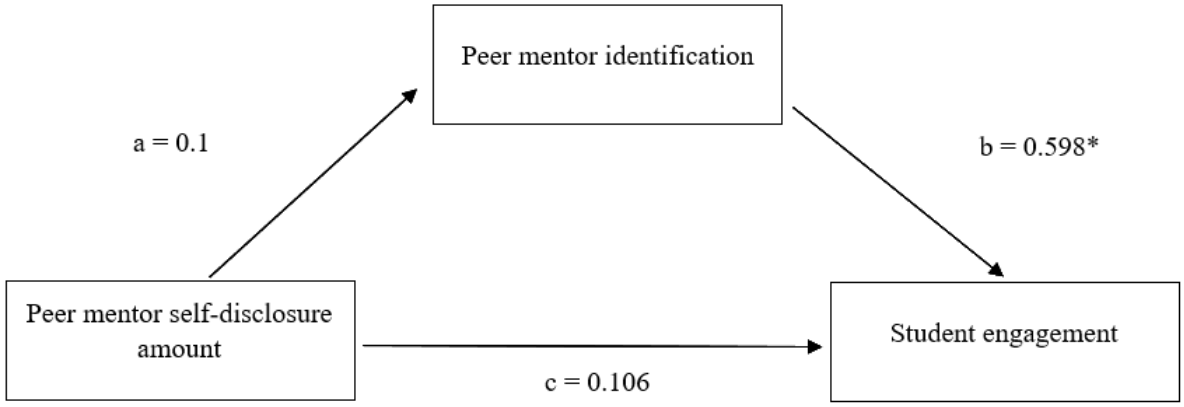
Peer mentor identification as a mediator between peer mentor self-disclosure relevance and student engagement



Note. The numbers represent the beta value (* p < ,05).

Figure 4

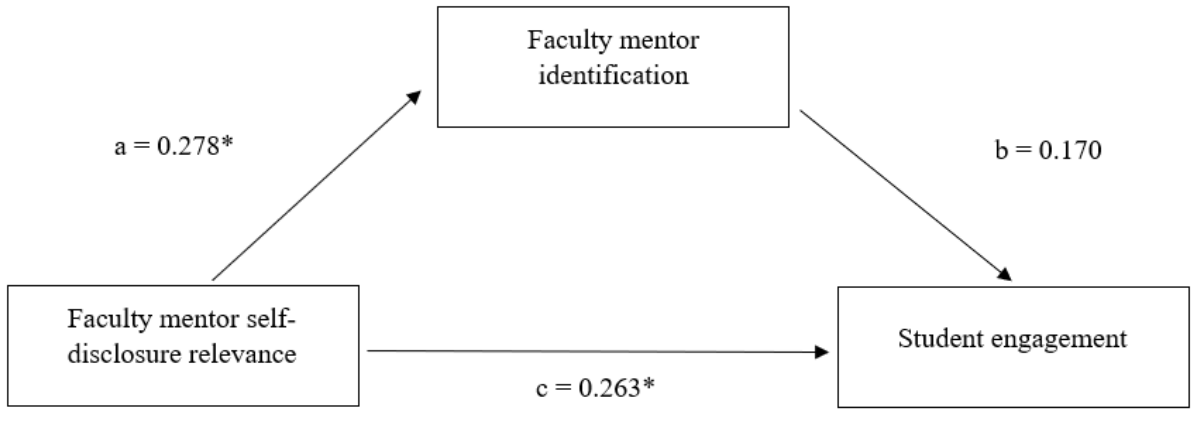
Peer mentor identification as a mediator between peer mentor self-disclosure amount and student engagement



Note. The numbers represent the beta value (* p < ,05).

Figure 5

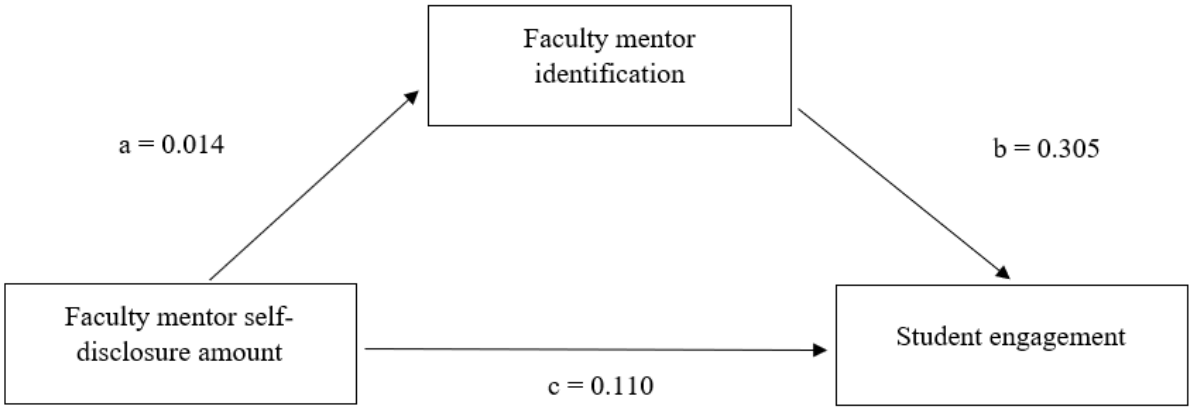
Faculty mentor identification as a mediator between faculty mentor self-disclosure relevance and student engagement



Note. The numbers represent the beta value (* p < ,05).

Figure 6

Faculty mentor identification as a mediator between faculty mentor self-disclosure relevance and student engagement



Note. The numbers represent the beta value (* p < ,05).

Discussion

The main purpose of this study was to contribute to the body of knowledge about the impact of mentors on students. H1 hypothesized that teacher self-disclosure was positively associated with student engagement. This hypothesis is not supported and will be rejected. H2 hypothesized that identification would have mediated the relationship between self-disclosure and student engagement. This hypothesis is also not supported. H3 hypothesized that the effect of the peer mentor would be stronger than the effect of the faculty mentor. This hypothesis is also not supported.

H1 would have been supported only in the case where *faculty mentors* self-disclose course relevant information. For both the *peer* and the *faculty mentor*, the amount of self-disclosure has no relation to student engagement. Since student engagement includes learning and motivation, this finding contradicts Cayanus and Martins' (2008) conclusion that self-disclosure was associated with more learning and motivation. The *faculty mentors*' self-disclosure of relevant information is also positively associated with identification (the a-path) and student engagement (the c-path). Despite these direct effects, no mediating effect has been found. This finding suggests that the self-disclosure of relevant information by the *faculty mentor* seems to predict more engagement, but could be mediated by a variable other than identification. For example, Rickert and Skinner (2021) found connections between teacher involvement and engagement through relatedness and autonomy. Future research could explore the mediating role of these factors on self-disclosure and engagement.

In the case of the *peer mentor*, also no mediation effect has been found. This result led to the rejection of the second hypothesis. Despite the fact that the assumed mediation effect has not been found, it is possible to compare the results of the *peer* and *faculty mentors*. When looking at the (not significant) results, we see that the effect of *faculty mentors* on student

engagement seems to be stronger than the effect of *peer mentors*. Thus, not only did we not find a mediation effect for both the peer and faculty mentor, it also does not appear that the role of the *peer mentor* is greater than the *faculty mentor*. These findings demonstrate a small number of associations between the variables. While the data do not indicate a causal effect, they do point to certain particular relations between self-disclosure, identification and student engagement. The positive association between self-disclosure and student engagement is in line with the research of Goldstein and Benassi (1994). Although, comparison is complicated, because earlier studies did not make a distinction between *peer* and *faculty mentors*. Since this study is the first to look at this difference, there are a number of important results.

Notably, *peer mentor* identification is positively associated with student engagement (the b-path). This is interesting because, as mentioned earlier, the identification with the *faculty mentor* seems to not have an effect on the engagement of students. This result suggests that a student being able to identify with their peer mentor predicts more engagement. Future research is needed to better understand the ways a peer mentor can increase their identifiability in order to affect the engagement of the students they are mentoring. This finding does raise new questions. For example, why does identification with the *peer mentor* have a positive association with student engagement, while identifying with the *faculty mentor* does not.

A possible explanation is that the base level of identification with the *faculty mentor* is lower than with the *peer mentor*, because students can identify with them more in terms of age or the fact that they are both studying psychology. This is in line with the suggestion of Humberd and Rouse (2016) that identification in mentoring can occur through recognition of similar aspects between the selves and the mentor. Cooper and Thatcher (2010) also pointed out that similarity is an important component of identification in the work context. If this is also the case in the context of student mentoring, it might be easier for the *faculty mentor* to

increase the level of identification by self-disclosing, because the level of identification was lower at the start. This could explain the direct effect of *faculty mentor* self-disclosure - relevance on *faculty mentor* identification. The base level of a students´ engagement might also be interesting. Roorda et al. (2017) found that the quality of dyadic relationships between student and teacher is positively associated with student engagement. It might be that students who are more engaged also self-discloses more to the teacher. This could be explained by the aforementioned reciprocal disclosure effect, which is found to be related to positive interpersonal outcomes such as liking, closeness and enjoyment (Sprecher et al., 2013).

The subjective nature of this phenomenon could also play a role. Like mentioned before, the receiver's perception is crucial in the end. If the role of the perception is very large, it might even explain the variability in the different results between the *peer* and *faculty mentor*.At last, the hierarchical structure of the mentors could play a role in the level of identification. The *faculty mentor* is the coordinator of the course, while the *peer mentor* is more of an assistant of the *faculty mentor*. According to Humbert and Rouse (2016), mentoring relationships are markedly affected by hierarchical inequalities in terms of work experience and organizational standing. Because of these differences, students and mentors might be more reluctant to disclose information about themselves, making it more difficult to discover similarities and identification. A way future research could accomplish testing this, is to do a longitudinal study where the identification with the mentor is measured at the start and end of the year. Even though a longitudinal study would not allow the researcher to say anything about causality, it will give more insight on the development of variables such as identification with both mentors and engagement over time.

Rickert and Skinner (2021) investigated the effect of teacher involvement on students' engagement in a longitudinal design, using the facets of the self-system model of motivational development. The direct effect they found not only highlighted the positive effects of

involvement on student engagement, it also predicted increases in students' enthusiastic participation with academic tasks across the year through the self-system processes. With this in mind, the self-determination theory of Deci and Ryan (1985) would suggest that teacher self-disclosure should aim to fulfill the three basic needs of the students in order to increase engagement. As mentioned earlier, teacher behavior has the most influence on this through the self-system processes warmth, structure, and autonomy support (Skinner & Belmont, 1993; see figure 1). Future research can do this by looking at which specific components of self-disclosure contribute to these three processes and how teachers can use this the best way.

The results of this study shed new light on the importance of the different components of self-disclosure of mentors to students. While the variable of self-disclosure as a whole was not significant, it was found that almost all of the variance came from the component of self-disclosing relevant information. Amount turned out to have almost no effect in this model. These findings suggest that mentors could be trained (more) in using self-disclosure that is relevant to students in their teaching.

This study is not without limitations. The outcomes of the study are first and foremost constrained by its cross-sectional design. Longitudinal research can measure changes in teacher self-disclosure, identification and engagement through the academic year. On top of that, the questionnaires were administered online, which means that each questionnaire was completed under different circumstances and that there is no standardization. Because of this, it is not possible to find out whether a respondent, for example, felt social pressure from people who were watching or was under the influence of alcohol or drugs. Also, the questionnaire consisted of 184 items, which is quite lengthy. According to Revilla and Ochoa (2017), the ideal survey length is 10 minutes, and the maximum is 20 minutes. When corrected for outliers, the mean duration of our participants to complete the questionnaire is 17.46 minutes (SD = 27.79). As a consequence, a large number of respondents did not

complete the whole questionnaire and had to be excluded. The reduced sample size has a negative effect on the statistical power of the study. A shorter questionnaire has a positive effect on the response rate (Sahlqvist et al., 2011) and survey completion rate (Kost & Correa Da Rosa, 2018). Another limitation is that this study only focused on the teachers' self-disclosure through the perception of the student. It is an inherent limitation to rely on only one viewpoint of the two-sided interaction between the student and the mentor. Future research should also include the viewpoint of the mentor, to see if their views of self-disclosure match the view of the student. Furthermore, the homogenous sample of this study is a limitation. This study focused on first year psychology students of the University of Groningen only. Finally, the gender variety within the sample is weak, since 72.9% of the participants are female. Thus, the results may not be generalizable to students of other universities, study areas or genders.

Conclusion

This research adds to the existing knowledge about the effect of teacher behavior on student engagement. The ´relevance´ component of self-disclosure appears to play the most important role in the link to identification and engagement. This is especially important for the faculty mentor. Amount appears to have no effect on the engagement of students. For the peer mentor, it turned out to be beneficial to look for ways to improve the level to which students can identify with them if they want to influence engagement. Additionally, identification with the faculty mentor has not been associated with a change in engagement. It is yet unclear where this difference between peer and faculty mentors come from. It is interesting to see that self-disclosure and identification individually do have an effect on student engagement. It paves the way for further research into how to use mentor behavior more efficiently with academic benefits for students.

References

Appleton, J. J., Christenson, S. L., & Furlong, M. J. (2008). Student engagement with school: Critical conceptual and methodological issues of the construct. *Psychology in the Schools*, *45*(5), 369–386. https://doi.org/10.1002/pits.20303

Bolin, J. H. (2014). Hayes, Andrew F. (2013). Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach. New York, NY: The Guilford Press. *Journal of Educational Measurement*, *51*(3), 335–337. https://doi.org/10.1111/jedm.12050

Brown, B. B., & Braun, M. T. (2013). Peer Relations. *Research, Applications, and Interventions for Children and Adolescents*, 149–164. https://doi.org/10.1007/978-94-007-6398-2_9

Buunk, B. P. (1997). *Health, Coping, and Well-Being: Perspectives from Social Comparison Theory* (1st ed.). Psychology Press. https://doi.org/10.4324/9780203774106

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., & Martin, M. M. (2016). 10. Teacher Self-Disclosure. *Communication and Learning*, 241–258. https://doi.org/10.1515/9781501502446-011

Cooper, D., & Thatcher, S. M. B. (2010). Identification in organizations: The role of self-concept orientations and identification motives. *Academy of Management Review*, *35*(4), 516–538. https://doi.org/10.5465/amr.35.4.zok516

Cheon, S. H., & Reeve, J. (2015). A classroom-based intervention to help teachers decrease students' amotivation. *Contemporary Educational Psychology*, *40*, 99–111. https://doi.org/10.1016/j.cedpsych.2014.06.004

Chester, A., Burton, L. J., Xenos, S., & Elgar, K. (2013). Peer mentoring: Supporting successful transition for first year undergraduate psychology students. *Australian Journal of Psychology*, *65*(1), 30–37. https://doi.org/10.1111/ajpy.12006

Collings, R., Swanson, V., & Watkins, R. (2014). The impact of peer mentoring on levels of student wellbeing, integration and retention: a controlled comparative evaluation of residential students in UK higher education. *Higher Education*, *68*(6), 927–942. https://doi.org/10.1007/s10734-014-9752-y

Connell, J. P., & Wellborn, J. G. (1991). Competence, autonomy and relatedness: A motivational analysis of self-system processes. In M. Gunnar & L. A. Sroufe (Eds.),

Minnesota Symposium on Child Psychology, Vol. 23: *Self processes in development*

(pp. 43–77). Chicago, IL: University of Chicago Press.

Cramer, P. (1991). Anger and the Use of Defense Mechanisms in College Students. *Journal of Personality*, *59*(1), 39–55. https://doi.org/10.1111/j.1467-6494.1991.tb00767.x

Cramer, P. (2007). Protecting the Self: Defense Mechanisms in Action. *Journal of Nervous & Mental Disease*, *195*(10), 881. https://doi.org/10.1097/nmd.0b013e3181572a1a

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

Deci, E. L., & Ryan, R. M. (1985). The general causality orientations scale: Self-determination in personality. *Journal of Research In Personality, 19*(2), 109-14. https://doi.org/10.1016/0092-6566(85)90023-6

Deci, E. L., & Ryan, R. M. (2008). Self-determination theory: A macrotheory of human motivation, development, and health. *Canadian Psychology/Psychologie Canadienne, 49*(3), 182–185. https://doi.org/10.1037/a0012801

Den Brok, P., Brekelmans, M., & Wubbels, T. (2004). Interpersonal Teacher Behaviour and Student outcomes. *School Effectiveness and School Improvement, 15*(3-4), 407-422. https://doi.org/10.1080/09243450512331383262

Dennis, C. L. (2003). Peer support within a health care context: a concept analysis. *International Journal of Nursing Studies, 40*(3), 321–332.

https://doi.org/10.1016/s0020-7489(02)00092-5

Dindia, K. (2001). Interpersonal Communication Research. In M. Allen (Red.), *Self-disclosure research: knowledge through meta-analysis* (1st edition, pp. 169–186). Taylor & Francis.

Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School Engagement: Potential of the Concept, State of the Evidence. *Review of Educational Research*, *74*(1), 59–109. https://doi.org/10.3102/00346543074001059

Furlong, M. J., & Christenson, S. L. (2008). Engaging students at school and with learning: A relevant construct for all students. *Psychology in the Schools*, *45*(5), 365–368. https://doi.org/10.1002/pits.20302

Furrer, C. J., Skinner, E. A., & Pitzer, J. R. (2014). The Influence of Teacher and Peer Relationships on Students' Classroom Engagement and Everyday Motivational Resilience. *Teachers College Record: The Voice of Scholarship in Education*, *116*(13), 101–123. https://doi.org/10.1177/016146811411601319

Goldstein, G. S., & Benassi, V. A. (1994). The Relation between Teacher Self-Disclosure and Student Classroom Participation. *Teaching of Psychology*, *21*(4), 212–217. https://doi.org/10.1207/s15328023top2104_2

Greene, K., Derlega, V. J., & Mathews, A. (2006). Self-Disclosure in Personal Relationships. *The Cambridge Handbook of Personal Relationships*, 409–427. https://doi.org/10.1017/cbo9780511606632.023

Hattie, J. (2003, October). *Teachers Make a Difference, What is the research evidence?* Australian Council for Educational Research Conference, Melbourne, Australia.

Humberd, B. K., & Rouse, E. D. (2016). Seeing You in Me and Me in You: Personal Identification in the Phases of Mentoring Relationships. *Academy of Management Review*, *41*(3), 435–455. https://doi.org/10.5465/amr.2013.0203

Jimerson, S. R., Campos, E., & Greif, J. L. (2003). Toward an Understanding of Definitions and Measures of School Engagement and Related Terms. *The California School Psychologist*, *8*(1), 7–27. https://doi.org/10.1007/bf03340893

Johnson, S. T., & Prom-Jackson, S. (1986). The Memorable Teacher: Implications for Teacher Selection. *The Journal of Negro Education*, *55*(3), 272. https://doi.org/10.2307/2295098

Jose, P. E. (2013). *Doing Statistical Mediation and Moderation* [E-book]. Guilford Publications.

Klem, A. M., & Connell, J. P. (2004). Relationships Matter: Linking Teacher Support to Student Engagement and Achievement. *Journal of School Health*, *74*(7), 262–273. https://doi.org/10.1111/j.1746-1561.2004.tb08283.x

Kost, R. G., & Correa Da Rosa, J. (2018). Impact of survey length and compensation on validity, reliability, and sample characteristics for Ultrashort-, Short-, and Long-Research Participant Perception Surveys. *Journal of Clinical and Translational Science*, *2*(1), 31–37. https://doi.org/10.1017/cts.2018.18

Laughlin, H. P. (1979). *The Ego and Its Defenses* (2nd ed.). Jason Aronson.

Leidenfrost, B., Strassnig, B., Schabmann, A., Spiel, C., & Carbon, C. C. (2011). Peer Mentoring Styles and Their Contribution to Academic Success Among Mentees: A Person-Oriented Study in Higher Education. *Mentoring & Tutoring: Partnership in Learning*, *19*(3), 347–364. https://doi.org/10.1080/13611267.2011.597122

Niemiec, C. P., & Ryan, R. M. (2009). Autonomy, competence, and relatedness in the classroom. *Theory and Research in Education*, *7*(2), 133–144. https://doi.org/10.1177/1477878509104318

Revilla, M., & Ochoa, C. (2017). Ideal and Maximum Length for a Web survey. *International Journal of Market Research*, *59*(5). https://doi.org/10.2501/IJMR-2017-039

Rickert, N. P., & Skinner, E. A. (2021). Parent and teacher warm involvement and student's academic engagement: The mediating role of self-system processes. *British Journal of Educational Psychology*, *92*(2). https://doi.org/10.1111/bjep.12470

Roorda, D. L., Jak, S., Zee, M., Oort, F. J., & Koomen, H. M. Y. (2017). Affective Teacher–Student Relationships and Students' Engagement and Achievement: A Meta-Analytic Update and Test of the Mediating Role of Engagement. *School Psychology Review, 46*(3), 239–261. https://doi.org/10.17105/spr-2017-0035.v46-3

Ryan, R. M., & Deci, E. L. (2017). Self-determination theory: Basic psychological needs in motivation, development, and wellness. New York, NY: Guilford Publications.

Sahlqvist, S., Song, Y., Bull, F., Adams, E., Preston, J., & Ogilvie, D. (2011). Effect of questionnaire length, personalization and reminder type on response rate to a complex postal survey: randomized controlled trial. *BMC Medical Research Methodology, 11*(1). https://doi.org/10.1186/1471-2288-11-62

Shah, S. S. A. (2009). Impact Of Teachers Behaviour On The Academic Achievement Of University Students. *Journal of College Teaching & Learning (TLC), 6*(1). https://doi.org/10.19030/tlc.v6i1.1183

Singh, P. (2021). The Role of Teachers in Motivating Students to Learn. *Technolearn An International Journal of Educational Technology, 11*(1). https://doi.org/10.30954/2231-4105.01.2021.6

Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology, 85*(4), 571–581. https://doi.org/10.1037/0022-0663.85.4.571

Smith, H., & Burton, L. J. (2013, July). *The Impact of Online Peer Mentoring on First Year Student Transition, Problem Solving Skills, and Academic Success*. The International First Year in Higher Education Conference, Wellington, New Zealand. https://doi.org/10.13140/2.1.1739.1042

Sorensen, G. (1989). The relationships among teachers' self-disclosive statements, students' perceptions, and affective learning. *Communication Education, 38*(3), 259–276. https://doi.org/10.1080/03634528909378762

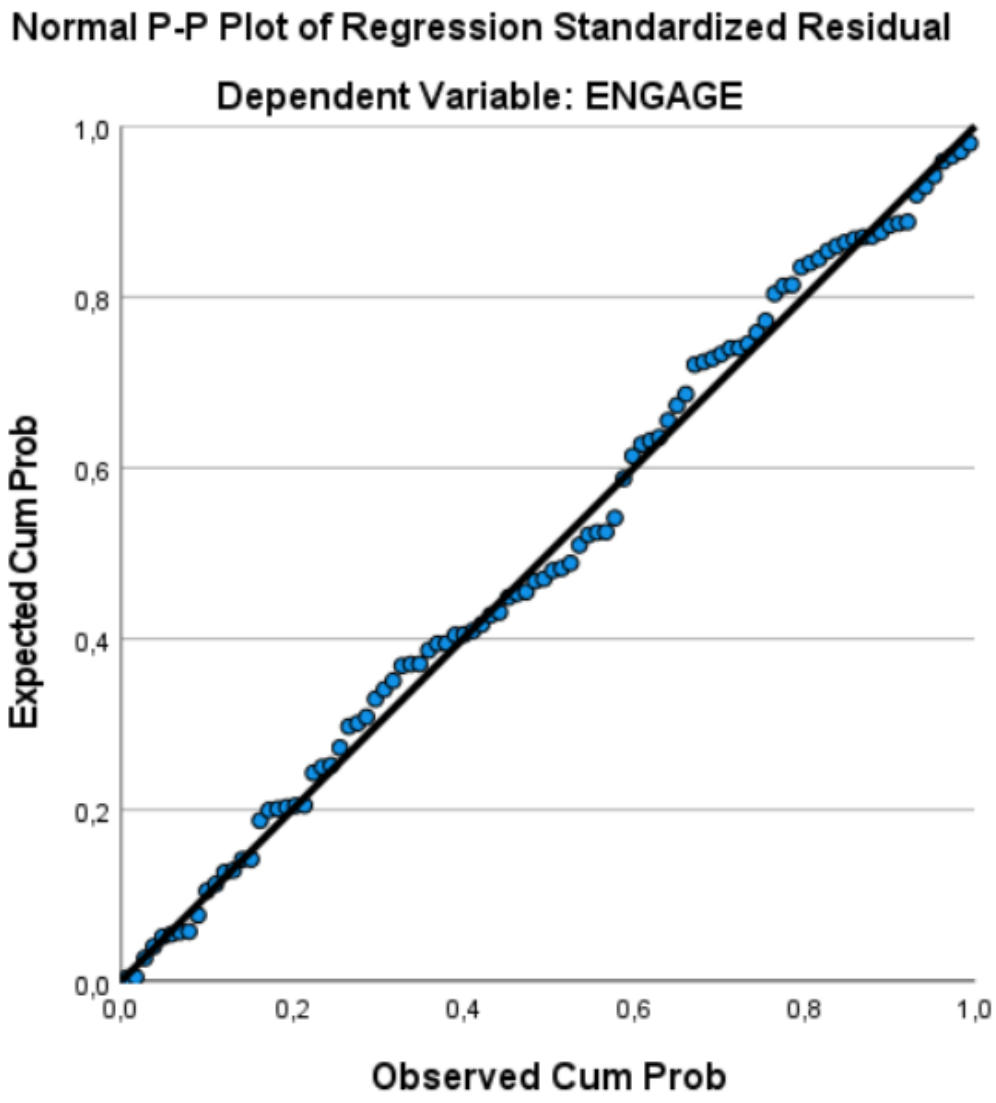
Sprechter, S., Treger, S., Wondra, J. D., Hilaire, N., & Wallpe, K. (2013). Taking turns: Reciprocal self-disclosure promotes liking in initial interactions. *Journal of Experimental Social Psychology, 49*(5), 860–866. https://doi.org/10.1016/j.jesp.2013.03.017

Wambach, C., & Brothen, T. (1997). Teacher Self-Disclosure and Student Classroom Participation Revisited. *Teaching of Psychology, 24*(4), 262–263. https://doi.org/10.1207/s15328023top2404_7

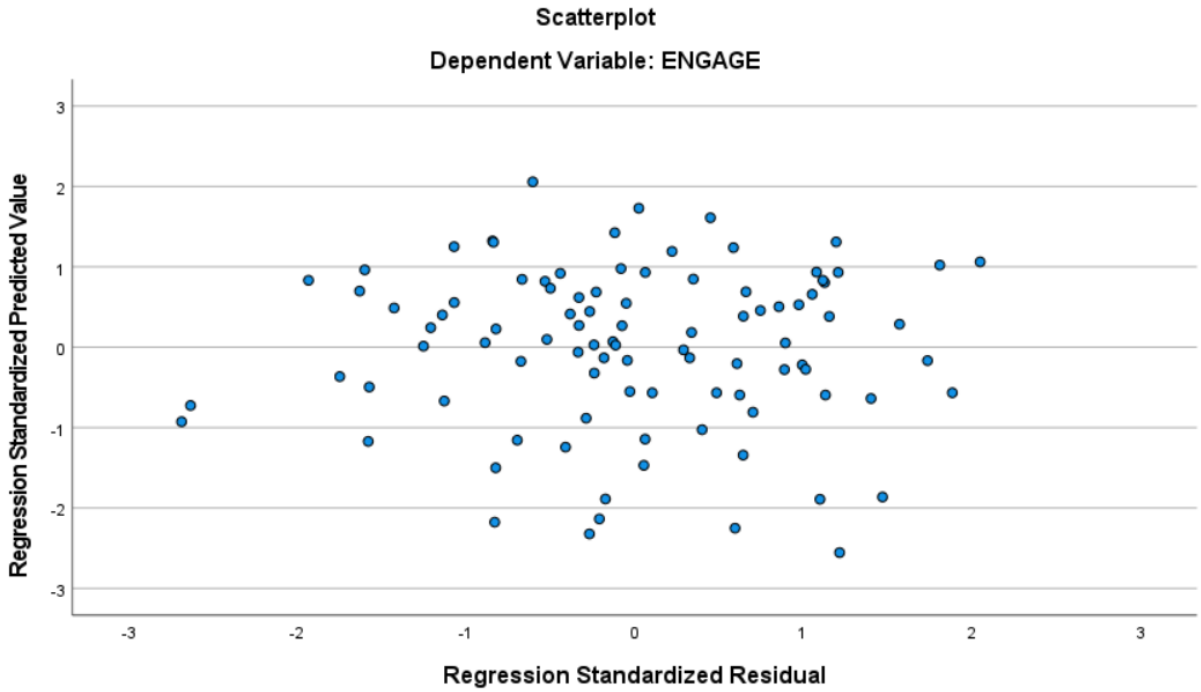
Žardeckaitė-Matulaitienė, K., & Paluckaite, U. (2013). The relation between teacher's self-disclosure and student's motivation to learn. *European Scientific Journal, 9*(28). https://doi.org/10.19044/esj.2013.v9n28p

Zee, M., Rudasill, K. M., & Bosman, R. J. (2021). A cross-lagged study of students' motivation, academic achievement, and relationships with teachers from kindergarten to 6th grade. *Journal of Educational Psychology, 113*(6), 1208–1226. https://doi.org/10.1037/edu0000574

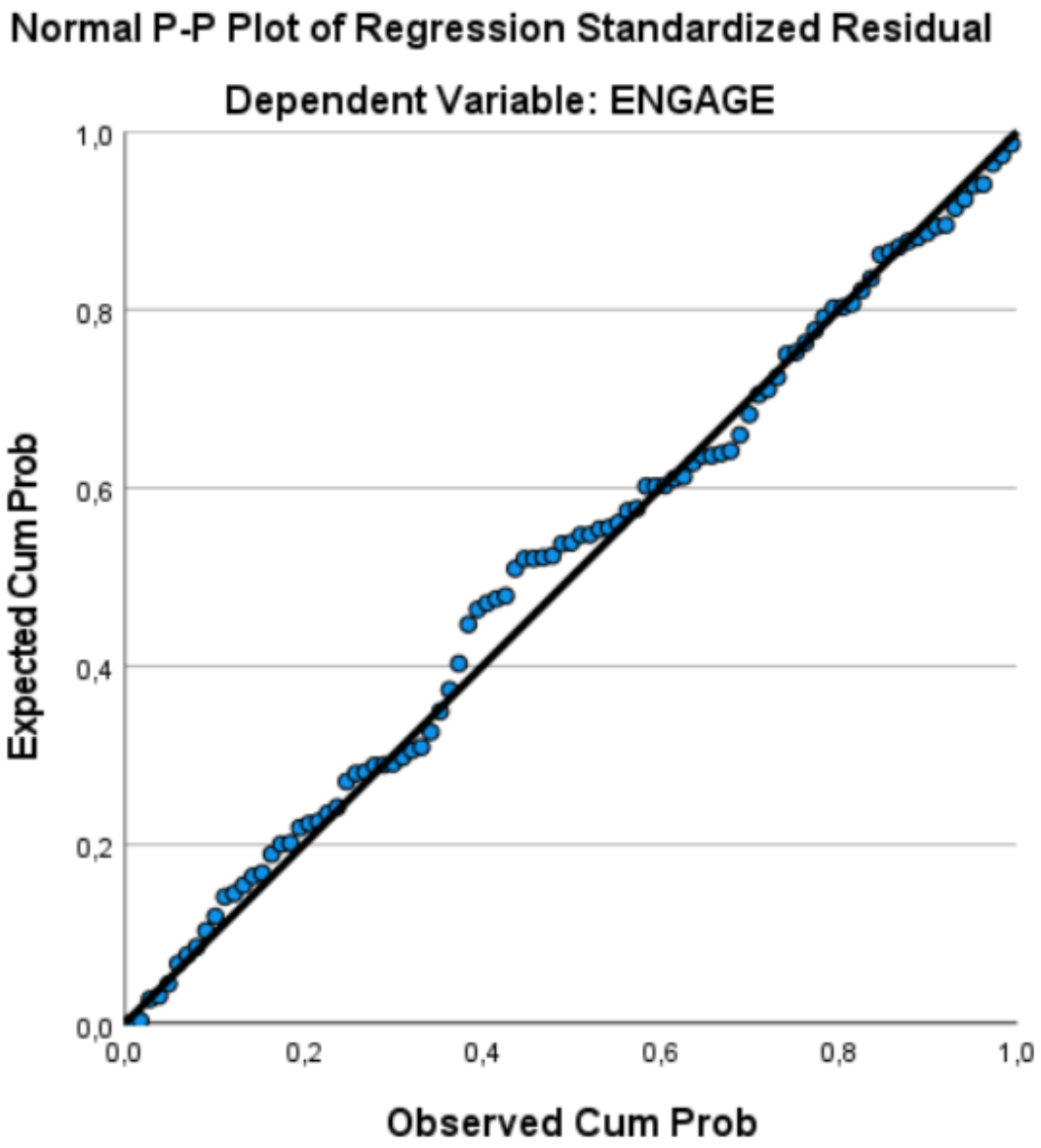
Appendix A



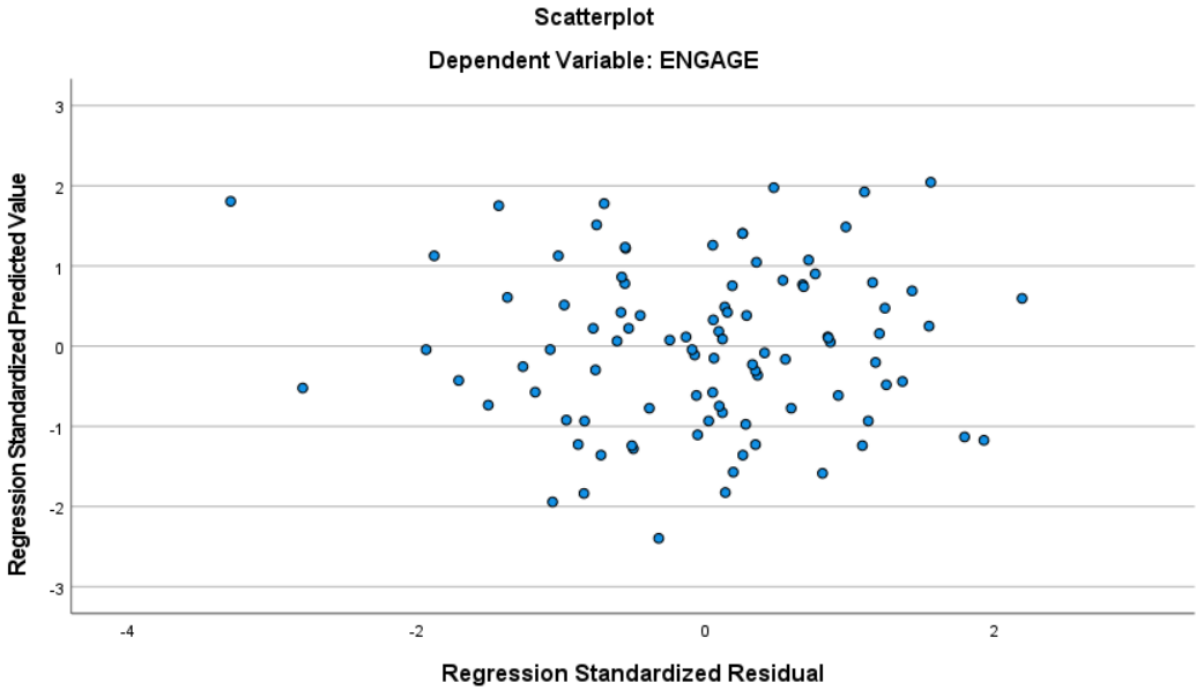
Note: P-P plot showing the linearity assumption is not violated for the peer mentor variables



Note: Scatterplot showing the homoscedasticity assumption is not violated for the peer mentor group.



Note: P-P plot showing the linearity assumption is not violated for the faculty mentor group.



Note: Scatterplot showing the homoscedasticity assumption is not violated for the faculty mentor group.