

**Teachers' Self-Disclosure and Students' Academic Motivation: Investigating Trust as
Mediator**

Daniel Jürgens

S4012747

Department of Psychology, University of Groningen

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Supervisor: Dr. S.M. Stacey Donofrio

Second evaluator: Dr. Max Agostini

In collaboration with: L. Bregkasi, T. Krahn, E. Mc Walters, N. Rack.

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Abstract

Students can benefit from feeling motivated to engage with academia. Academic motivation is associated with various positive outcomes such as academic achievements and improved mental health. Self-disclosure in the class setting can be conceived as one possible factor influencing students' academic motivation. Teachers' self-disclosure entails the following constructs: amount, relevancy, and negativity. Interpersonal trust has consistently been shown to be related to self-disclosure. The goal of this study was to examine the relationship between teachers' self-disclosure, students' trust perceptions of their teacher, and students' academic motivation. Following hypotheses were derived: 1) Frequent, relevant, and nonnegative self-disclosure will positively predict students' academic motivation. This relationship is expected to be stronger when the student trusts the teacher more; 2) the latter relationship's magnitude is greater for peer-mentors than for faculty-mentors. 97 first-year psychology students were recruited and completed questionnaires referring to their teachers' self-disclosure, perceived trust levels toward them, and their levels of academic motivation. The results show partial evidence for the first hypothesis and a lack of evidence for the second hypothesis. There was no evidence present for students' trust mediating the relationship between teachers' self-disclosure and academic motivation. Only faculty-mentors' self-disclosure positively predicted students' academic motivation. Peer-mentors' self-disclosure only predicted their students' trust levels. Post-hoc analyses revealed the relevance component of teachers' self-disclosure to be of most importance. These findings have wide-ranging implications for evidence-based teaching. Thus, teachers may pay attention to disclosing relevant personal information that matches the content of the course.

Keywords: teachers' self-disclosure, interpersonal trust, academic motivation, cognitive engagement

Teachers' Self-Disclosure and Students' Academic Motivation: Investigating Trust as Mediator

Students' academic motivation can be understood as one of the causal and driving agents in the onset and maintenance of behaviors pivotal to academic achievement and performance (Usher & Morris, 2012). It refers to a student's inclination to willfully obtain benefits associated with engaging in academic work while simultaneously finding the pursuit worthwhile and meaningful (Brophy, 1987). Lower academic motivation is not only related to higher student dropout rates but also predicts mental health (Allen et al., 2008; Gnambs & Hanfstingl, 2016; Lee et al., 2019). In other words, a greater academic motivation is linked to less suicidal ideation and a reduced likelihood of experiencing depressive symptoms among students. Furthermore, Kirkagac and Oz (2017) demonstrated that academic motivation can explain up to 10% of the variance in academic achievements of university students. For this reason, it is imperative to know how academic motivation can bring about a variety of positive outcomes.

Students can facilitate learning and obtain positive academic outcomes through multiple different means, one of them being their cognitive engagement (Zhoc et al., 2019). Cognitively engaged students are willing to expend cognitive resources beyond and above what is required (Newmann et al., 1992). At the core of cognitive engagement lies the propensity to seek intellectual challenges and understand complex and abstract ideas to a point of mastery. It was shown that students who reported higher levels of cognitive engagement subsequently reported having obtained more academic achievements than less cognitively engaged students (Zhoc et al., 2019). Furthermore, Kahu (2013) demonstrated that motivation is a focal causal agent in cognitive engagement to occur. Students with higher levels of motivation reported higher levels both in engaging with the academic material and during in-class settings (Nayir, 2017). Hence, cognitive engagement can be understood as one

of the tools with which students translate their academic motivation to increase the likelihood of success in the academic setting.

Individual and environmental factors can influence and bring about changes in motivation (Hardre, 2006; Williams & Williams 2011). Looking at students themselves, individual factors like their genuine interest in the topic at hand or personal values regarding education can influence their levels of motivation. Examples of environmental factors include the availability of supporting peers or characteristics of the teacher (Greene et al., 2004). Strikingly, Hardre (2006) found that teachers' interpersonal behavior as an environmental factor is important in inducing a positive change in academic motivation levels in students. Teachers who shared more information about themselves made students express higher levels of course motivation (Mazer, Murphy & Simonds, 2007). Most importantly, teachers who disclose more information about themselves showed the strongest association with students' motivation to learn as well as their active participation in the classroom environment (Cyanus, 2004; Cyanus, Martin & Goodboy, 2009; Cyanus & Martin, 2008).

Teacher self-disclosure differs from normal interpersonal self-disclosure. The environment in which teacher self-disclosure takes place is shaped by an unnatural hierarchical social dynamic in which students are subordinate to their teachers (Lannuti & Straumann, 2006). Normal self-disclosure can be defined as a voluntary behavior in which the disclosing person shares or discloses his or her thoughts, feelings, and general information with other people (Greene, Derlega & Mathews, 2006). Teacher's self-disclosure furthermore entails dimensions including amount, relevance, and positivity/negativity of disclosed information (Cyanus & Martin, 2008). The amount refers to how often the teacher self-discloses to the students. The relevance of disclosed information addresses the match between the shared information and the content of the course. Lastly, negativity refers to the valence of the disclosed information, which can either be positive or negative. Teachers have to maintain

a professional boundary between themselves and their students. Cayanus & Martin (2004) ultimately suggested the addition of relevance and positivity/negativity to the concept of teacher's self-disclosure to mark its differences from common interpersonal self-disclosure.

Academic motivation is shown to be positively associated with teachers' self-disclosure. Mazer et al. (2007) found that students felt more motivated and indicated higher levels of positive classroom atmosphere perceptions when they knew more about their teachers. Furthermore, students who found the course content relevant were more motivated to engage with it (Frymier & Shulman, 1995). A student's perception of relevance in terms of course material can be defined as the match of the course content with the student's personal needs and future career aspirations (Keller, 1983). In line with this finding, students having teachers who self-disclosed information relevant to the course material reported higher levels of academic motivation (Cayanus, 2004; Cayanus & Martin, 2008). In addition, amount and negativity appear to be associated with students' motivation to learn. That is, students with teachers who disclosed frequent information with nonnegative content reported greater levels of academic motivation. Some studies suggested that the association between teachers' self-disclosure and the amount is not clear-cut (Sorensen, 1989; McCarthy & Schmeck, 1982; Cayanus & Martin, 2004). However, methodological concerns can be raised because they often only assess the teacher's amount of self-disclosure in isolation, leaving out relevance and negativity.

Conceivably, mechanisms underlying the relationship between teachers' self-disclosure and the academic motivation of students could be derived from considering the Self-Expansion Model in Close Relationships (Aron et al., 2013). The model states that individuals have the natural inclination to expand themselves by increasing their potential efficacy. It results in the acquisition of greater skills and abilities to deal with future problems or to attain specific goals. They expand themselves through interaction with other people and

the resulting relationship formation. The two key principles underlying the means to increase one's efficacy entail the motivation principle and the inclusion-of-other-in-the-self principle. Therefore, teachers who frequently self-disclose relevant and nonnegative information give away personal information about themselves. This information can be used to expand one's knowledge, resources, and perspectives conducive to effective course material engagement, thereby increasing motivation through gaining self-expanding experiences by taking on and including aspects of the disclosed information to the self. Supporting this line of reasoning, Aron et al. (1997) have shown that the gradual increase of reciprocal self-disclosure resulted in greater inclusion of the other's self in one's own self.

It has consistently been shown that self-disclosure is related to interpersonal trust (Cozby, 1973; Pearce & Sharp, 1973; Wheelless & Grotz, 1997). Interpersonal trust can be defined as an individual's generalized expectancy that the information or behavior given by others can be relied upon (Rotter, 1967). There is still uncertainty about the exact causal structures underlying the formation of interpersonal trust. Some authors argued that interpersonal trust is a necessary prerequisite for self-disclosure to occur (Jourard, 1971; Wheelless & Grotz, 1997). Other authors suggested the opposite stating that self-disclosure produces trust in the disclosure target (Ostermeier, 1967; Worthy, Gary & Kahn, 1969). Both propositions of the directionality between self-disclosure and interpersonal trust were derived from investigating their relationship in natural interpersonal settings. Hence, different findings might be obtained when considering the artificial nature of a class setting.

Conceivably, teachers' self-disclosure may increase students' trust levels toward their teachers. Subsequently, students develop a general expectancy towards the degree they can rely upon the information given by their teachers. The magnitude of such a general expectancy may vary depending on the extent to which a teacher self-discloses frequent, relevant, and nonnegative information. Hence, the more students perceive trust by having

teachers who self-disclose the higher the likelihood of self-expansion to occur. In line with the reasoning of the self-expansion model, students who trust their teachers may experience greater levels of competence. One possibility by which they do so includes increasing their potential efficacy. Students' who trust their teachers are willing to include the disclosed information in their own self. It enables them to deal more effectively with study-related problems. Thus, students' trust perceptions toward their teachers may translate into how teacher self-disclosure can have a positive influence on academic motivation. Hence, interpersonal trust is a construct worth considering when investigating the relationship between teachers' self-disclosure and students' academic motivation.

Social comparison in group settings is unavoidable and can influence the trust levels of students (Molleman et al., 2007). Especially in the classroom or in academic settings, students and their teachers work together interdependently. Therefore, observing the performance and general attributes of others will happen (Van der Vegt et al, 1998). When comparing one's own identity, abilities, and performance to others, one can engage in two different types of social comparison, namely upward comparison and downward comparison (Molleman et al., 2007). Both comparisons can further be split into either upward identification or upward contrasting and downward identification or downward contrasting. In upward identifying comparisons, one perceives the other person as being more skilled and capable while simultaneously believing one can attain the same level of skillfulness. This type of comparison has been associated with higher levels of trust (Molleman et al., 2007). All other types of comparison, like believing the other person is better and that one is not able to achieve the same level (upward contrast) or comparing oneself to someone who is being perceived as less skilled (downward comparison) are negatively associated with trust. Furthermore, it has been shown that trust increases effective group work by increasing communication and avoiding conflicting situations (Kramer, 1999) and that upward

identification results in higher levels of student motivation (Smith, 2000). Intuitively, students' upward identification comparisons with teachers who are more similar to them should be associated with increased trust levels and increased motivation levels.

Keeping the previous reasoning in mind, it could be argued that students perceive their peer-mentor as more similar to them than their faculty-mentor in an academic setting. That is, peer-mentors are still in the middle of their academic progress much like the students they teach. As a consequence, it seems likely that students believe they can obtain the same skills and abilities as their peer-mentor. Reasonably, such a belief might be of smaller magnitude when considering students' comparison to their faculty-mentor. Here, the distance between students' skills and abilities may appear greater and less attainable. Thus, when assuming a scenario in which peer-mentors and faculty-mentors frequently self-disclose relevant and nonnegative information, the following idea can be derived. Hence, students will experience higher levels of trust and academic motivation when comparing themselves to their peer-mentors. A comparison to their faculty-mentor will be accompanied by lower levels of trust and academic motivation.

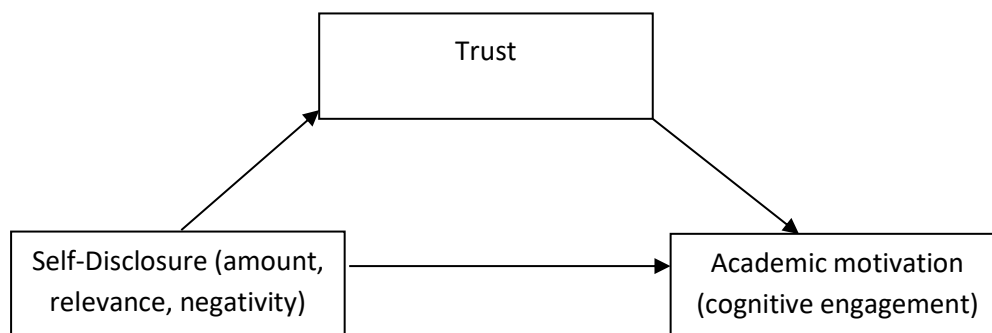
The goal of this study is to investigate the relationship between teachers' self-disclosure and students' academic motivation measured via their cognitive engagement. With the reasoning presented thus far, the following hypotheses were derived:

First, if a teacher frequently discloses nonnegative and relevant information about themselves, students' levels of academic engagement are greater. This relationship is expected to be stronger when the student trusts the teacher more. Second, the aforementioned mediation effect will be stronger for peer-mentors' self-disclosure than for faculty-mentors' self-disclosure.

To test the hypotheses, psychology students from the University of Groningen were asked to complete questionnaires related to teachers' self-disclosure, trust, type of instructor, and cognitive engagement. Figure 1 depicts the investigated theoretical framework.

Figure 1

Proposed simple mediation model



Method

Participants

A total of 190 participants took part in this study. 93 of the initial 190 participants were excluded from the study due to missing data, not being first-year psychology students, and taking less than five minutes to complete the questionnaires. The final sample consisted of 97 students, taking the Academic Skills course in the Bachelor of Psychology program at the University of Groningen. Of these 97 students, 74 were women (76.3%), 21 were men (21.6%), and 2 did not specify a gender (2.1%). The participants varied in age from 18 to 31, with a mean age of 20.5 and a standard deviation of 2.29 years. Concerning the participants' nationality, 44.3% were German, 23.7% were Dutch, and 32% came from several different countries mainly belonging to European countries. The participants were recruited through advertising from faculty staff and during class breaks; no compensation was given for participation. The participants received a consent form and all participants took part voluntarily. No harm was caused to the participants during or after the study.

Study Design and Procedure

In the present study, a correlational research design was used to investigate whether the relationship between peer-mentors'/faculty-mentors' self-disclosure and academic motivation is mediated by trust. 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 was 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, and students' cognitive engagement indicative of their motivation levels. 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. First, general information about the study's content and the procedure was given. Subsequently, participants were asked to indicate whether they were first-year psychology students attending the Academic Skills course. After providing informed consent, the participants were asked to fill out an anonymous online questionnaire, which would take approximately 20 to 30 minutes. 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. Participants were shown a set of questionnaires referring to peer-mentor/faculty-mentor self-disclosure, trust, and cognitive 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 (Cayanus & Martin, 2008) was used to measure the amount, relevance, and negativity of self-disclosure from both faculty-mentors 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 (Cayanus & Martin, 2008). In our sample, Cronbach’s alpha was $\alpha = .823$ for peer-mentors’ self-disclosure and $\alpha = .86$ for faculty-mentors.

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 is 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 $\alpha = .87$ for peer-mentors and $\alpha = .89$ for faculty-mentors.

Academic motivation manifested through cognitive engagement

The Higher Education Student Engagement Scale (HESES) was used except for online engagement as it was not relevant to the current academic setting (Zhoc et al., 2019). The cognitive engagement subscale from the HESES was utilized to measure academic motivation. The latter consists of 4 items (e.g., I enjoy the intellectual challenge of courses studying) and is part of the five-factor model of student engagement (Fredricks et al., 2012). Cognitive engagement in assessing 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 this study for cognitive engagement was $\alpha = .77$ and for the total HESES $\alpha = .78$.

Data Analysis

The data was examined by performing linear regression analyses as well as mediation analyses. The latter was performed in SPSS using the PROCESS model (model 4) by Hayes (2022). This model tests the indirect effect, direct effect, and total effect of the relationship between teachers' self-disclosure (independent variable) and students' cognitive engagement which was indicative of their academic motivation (outcome variable) via students' levels of trust (mediator). Furthermore, bootstrapping in terms of the mediation analyses was performed to make results more reliable. After collecting the data, descriptive analyses were performed to establish an overview of the participants' demographic distribution.

Results

A summary of correlational data and corresponding descriptive information regarding the measured variables can be found in Table 1 and Table 2.

Assumption violation checks

Several assumption checks concerning the data's nature were performed to render subsequent statistical analyses feasible. First, it is assumed that participants' rating scores among all variables of interest are normally distributed. Due to the statistical employment of bootstrapping as part of the mediation analyses, normality violations were not present. Secondly, any potential violations regarding linearity between multiple variables were investigated visually by inspecting their corresponding scatter plots. No violations were found. Lastly, a heteroscedasticity consistent standard error was employed as part of the mediation analyses to ensure homoscedasticity.

Table 1

Means, standard deviations, and correlations for variables relating to **peer-mentors**

Variable	1.	2.	3.	4.	5.	6.	<i>M</i>	<i>SD</i>
1. Amount	-						3.95	1.21
2. Relevance	.28**	-					5.02	1.07
3. Negativity	.15	.11	-				2	1.05
4. Total self-disclosure	.62***	.62***	-.44***	-			5.07	.64
5. Trust peer-mentor	-.22	.32***	-.13	.25*	-		3.16	.37
6. Cognitive engagement	.00	.06	-.16	.13	.05	-	3.25	.82

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

Table 2

Means, standard deviations, and correlations for variables relating to **faculty-mentors**

Variable	1.	2.	3.	4.	5.	6.	<i>M</i>	<i>SD</i>
1. Amount	-						3.7	1.36
2. Relevance	.37***	-					4.02	1.43
3. Negativity	.32**	.03	-				1.74	1.05
4. Total self-disclosure	.65***	.86***	-.2	-			4.71	.76
5. Trust faculty-mentor	-.04	.35***	-.2	.32***	-		3.06	.46
6. Cognitive engagement	.18	.30**	-.06	.33**	.04	-	3.25	.82

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

Primary mediation analyses

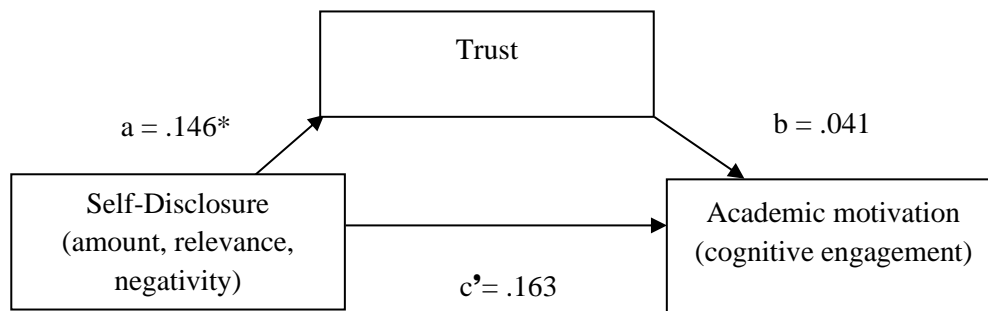
Two simple mediation analyses were performed to test both hypotheses concerning 1) whether there is a relationship between teachers' self-disclosure and students' academic motivation and whether the latter is stronger if students trust their teachers more; 2) whether the latter effect size is larger when considering peer-mentors. For that purpose, the PROCESS regression model (model 4) by Hayes (2022) was utilized. The analysis was performed for both types of teachers, namely peer-mentors and faculty-mentors. Results suggest only partial support for the hypotheses.

Considering peer-mentors, the general mediation model was not significant (Figure 2). However, it is noteworthy that total self-disclosure by peer-mentors significantly predicted students' trust levels in their corresponding peer-mentors ($B = .146$, $SE = .065$, 95% CI [.017, .275], $p = .027$). No evidence for a direct effect between total self-disclosure and academic

motivation was found ($B = .163$, $SE = .167$, 95% CI [-.168, .495], $p = .330$). Lastly, no evidence for an indirect effect was found with students' trust levels not significantly predicting their academic motivation ($B = .041$, $SE = .279$, 95% CI [-.513, .594], $p = .885$).

Figure 2

Simple mediation analysis for peer-mentors



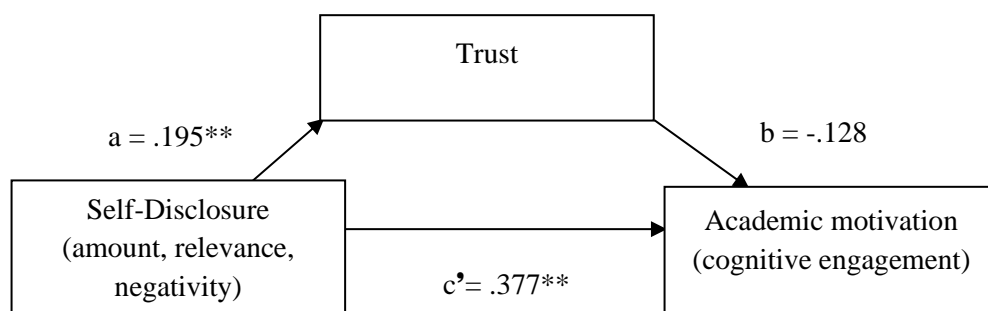
Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Considering faculty-mentors, the general mediation model was not significant (Figure 3). However, faculty-mentors' total self-disclosure significantly predicted students' trust perceptions towards them ($B = .195$, $SE = .058$, 95% CI [.080, .3309], $p = .001$).

Furthermore, the direct effect between total self-disclosure and academic motivation was significant ($B = .377$, $SE = .143$, 95% CI [.093, .661], $p = .01$). No evidence was found for an indirect effect. Hence, students' trust perceptions of their faculty-mentors did not significantly predict their academic motivation ($B = -.128$, $SE = .223$, 95% CI [-.570, .314], $p = .567$).

Figure 3

Simple mediation analysis for faculty-mentors



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

No evidence was found for the second hypothesis stating that the effect of the mediated relationship is stronger for peer-mentors than for faculty-mentors. As mentioned above, mediation analyses for both peer-mentors' self-disclosure and faculty-mentors' self-disclosure were insignificant. Hence, no meaningful differences between the effect sizes of the two mediation models can be observed. However, as indicated above, faculty-mentors' total self-disclosure was significantly related to students' trust perceptions as well as students' academic motivation. Conversely, peer-mentors' total self-disclosure solely predicted their students' trust perceptions. Therefore, the total self-disclosure of faculty-mentors explained 10.2% of the variance in students' trust levels corresponding to a standardized coefficient of $\beta = .319$. On the contrary, peer-mentors' total self-disclosure explained 6.43%. corresponding to a standardized coefficient of $\beta = .254$.

Post-hoc analyses

The following analyses were conducted in terms of exploratory research. Hence, the forthcoming results were prone to biases. Any potentially significant evidence reported may conceivably be due to random chance and ought to be examined with caution.

Peer-mentors' self-disclosure

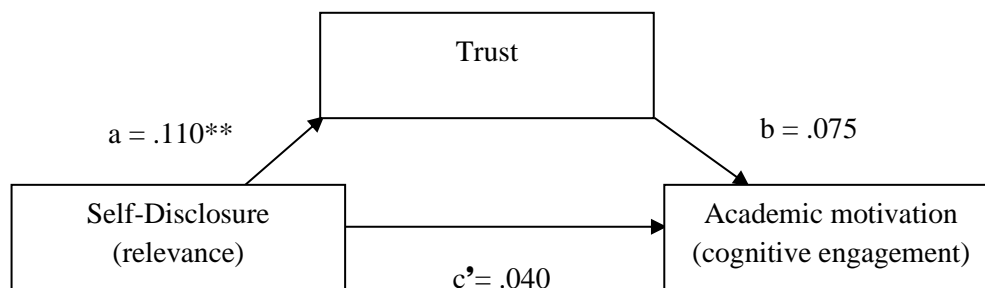
A clearer picture of the relationship between specific facets of self-disclosure, students' trust perceptions, and academic motivation can be sought after investigating each component of self-disclosure in isolation. Therefore, the amount of self-disclosed information did not significantly predict students' trust levels in their peer-mentors ($B = -.007$, $SE = .036$, 95% CI $[-.078, .065]$, $p = .850$) nor their academic motivation ($B = .005$, $SE = .074$, 95% CI $[-.142, .151]$, $p = .950$). Likewise, negativity of self-disclosed information was not significantly related to students' trust perceptions ($B = -.045$, $SE = .042$, 95% CI $[-.128, .038]$, $p = .282$) or their academic motivation ($B = -.118$, $SE = .077$, 95% CI $[-.271, .036]$, $p = .131$). Most

strikingly, the relationship between relevant self-disclosure and students' trust was significant ($B = .110$, $SE = .036$, 95% CI [.039, .181], $p = .003$;) (Figure 4).

Academic motivation was assessed using the cognitive engagement subscale from the HESES. Different results were obtained when using participants' total score of the HESES. Here, students' trust perceptions of their peer-mentors significantly predicted their total engagement scores ($b = .322$, $se = .137$, 95% CI [.050, .593], $p = .021$). However, there is no evidence for an indirect effect of relevant self-disclosure significantly predicting trust since the confidence interval includes 0 ($se = .011$, 95% CI [-.025, .021]). The direct effect of relevant self-disclosed information by peer-mentors on their students' total engagement was significant ($t(95) = 2.832$, $se = .033$, 95% CI [.028, .160], $p = .006$).

Figure 4

Simple mediation analysis for peer-mentors (relevant self-disclosure)



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

Faculty-mentors' self-disclosure

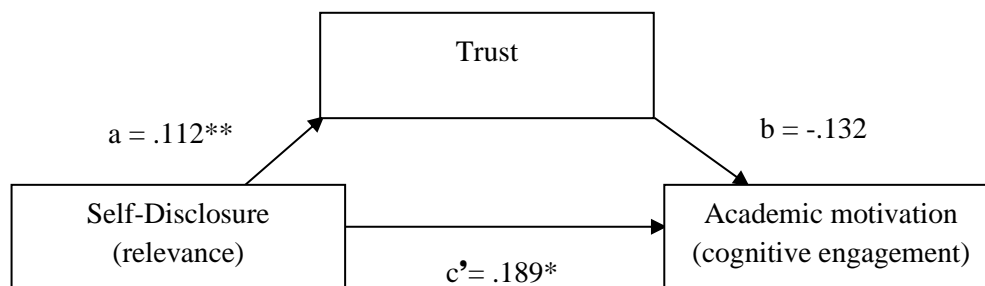
Similar to peer-mentors' self-disclosure, only relevant self-disclosure appeared to be important considering the relationship between faculty-mentors' self-disclosure, students' trust perceptions, and academic motivation (Figure 5). More precisely, the amount of self-disclosed information was not significant in predicting both students' trust perceptions ($B = -.001$, $SE = .040$, 95% CI [-.081, .078], $p = .972$) and their academic motivation ($B = .107$, $SE = .080$, 95% CI [-.053, .267], $p = .186$). Furthermore, the negativity component of self-disclosure did not significantly predict students' trust perceptions ($B = -.113$, $SE = .062$,

95% CI [-.235, .010], $p = .071$) or their academic motivation ($B = -.051$, $SE = .124$, 95% CI [-.296, .195], $p = .682$). Hence, only faculty-mentors' relevant self-disclosure significantly predicted their students' trust perceptions ($B = .112$, $SE = .036$, 95% CI [.041, .183], $p = .002$) and their academic motivation ($B = .189$, $SE = .0$, 95% CI [.0363, .342], $p = .016$).

As described above, academic motivation was assessed using the cognitive engagement subscale from the HESES. Again, different results were obtained when taking participants' total HESES scores into account. There was no direct effect found between relevant self-disclosure and students' total engagement ($t(95) = 1.718$, $se = .038$, 95% CI [-.010, .142], $p = .089$). However, the indirect effect with trust as a mediator was significant since the confidence interval did not include zero ($se = .016$, 95% CI [.003, 0.630]).

Figure 5

Simple mediation analysis for faculty-mentors (relevant self-disclosure)



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

Faculty-mentors' versus peer-mentors' self-disclosure

Correlational analyses between components of self-disclosure revealed that negative self-disclosed information of peer-mentors was significantly related to students' perceptions of trust towards their faculty-mentors ($r(95) = -.212$, $p = .037$).

Discussion

There is a need to further expand on the prevailing scientific body regarding teachers' self-disclosure and its associated outcomes on students (Žardeckaitė-Matulaitienė & Paluckaitė, 2013). So far, most of the research concerning the influence teachers exert over

their students investigated the construct of immediacy (Christophel, 1990; Richmond 1990; Velez & Cano, 2008). The current study aimed at addressing the paucity in scientific literature by referring to teachers' self-disclosure. Consequently, a mediated relationship model was proposed. It was hypothesized that teachers' total self-disclosure is associated with students' levels of academic motivation. This association was expected to be mediated by students' trust perceptions of their teachers. Furthermore, it was hypothesized that the extent of the latter relationship depends on the type of teacher. Thus, the aforementioned proposed model was investigated by carrying out multiple mediation analyses referring to both peer-mentors' and faculty-mentors' self-disclosure in the class setting.

Only partial evidence was found for the first hypothesis when focusing on peer-mentors' self-disclosure. Ergo, the findings point towards an absence of the proposed relationship between peer-mentors' self-disclosure and academic motivation. Peer-mentors' total self-disclosure positively predicted students' trust levels towards them. In contradiction with earlier findings, the evidence presented here fails to lend support to the notion of peer-mentors' self-disclosure influencing students' academic motivation (Cyanus, 2004; Cyanus & Martin, 2008). In addition to the primary mediation analyses conducted here, a further inspection revealed the relevance component of self-disclosure to be specifically important in positively predicting students' trust levels. A note of caution is due here since the latter analyses were performed after examining the primary hypotheses.

Considering faculty-mentors, only partial evidence was found for the first hypothesis. Faculty-mentors' self-disclosure was positively associated with both their students' trust perceptions and students' academic motivation. The findings presented here corroborate previous results concerning a positive relationship between teachers' self-disclosure and students' motivation to learn (Mazer et al., 2007). No evidence was found for students' levels of trust mediating the associated effect of faculty-mentors' self-disclosure on academic

motivation. Taken together, these results widen our knowledge of the importance of self-disclosure in the class setting.

The second hypothesis has to be refuted due to the presented evidence. That is, the magnitude between peer-mentors' and faculty-mentors' total self-disclosure and its associated mediated effect was not greater for peer-mentors. The general mediation model of peer-mentors' total self-disclosure was not significant. The results suggest that only faculty-mentors' self-disclosure positively predicted students' academic motivation. No such results were found for peer-mentors' self-disclosure. Taken together, faculty-mentors' self-disclosure predicted not only their students' trust perceptions but also their academic motivation. Conversely, peer-mentors' self-disclosure only predicted students' trust perceptions. Therefore, it could be concluded that faculty-mentors' and not peer-mentors' self-disclosure is relevant when considering its associated effect on students' academic motivation.

It should be emphasized that students of peer-mentors and faculty-mentors who self-disclosed relevant personal information reported higher corresponding trust levels. This concurs well with Pearce & Sharp's (1973) and Wheelless & Grotz's (1997) findings on the positive relationship between self-disclosure and interpersonal trust. Furthermore, it adds to the understanding of which components of self-disclosure are most important to developing trust in the class setting. Therefore, relevant self-disclosure may be particularly important. However, the research design used in this study is correlational in nature. Hence, the latter suggestions ought to be treated with caution. Following Cohen (1988), a correlation coefficient of .3 can be interpreted as a moderate relationship. Ergo, peer-mentors' and faculty-mentors' relevant self-disclosed information are moderately associated with students' trust perceptions of them.

In line with the Social Penetration Theory, teachers who self-disclose relevant information about themselves and the course content may appear trustworthy (Altman &

Taylor, 1973). Keeping in mind the artificial class setting, teachers who disclose personal information to illustrate the course material potentially results in students developing trust. Hence, instructors' effortful, well-intended, and relevant self-disclosure can create a generalized expectancy that the given information can be relied upon (Rotter, 1967).

The evidence presented negates that students' trust perceptions of their teachers play a crucial role in self-expanding motives to occur. Keeping the Self-Expansion Model in Close Relationships in mind, students show the inclination to increase their potential efficacy (Aron et al., 2013). It was hypothesized that students' academic motivation is positively correlated with teachers' self-disclosure. Further, this relationship was expected to be stronger when students trust their teachers more. However, peer-mentors' self-disclosure was not associated with their students' academic motivation levels. What is more, students' trust perceptions of their peer-mentors and faculty-mentors were not associated with their academic motivation. Thus, it can be assumed that students' trust perceptions toward their teachers do not evoke any self-expanding experiences within students.

In contrast, faculty-mentors' self-disclosure was found to be moderately associated with students' academic motivation. Ergo, students might be able to expand their self by including personal and relevant experiences that their faculty-mentors shared in the class setting. Students may benefit from considering challenges faculty-mentors successfully overcame by applying the knowledge from the course material. Conceivably, students' awareness regarding the importance of the course material may increase when taking the perspective and knowledge of the faculty-mentor. However, students' trust perceptions concerning their faculty-mentors do not appear to be essential for this self-expansion to occur. In essence, knowing that engagement with the course material might help in dealing with future challenges can increase students' academic motivation. Hence, students might be more willing to engage with the course content after faculty-mentors' self-disclosure.

It was argued that social comparisons might influence an associated effect of self-disclosure on academic motivation by influencing students' trust levels (Molleman et al., 2007; Van der Vegt et al., 1998). Both students and peer-mentor are still in the middle of completing their studies. Hence, they share similar attributes. Students may perceive their peer-mentors identity, abilities, and skills to be closer to one's own, ergo more attainable. When the latter skills and attributes are more attainable, the likelihood of students engaging in upward identification should be higher. Therefore, the proposed relationship between peer-mentors' total self-disclosure, students' corresponding trust perceptions, and academic motivation was hypothesized to be stronger compared to faculty-mentors' self-disclosure. Despite the latter reasoning, no evidence was found supporting that notion. Potentially, their faculty-mentors' skills, abilities, and knowledge were more attainable than their peer-mentors'.

Alternatively, other explanations can be provided after a closer investigation of the study's context. First, faculty-mentors were responsible for grading the students. According to Deci and Ryan's (1985) Self-Determination Theory, the mere presence of an incentive possibly may increase an externally driven student's level of motivation. Second, not students' trust perceptions but other mediators might be part of the associated effect between faculty-mentors' self-disclosure and academic motivation. To illustrate, students may perceive a greater distance between them and their faculty-mentor's identity. As a result, they may not expect their faculty-mentor to self-disclose personal information. Hence, students may feel a sense of uniqueness when their faculty-mentor shares personal information. To assure that the faculty-mentor keeps self-disclosing, students may be more motivated to engage in desired behaviors like cognitively engaging with the course material. All in all, students' perceived uniqueness might prove to be a mediating factor worth investigating. Lastly, the latter proposed mediator may not be related to peer-mentors' self-disclosure. That is, students'

levels of perceived uniqueness might not be influenced by their peer-mentors' self-disclosure. Both student and peer-mentor are likely to be more similar. Therefore, self-disclosure from peer-mentors may be expected and potentially does not result in students feeling unique.

The assessment of cognitive engagement might be an inaccurate indicator of students' academic motivation levels per se. Intuitively, there seems to be an additional step one has to undertake to translate one's motivation or intention into actual behavior. As put forward by Ryan and Deci (2000), academic motivation can best be understood as a prerequisite for cognitive engagement to occur. Nevertheless, several studies reported a substantial gap between people's intentions and their actual behavior across a wide array of domains (Armitage & Conner, 2001; Bélanger-Gravel et al., 2013; Adriaanse et al., 2011). That is, intentions derived from motivated goal setting do not necessarily need to result in behavioral actions. Therefore, in the context of this study, peer-mentors' self-disclosure might have resulted in students feeling more motivated to engage with the course content. However, it can be argued that there was no translation taking place from students' motivated intentions to actual cognitive engagement. Hence, making use of a more specific instrument assessing academic motivation independently of any behavioral components is advisable.

Exploratory research was conducted to investigate the relationship between specific facets of self-disclosure and academic motivation. Hence, only relevant self-disclosure seems important in predicting students' trust perceptions and their academic motivation. Regarding peer-mentors, only their relevant self-disclosure was positively related to their students' trust levels. Concerning faculty-mentors, only their relevant self-disclosure positively predicted their students' trust levels and academic motivation. Hence, the amount and negativity of teachers' self-disclosure did not significantly predict outcomes in students' trust or academic motivation. Possibly, relevant self-disclosure is necessary for students to make meaningful associations between the shared information and the course content. Thus, to feel more

motivated, the disclosed information may have to address the target of a student's motivation, namely the course material.

Further exploratory research seems to indicate that peer-mentors' who disclose negative information have students who trust their faculty-mentors less. This is important to note because students' trust in their teachers has been argued to be of utter importance. That is, trusting teachers can be understood as a fundamental quality essential for students to derive knowledge and gain epistemic confidence regarding the course content (Platz, 2021). Conceivably, peer-mentors' negative self-disclosure may be inappropriate in the class setting because of its missing connection to the course material. As a result, it may prevent a successful teaching session. Since faculty-mentors are more responsible for the students and the overall success of the course, negative self-disclosure of peer-mentors may make the faculty-mentors appear incompetent. The latter considerations are in line with Oleszkiewicz and Lachowicz-Tabaczek's (2016) considerations on perceived competence. Hence, students who perceived their teachers as incompetent showed lower levels of trust towards them. Therefore, it seems advisable that peer-mentors should avoid disclosing negative information about themselves in the class setting.

One more finding from conducting post-hoc analyses emerged after investigating the relationship between peer-mentors' and faculty-mentors' self-disclosure and a more holistic approach to student engagement. Hence, relevant self-disclosure of both peer-mentors and faculty-mentors predicted students' total engagement with academia including their social, academic, and affective engagement. Regarding faculty-mentors' self-disclosure, the latter relationship was mediated by trust. It might therefore be worthwhile to further investigate teachers' self-disclosure and potential outcomes on students' engagement in the university setting in general.

Limitations

Several limitations were present in the study. Therefore, any definite conclusions ought to be drawn with caution. First, analyses were based on a rather small sample size. Ergo, there potentially was not sufficient statistical power to detect a significant effect assuming that a small effect is present (Hallahan & Rosenthal, 1996). Second, the sample exclusively consisted of first-year psychology students in Groningen. Hence, the sample's generalizability to other populations of interest, like students from other fields or students who are still visiting a school, is limited. Third, to investigate the relationship between teachers' self-disclosure and various student outcomes, the participants were asked to score their teachers' levels of self-disclosure after the course had almost ended. According to Fogel and Lyra (1997), relationship formation is a highly dynamic process. A student's hindsight of this dynamical process might potentially be biased and does not capture the intricacies that can take place during it. Fourth, there are limits to self-report data. To illustrate, participants might have known what the research was about and hence indicated answers coherent with their prefixed ideas on the study's purpose. Lastly, the presented research was correlational. Causal inferences cannot be drawn and any suggested causal mechanisms underlying the findings ought to be looked at with caution.

Conclusion and Recommendations

This paper has given an account of the relationship between teachers' self-disclosure, students' academic motivation, and students' trust levels toward their teachers. Returning to the hypotheses posed at the beginning of this study, it is now possible to state that exclusively faculty-mentors' relevant self-disclosure seems important in predicting students' academic motivation. Students' trust levels towards their teachers do not seem to mediate this. Still, peer-mentors' and faculty-mentors' relevant self-disclosure positively predicts students' trust levels. This paper contributed to answering the question raised regarding which component of

self-disclosure may be important considering students' motivation to learn (Sorensen, 1989; McCarthy & Schmeck, 1982; Cayanus & Martin, 2004). The findings of this study have wide-ranging implications for evidence-based teaching. Thus, the valence and frequency of the self-disclosed information appear to be unimportant in influencing students' academic motivation levels. Therefore, relevant self-disclosed information is recommended. That is, faculty-mentors who aim at increasing their students' motivation should disclose relevant information. The greater the match between disclosed information and course content the better. Furthermore, peer-mentors should avoid sharing negative personal information. Since no significant relationship was found between peer-mentors' self-disclosure and students' academic motivation, future research could focus on assessing academic motivation in isolation, thereby leaving out the behavioral component of cognitive engagement when measuring motivation levels.

References

- Adriaanse, M. A., Vinkers, C. D. W., De Ridder, D. T. D., Hox, J. J., & De Wit, J. B. F. (2011). Do Implementation Intentions Help to eat a Healthy Diet? A Systematic Review and Meta-Analysis of the Empirical Evidence. *Appetite*, *56*(1), 183–193. <https://doi.org/10.1016/j.appet.2010.10.012>
- Allen, J., Robbins, S. B., Casillas, A., & Oh, I.-S. (2008). Third-year College Retention and Transfer: Effects of Academic Performance, Motivation, and Social Connectedness. *Research in Higher Education*, *49*(7), 647–664. <https://doi.org/10.1007/s11162-008-9098-3>
- Altman, I., & Taylor, D. A. (1973). *Social penetration: The development of interpersonal relationships*. Irvington Publishers.
- Armitage, C. J., & Conner, M. (2001). Efficacy of the Theory of Planned Behaviour: A meta-analytic review. *British Journal of Social Psychology*, *40*(4), 471–499. <https://doi.org/10.1348/014466601164939>
- 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.
- Aron, A., Melinat, E., Aron, E. N., Vallone, R. D., & Bator, R. J. (1997). The Experimental Generation of Interpersonal Closeness: A Procedure and Some Preliminary Findings. *Personality and Social Psychology Bulletin*, *23*(4), 363–377. <https://doi.org/10.1177/0146167297234003>
- Bélanger-Gravel, A., Godin, G., & Amireault, S. (2013). A Meta-Analytic Review of the Effect of Implementation Intentions on Physical Activity. *Health Psychology Review*, *7*(1), 23–54. <https://doi.org/10.1080/17437199.2011.560095>
- Brophy, J. (1987). Synthesis of research on strategies for motivating students to learn. *Educational Leadership*, *45*, 40–48.

- Cayanus, J. L. (2004). Effective Instructional Practice: Using Teacher Self-disclosure as an Instructional Tool. *Communication Teacher*, 18(1), 6–9.
<https://doi.org/10.1080/1740462032000142095>
- 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>
- Christophel, M. (1990). *The Relationships among Teacher Immediacy, Professor/Student Rapport, and Self-Regulated Learning* (39th ed., Vol. 4, pp. 323–340).
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). L. Erlbaum Associates.
- Cozby, P. C. (1973). Self-disclosure: A literature review. *Psychological Bulletin*, 79(2), 73–91. <https://doi.org/10.1037/h0033950>
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. Springer Science & Business Media.
- Fogel, A., & Lyra, M. C. D. P. (1996). Dynamics of Development in Relationships. *The Psychological Meaning of Chaos: Translating Theory into Practice.*, 75–94.
<https://doi.org/10.1037/10240-003>

- Forsyth, P., Adams, C., & Hoy, W. (2012). Collective trust: Why Schools can't Improve without it. *Journal of Educational Administration, 50*(2), 255–257.
<https://doi.org/10.1108/09578231211210611>
- 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*. New York: Springer.
- Frymier, A. B., & Shulman, G. M. (1995). “What’s in it for me?”: Increasing Content Relevance to Enhance Students’ Motivation. *Communication Education, 44*(1), 40–50.
<https://doi.org/10.1080/03634529509378996>
- Gnambs, T., & Hanfstingl, B. (2015). The Decline of Academic Motivation During Adolescence: an Accelerated Longitudinal Cohort Analysis on the Effect of Psychological Need Satisfaction. *Educational Psychology, 36*(9), 1691–1705.
<https://doi.org/10.1080/01443410.2015.1113236>
- Greene, K., Derlega, V. J., & Mathews, A. (2006). Self-Disclosure in Personal Relationships. In A. L. Vangelisti & D. Perlman (Eds.), *The European Scientific Journal* October 2013 edition vol.9, No.28 ISSN: 1857 – 7881 (Print) e - ISSN 1857- 7431 467
Cambridge Handbook of Personal Relationships (pp. 409-427). New York: Cambridge University Press.
- Greene, B. A., Miller, R. B., Crowson, H. Michael., Duke, B. L., & Akey, K. L. (2004). Predicting High School Students’ Cognitive Engagement and Achievement: Contributions of Classroom Perceptions and Motivation. *Contemporary Educational Psychology, 29*(4), 462–482. <https://doi.org/10.1016/j.cedpsych.2004.01.006>

- Hallahan, M., & Rosenthal, R. (1996). Statistical power: Concepts, Procedures, and Applications. *Behaviour Research and Therapy*, 34(5-6), 489–499.
[https://doi.org/10.1016/0005-7967\(95\)00082-8](https://doi.org/10.1016/0005-7967(95)00082-8)
- Hardré, P. L., Chen, C.-H., Huang, S.-H., Chiang, C.-T., Jen, F.-L., & Warden, L. (2006). Factors Affecting High School Students' Academic Motivation in Taiwan. *Asia Pacific Journal of Education*, 26(2), 189–207.
<https://doi.org/10.1080/02188790600937326>
- Hayes, A. F. (2022). *Introduction to mediation, moderation, and conditional process analysis: a regression-based approach*. The Guilford Press.
- Jourard, S. M. (1971). *The Transparent Self* (2nd ed.). Van Nostrand Reinhold.
- Kahu, E. R. (2013). Framing Student Engagement in Higher Education. *Studies in Higher Education*, 38(5), 758–773. <https://doi.org/10.1080/03075079.2011.598505>
- Keller, J. M. (1983). Motivational design of instruction. In C. M. Reigeluth (Ed.), *Instructional design theories: An overview of their current status* (pp. 383–434). Hillsdale, NJ: Lawrence Erlbaum.
- Kirkagac, S., & Oz, H. (2017). The role of academic motivation in predicting preservice EFL teachers' achievement. *Journal of Language and Linguistic Studies*, 13(2), 96–108.
- Kramer, R. M. (1999). Trust and Distrust in Organizations: Emerging Perspectives, Enduring Questions. *Annual Review of Psychology*, 50(1), 569–598.
<https://doi.org/10.1146/annurev.psych.50.1.569>
- Lannutti, P., & Strauman, E. (2006). Classroom Communication: The Influence of Instructor Self-disclosure on Student Evaluations. *Communication Quarterly*, 54(1), 89–99.
<https://doi.org/10.1080/01463370500270496>

- Lee, J., Chang, E. C., Lucas, A. G., & Hirsch, J. K. (2019). Academic Motivation and Psychological Needs as Predictors of Suicidal Risk. *Journal of College Counseling*, 22(2), 98–109. <https://doi.org/10.1002/jocc.12123>
- Mazer, J. P., Murphy, R. E., & Simonds, C. J. (2007). I'll See You On "Facebook": The Effects of Computer-Mediated Teacher Self-Disclosure on Student Motivation, Affective Learning, and Classroom Climate. *Communication Education*, 56(1), 1–17. <https://doi.org/10.1080/03634520601009710>
- McCarthy, P. R., & Schmeck, R. R. (1982). Effects of teacher self-disclosure on student learning and perceptions of teacher. *College Student Journal*, 16, 45–49.
- 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>
- Nayir, F. (2017). The Relationship between Student Motivation and Class Engagement Levels. *Eurasian Journal of Educational Research*, 17(71), 59–78. <https://doi.org/10.14689/ejer.2017.71.4>
- Newmann, F. M., Wehlage, G. G., & Lamborn, S. (1992). The significance and sources of student engagement. In F. M. Newmann (Ed.), *Student engagement and achievement in American secondary schools* (pp. 11–39). New York: Teacher College Press.
- Oleszkiewicz, A., & Lachowicz-Tabaczek, K. (2016). Perceived Competence and Warmth influence Respect, Liking and Trust in Work Relations. *Polish Psychological Bulletin*, 47(4), 431–435. <https://doi.org/10.1515/ppb-2016-0050>
- Ostermeier, T. H. (1967). Effects of Type and Frequency of Reference upon Perceived Source Credibility and Attitude Change. *Speech Monographs*, 34(2), 137–144. <https://doi.org/10.1080/03637756709375533>

- Pearce, W. B., & Sharp, S. M. (1973). Self-Disclosing Communication. *Journal of Communication*, 23(4), 409–425. <https://doi.org/10.1111/j.1460-2466.1973.tb00958.x>
- Platz, M. (2021). Trust Between Teacher and Student in Academic Education at School. *Journal of Philosophy of Education*. <https://doi.org/10.1111/1467-9752.12560>
- Richmond, V. P. (1990). Communication in the Classroom: Power and Motivation. *Communication Education*, 39(3), 181–195. <https://doi.org/10.1080/03634529009378801>
- Rotter, J. B. (1967). A new Scale for the Measurement of Interpersonal Trust. *Journal of Personality*, 35(4), 651–665. <https://doi.org/10.1111/j.1467-6494.1967.tb01454.x>
- Ryan, R. M., & Deci, E. L. (2000). Intrinsic and Extrinsic motivations: Classic definitions and new Directions. *Contemporary Educational Psychology*, 25(1), 54–67. <https://doi.org/10.1006/ceps.1999.1020>
- Smith, R. H. (2000). Assimilative and contrastive emotional reactions to upward and downward social comparisons. In J. Suls & L. Wheeler (Eds.), *Handbook of social comparison: Theory and research* (pp. 173– 200). New York: Plenum.
- 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>
- Usher, E. L., & Morris, D. B. (2012). Academic Motivation. *Encyclopedia of the Sciences of Learning*, 36–39. https://doi.org/10.1007/978-1-4419-1428-6_834
- Van Der Vegt, G., Emans, B., & Van De Vliert, E. (1998). Motivating Effects of Task and Outcome Interdependence in Work Teams. *Group & Organization Management*, 23(2), 124–143. <https://doi.org/10.1177/1059601198232003>

- Velez, J., & Cano, J. (2008). The Relationship Between Teacher Immediacy and Student Motivation. *Journal of Agricultural Education*, 49(3), 76–86.
<https://doi.org/10.5032/jae.2008.03076>
- Wheless, L. R., & Grotz, J. (1977). The Measurement of Trust and its Relationship to Self-Disclosure. *Human Communication Research*, 3(3), 250–257.
<https://doi.org/10.1111/j.1468-2958.1977.tb00523.x>
- Williams, K. C., & Williams, C. C. (2011). Five Key Ingredients for Improving Student Motivation. *Research in Higher Education*, 12, 1-23.
- Worthy, M., Gary, A. L., & Kahn, G. M. (1969). Self-Disclosure as an Exchange Process. *Journal of Personality and Social Psychology*, 13(1), 59–63.
<https://doi.org/10.1037/h0027990>
- 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>