



Testing the relationship between a need thwarting classroom environment and student disengagement

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Received: 24 November 2021 / Revised: 2 May 2022 / Accepted: 18 May 2022
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Abstract

National data on student disengagement show a pervasive trend that currently makes this phenomenon one of the biggest challenges faced by teachers worldwide. Much research on student disengagement examines the problem through an indirect framework in which deficiencies in positive social conditions or psychological states are tested as predictors of disengagement. This study uses a different lens by examining how *negative* student–teacher interactions differentially predict disengagement in adolescent students. Using self-determination theory, this study advances two hypotheses: H1, student perception of psychological need thwarting will have a stronger relationship with student disengagement than student perception of the lack of need support, and H2, the relationship between student perceived psychological need thwarting and student disengagement will be mediated by psychological need frustration. With data from 4694 students, *ex post facto* study findings confirmed the anticipated increased variance in disengagement when testing negative student–teacher interactions. Further, the hypothesized mediating effect of psychological need frustration was supported.

Keywords Student–teacher interactions · Student disengagement · Self-determination theory · Psychological need thwarting · Psychological need frustration

“Disengaged pupils are one of the biggest difficulties that teachers face in school classrooms.” (Earl et al., 2017, p. 82).

If student engagement is one of the strongest determinants of student success (Gallup Inc, 2020), then the problem of student disengagement inevitably puts a strain on the capacity of schools to thrive. Based on extant literature, student disengagement is related to pervasive outcomes such as poor academic performance, discouragement, school absenteeism, and poor preparation for life after graduation (Calderon & Yu, 2017; Jang et al., 2016; Washor and Mojkowski, 2014). The Gallup OPINION report (Calderon & Yu, 2017) showed that when compared to engaged peers, actively disengaged students are two times

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more likely to be absent from school, nine times more likely to get poor grades, and seven times more likely to feel discouraged about their future. Together, this evidence shows that student disengagement is a problem that cannot be overlooked.

To date, student disengagement is studied either in terms of non-school-related factors such as home life (Evely, *n.d.*) or through an indirect framework in which deficiencies in positive social conditions are tested as predictors of disengagement (Grolnick et al., 1991; Skinner et al., 2017). The limitation of a framework focused on non-school-related factors is that it provides little to no information about factors that can be manipulated within the school environment. On the other hand, solely using positive social conditions to predict a negative outcome such as disengagement is also limited because it provides no information about the effect of possible co-occurring negative social conditions on the phenomenon. Costa and colleagues (2015) underscore this point by arguing that the examination of negative predictive conditions will likely yield more understanding than the study of the mere absence or deficiency in positive conditions.

Consequently, this study seeks to extend the understanding of school-related factors contributing to student disengagement by directly examining the effects of negative social conditions on student disengagement while controlling for the effects of positive conditions. Using the dialectical framework of self-determination theory (SDT) (Deci & Ryan, 2000; Reeve, 2012), this study will be examining these relationships with adolescent students—grades 7–12. According to research (Fredricks et al., 2019; Wang & Eccles, 2012), youth in the adolescent phase has a higher vulnerability to disengagement. This claim is also consistent with the disengagement trend in the Gallup findings (Calderon & Yu, 2017) which showed that from the 7th grade, almost half of students are not engaged in school, and this trend increases until the 12th grade. With the increased risk associated with this group, this study hopes to explicate understanding on how to manage adolescent disengagement by looking at the unique contributions of a negative social environment.

Student–teacher dialectical framework of self-determination theory

Self-determination theory (SDT) is a macrotheory of human motivation made up of six minitheories that are unified in their common purpose of explaining motivational phenomena (Deci & Ryan, 2000). Recognized as one of the most influential theories of motivation, SDT has been studied for over four decades and has been validated as being cross-culturally relevant and applicable across age, gender, and socio-economic status (Chen et al., 2015; Chirkov et al., 2003). The underlying assumption of SDT is that humans have the innate potential to be energized and fruitfully engaged with life; however, this potential is subject to social-contextual influences (Deci & Ryan, 2000; Reeve et al., 2004; Vansteenkiste & Ryan, 2013). In the educational context, the assumption is that regardless of varying backgrounds, all students possess a sense of wonder and intrinsic motivation to be positively and productively engaged in their learning process; however, this outcome is subject to the influence of school relational factors (Reeve, 2006, 2012; Reeve et al., 2004).

According to the student–teacher dialectical framework, the relational influence of teachers can affect how students experience the learning environment as either supportive or inhibitory (Reeve, 2012; Reeve & Shin, 2020). The main argument of this proposition is that there is an interactional effect between students' inner motivation and their classroom relational environment that affects student connectedness or disconnectedness to the process (Reeve, 2012, Reeve, 2006; Reeve et al., 2004; Ryan & Deci, 2000). When students

perceive the classroom context as supportive, they tend to be motivated and, thus, engaged in the learning process. On the other hand, when they perceive the classroom context as undermining, they tend towards disaffection and disengagement from the learning process (Cents-Boonstra et al., 2022; Gueta & Berkovich, 2021; Reeve, 2012).

In the student–teacher dialectical framework, the SDT minitheory of basic psychological needs contributes largely to the explanation of the connection between contextual environment, student motivation, and student disengagement (Assor et al., 2002; Reeve, 2006; Vansteenkiste & Ryan, 2013). Specifically, basic psychological needs theory (BPNT) is used as a conceptual lens to explore the important role of contextual conditions that energize or frustrate the inner motivation of students based on the satisfaction or frustration of their psychological needs. Needs in this regard are defined as social nutrients that support the natural organismic tendencies for learning, growth, and flourishing (Vansteenkiste & Ryan, 2013).

Three areas of psychological needs are said to be affected by contextual conditions: the need for autonomy, the need for competence, and the need for relatedness (Ryan & Deci, 2000; Ryan & Deci, 2017). In a classroom context, the need for autonomy is shaped by the extent to which classroom conditions nurture, neglect, or frustrate the sense of initiative and volition in students. The need for competence is shaped by the extent to which classroom conditions nurture, neglect, or frustrate students' ability to exercise their talents and capacities in the process of learning and mastery. The need for relatedness is shaped by the extent to which classroom conditions nurture, neglect, or frustrate students' sense of authentic connection and belonging (Deci & Ryan, 2008; Reeve, 2006, 2012). The main premise of this framework is that the facilitation of these needs, also known as psychological need support, is vital to the synthesis, well-being, and engagement of students (Ryan & Deci, 2017). On the other hand, when any of these needs is hindered, also known as psychological need thwarting, there will be consequences of impaired motivation which leads to ill-being and maladjustment (Chen et al., 2015; Reeve, 2012; Vansteenkiste et al., 2020). A psychological need supporting student–teacher relationship can be defined as one in which students perceive their interactions with their teachers as positive, open, and energizing (Adams & Khojasteh, 2018; Vansteenkiste & Ryan, 2013; Cents-Boonstra et al., 2022). A psychological need thwarting student–teacher relationship can be defined as one in which students perceive their interactions with their teachers to be negative, restrictive, and repressing (Vansteenkiste & Ryan, 2013).

Particularly important to this study is the emphasis on making a proper distinction between psychological need support and psychological need thwarting in the classroom context. According to proponents of SDT (Vansteenkiste et al., 2020), and contrary to some initial assumptions, these two conditions are not simple opposites of each other. To construct them as opposites on a single continuum can lead to the omission of the significant contribution of each phenomenon to the human condition (Vansteenkiste et al., 2020). Specifically, the negative social condition of psychological need thwarting is considered to be more detrimental and more consequential for maladjustment than the mere absence of need support (Vansteenkiste & Ryan, 2013; Vansteenkiste et al., 2020). Consistent with this claim, researchers (Bartholomew et al., 2011; Cuevas et al., 2015) who have begun to explore this distinction in the sports and physical education context have found that psychological adversity in athletes is more related to the presence of need thwarting conditions more than the absence of need supportive conditions. In this regard, the conceptualization of psychological need thwarting acknowledges how a negative relational environment unconsciously creates pressures that actively undermine the individuality and psychological needs of others (Bartholomew et al., 2011). As such, in a classroom context,

it is expected that psychological need thwarting will differentially explain more of the variance in student maladjustment than the mere absence of need support (Costa et al., 2015).

Rationale and hypotheses

Generally, student disengagement can be defined as a detachment, in part or whole, from the learning process and/or environment, often producing a challenge for the learning community and resulting in poor and sometimes negative outcomes for students (Chipchase et al., 2017). According to the Gallup poll, which surveys over one million public school students from across the USA (US), the reported US student disengagement rate increased from 45 to 53% in less than 5 years (Hodges, 2018; Olson & Peterson, 2015). This US statistic is comparable to the 2019 poll result for Australia and New Zealand, which showed that 51% of students reported not being engaged in school (Gallup Inc., 2019). And, while the 2021 data for student disengagement is currently unavailable, it is not difficult to imagine that the adaptation of schools to the COVID-19 pandemic would have taken its toll on increasing this phenomenon.

According to Costa and colleagues (2015), to understand the antecedent conditions of maladaptive outcomes of ill-being, a direct assessment of the negative human experience should be favored over the assessment of mere deficiencies in positive experiences. The inadequacy of using positive measures to understand negative experiences is demonstrated in research assessing the negative side of the athletic experience (Bartholomew et al., 2011). According to Bartholomew and colleagues (2011), though there were small negative correlations between athletes' perceptions of psychological need thwarting and psychological need satisfaction, psychological need thwarting accounted for significantly more variance in the prediction of negative outcomes over need satisfaction. Similarly, Quested and Duda (2010) also reported that the positive experience of satisfaction of the three basic psychological needs was unrelated to negative outcomes of emotional and physical exhaustion in dancers. Applied to this study, it seems appropriate that to properly evaluate the pathway to student disengagement, a direct assessment of the negative effect of psychological need thwarting will be most fitting. This assumption frames the first study hypothesis.

H1: Student perception of psychological need thwarting will have a stronger relationship with student disengagement than student perception of the lack of need support.

Several studies show that need thwarting is not the only negative social condition that influences ill-being (Chen et al., 2015; Cheon et al., 2016; Mabbe et al., 2018; Teixeira et al., 2018). It is believed that need thwarting generates negative psychological states such as diminished motivation, low agency, and low self-perception, which play a role in behavioral maladjustment. For example, Costa and colleagues (2015) found that the negative psychological state of need frustration fully mediated the relationship between parental control and depression in adolescents. Similarly, Jang et al. (2016) found that an increase in need frustration in Korean high school students predicted a simultaneous increase in student disengagement through the semester. Vansteenkiste et al., (2020) sums it up by identifying that psychological need frustration is a precursor to maladjustment. Therefore, considering the evidence around the role of need frustration, this study proposed a second hypothesis as follows:

H2: The relationship between psychological need thwarting and student disengagement is mediated by psychological need frustration.

The goal of this second hypothesis is to extend the first by seeking to answer not just “what” explains variation in student disengagement but also to examine the mechanism through which student disengagement is produced.

Methods

Participants and procedures

A non-experimental cross-sectional study was conducted with data from a sample of middle and high school students (7th–12th grade) in 7 schools within a single urban school district in a Southwestern city of the USA. For confidentiality reasons, this dataset did not contain any personal-identifying information for the students, including student demographic information. The school district reports a minority student enrollment of 41.3%, economically disadvantaged student enrollment of 42.9%, and an average student-to-teacher ratio of 18:1. All 6341 students in the schools received the surveys. Usable responses were received from 4694 participants for a response rate of 77%. All participants had the option to voluntarily participate in the study through informed consent. Surveys were administered through an electronic link that contained instructions for the students. Research protocol complied with ethical guidelines of human subject research established by the Institutional Review Board.

Measures

Adolescent Classroom—Psychological Need Thwarting Scale (AC-PNTS)

Psychological need thwarting in the classroom was measured using the Classroom Psychological Need Thwarting Scale (AC-PNTS; Adigun, 2020). The AC-PNTS contains nine items measuring the theoretically specified dimensions of autonomy thwarting (3 items), competence thwarting (3 items), and relatedness thwarting (3 items). The item stem, “In this school, my teachers...” was used for all items in order to ensure specific applicability of results to the general classroom context. Sample items from this scale include: “My teachers ignore my ideas about how I want to do my work,” “My teachers do not give me enough opportunity to show what I can do,” and “My teachers do not have time for me.” The Likert scale answer categories for this measure ranged from 1 (strongly disagree) to 6 (strongly agree). Because the scale has not been used extensively in research, an exploratory factor analyses was performed to assess the scale structure. One factor emerged with an eigen value over one, explaining 58.88% of the variance, factor loadings for the nine items ranged from 0.67 to 0.84. A test of reliability produced a Cronbach’s Alpha value of 0.91, demonstrating strong internal consistency. Further, to establish construct validity, a confirmatory factor analysis was conducted. Factor loadings for the nine items ranged from 0.71 to 0.91, and model fit indices demonstrated acceptable fit with RMSEA=0.07; CFI=0.97; TLI=0.96; SRMR=0.03 (Hu & Bentler, 1999).

Psychological Need Frustration Scale

The Psychological Need Frustration Scale (PNFS) was derived from the Basic Psychological Need Satisfaction and Frustration Scale (Chen et al., 2015). This nine-item scale measures the extent to which students' feelings of autonomy, competence, and relatedness are repressed within the school environment. This scale has been used in multiple studies and demonstrated good construct and predictive validity (Chen et al., 2015; Costa et al., 2018; Tindall & Curtis, 2019). For this study, items from the Need Frustration portion of the scale were used. Sample items from this scale include: "I feel excluded from a group I want to belong to," "I feel disappointed with many of my performances," and "I feel pressured to do too many things." A test of reliability produced a Cronbach's Alpha value of 0.89, demonstrating strong internal consistency.

Psychological Need Support Scale

The psychological need support scale used in this study is a nine-item scale that measures the degree to which students feel supported in their psychological need for autonomy, competence, and relatedness. The autonomy support (AS) subscale measures the degree to which students perceive that teachers allow criticism, encourage independent thinking, foster relevance, and provide choice. Items were extracted from the Autonomy-Enhancement Scale (Assor et al., 2002). Sample items include: "Teachers allow students to decide things for themselves" and "Teachers explain why it is important to study certain subjects in school." The Competence Support (CS) subscale measures students' views of their teachers' support for their academic performance and teachers' expectations of student effort and participation. Sample items include: "Teachers in this school really make students think" and "Teachers in this school celebrate the achievement of students." This survey was adapted from the Consortium on Chicago School Research (n.d.). The relatedness support (RS) subscale measures the students' reports about the reliability of their teacher actions, concern for students, willingness to help, and teacher dependability. The Student Trust in Teachers scale (Adams & Forsyth, 2009) was used. Sample items include: "Teachers are always ready to help at this school" and "Teachers at this school are good at teaching." Because this is a reduced-item measure, an exploratory factor analysis was performed to assess the scale structure. One factor emerged with an eigen value over one, explaining 56.98% of the variance. Factor loadings for the nine items ranged from 0.66 to 0.82. A test of reliability produced a Cronbach's Alpha value of 0.90, which demonstrates the internal consistency of the scale.

Student Disengagement Scale

The Student Disengagement Scale used in this study is a nine-item scale that was derived from the disengagement portion of the Engagement-Disengagement Questionnaire by Jang and colleagues (2016). Student disengagement was measured as a multi-dimensional construct that includes the measurement of student behavioral, emotional, and agentic disengagement in the classroom. Sample items from this scale include: "When I'm in class, I think about other things.", "When I'm in class, I am silent and

unresponsive”, and “Class is no fun for me.” A test of reliability produced a Cronbach’s Alpha value of 0.89, showing strong internal consistency of the scale.

Data analysis

As an initial step, descriptive analysis containing the mean, standard deviation, McDonald omega reliability, and factor correlations of the main study variables were calculated. Due to data skewness and since tau-equivalence is not assumed for this data set, McDonald (1999) omega reliability is reported as a more accurate measurement of item consistency (Dunn et al., 2014; Trizano-Hermosilla & Alvarado, 2016). Further, the spearman correlation is used for this study due to non-normality of the data distribution. Missing data for this data set were completely random (i.e., MCAR) with no particular pattern to the gaps in item responses. Missing data were imputed using the Interitem Correlation Substitution (ICS) method, which is reported to perform well with scales that have few response options and low percentage of missing values (Huisman, 2000). ICS replaces missing values with the value of the item that has the highest interitem correlation with the missing item. Hypotheses were tested using structural equation modeling (SEM). The SEM was used to explain the structural relationships among need thwarting, need support, and student disengagement while controlling for grade level. Data normality was tested using Kolmogorov–Smirnov and Shapiro–Wilk tests. Descriptive statistics and normality tests were done using SPSS (Version 26) and the SEM was conducted using Mplus (Version 8.4) with robust maximum likelihood estimation (MLR) to adjust for the observed non-normality of the variables (Muthen & Muthen, 2017). The Sobel’s test (Preacher & Hayes, 2008) was used to evaluate mediation. Assessment of model fit was determined using Hu and Bentler’s (1999) recommendations for both absolute and incremental fit as follows: root mean square error of approximation (RMSEA < 0.08), the comparative fit index (CFI > 0.95), and the standardized root mean residual (SRMR < 0.06). The chi-square is reported, but it was not used as a measure of model fit for this study based on the large sample size.

Results

Descriptive statistics comprising mean, standard deviation, McDonald omega reliability, and factor correlations of the main study variables are reported in Table 1. Need thwarting had a stronger statistically significant correlation with student disengagement ($r = 0.56$,

Table 1 Descriptive statistics and correlations for study variables

| | Variable | <i>n</i> | <i>M</i> | <i>SD</i> | ω | 1 | 2 | 3 | 4 | 5 |
|---|------------------|----------|----------|-----------|----------|--------|--------|--------|--------|---|
| 1 | Disengagement | 4035.00 | 3.17 | 1.14 | 0.89 | — | | | | |
| 2 | Need Thwarting | 4194.00 | 2.70 | 1.22 | 0.91 | .56** | — | | | |
| 3 | Need Frustration | 4360.00 | 3.43 | 1.13 | 0.89 | .52** | .38** | — | | |
| 4 | Need Support | 4694.00 | 3.77 | .98 | 0.95 | -.39** | -.52** | -.15** | — | |
| 5 | Grade | 4694.00 | 9.22 | 1.63 | | .09** | -.01 | .03 | -.10** | — |

* $p < .05$. ** $p < .01$

$p < 0.01$) than need support ($r = -0.39, p < 0.01$). Need thwarting also had a stronger statistically significant correlation with the mediating variable of need frustration ($r = 0.38, p < 0.01$) than need support ($r = -0.15, p < 0.01$). Need frustration had a strong statistically significant relationship with student disengagement ($r = 0.09, p < 0.01$). Student grade had a weak, statistically significant relationship with student disengagement ($r = 0.09, p < 0.01$) and need support ($r = -0.10, p < 0.01$). However, the relationships between grade level and need thwarting and grade level need frustration ($r = -0.01, p > 0.05$; $r = 0.03, p > 0.05$) were both weak and not statistically significant. The omega reliability coefficients are consistent with the Cronbach alphas reported in the measurement section, confirming good item consistency of the measures.

Structural equation modeling

The model tested aimed to replicate the theoretical proposition that psychological need thwarting will have a stronger relationship with student disengagement than student perception of need support (H1) and that this relationship will be mediated by need frustration (H2). Student grade level (Middle School versus Not Middle School) was also included in the path analysis as a control variable. Further, due to the statistically significant correlation between need thwarting and need support, these two variables were correlated in the path diagram. Figure 1 shows the results of the mediated path model. Findings from the analyses showed that need thwarting had a positive relationship with and explained more variance in need frustration ($\beta = 0.43, p < 0.001$) as well as in student disengagement ($\beta = 0.35, p < 0.001$) than need support. Represented by the dummy coded variable – middle school – the control variable of student grade explained very little variance in need

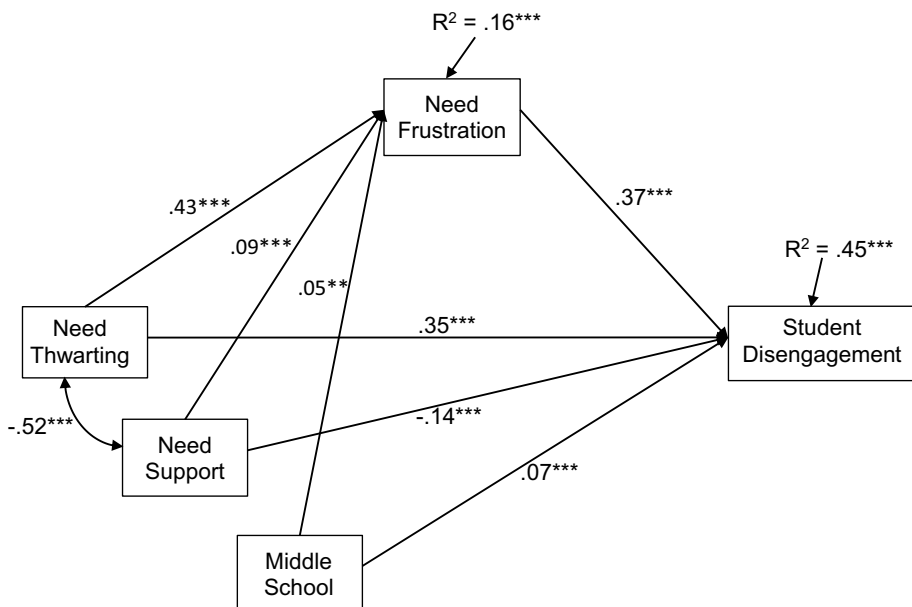


Fig. 1 Structural equation model estimating effects between psychological need thwarting and student disengagement. Note. * $p < .05$, ** $p < .01$, *** $p < .001$; $n = 4029$

frustration ($\beta=0.05$, $p<0.001$) as well as in student disengagement ($\beta=0.07$, $p<0.01$). Need support had a negative correlation with need frustration in the correlation analyses, but a positive relationship with need support ($\beta=0.09$, $p<0.001$) in the SEM. The change in the direction of the relationship between need support and need frustration suggests a potential suppression created by shared variance with need thwarting. The actual relationship between need support and need frustration is negative, not positive.

To complement the results presented in the structural equation model presented in Fig. 1, Table 2 contains information about the estimates of indirect paths. All indirect paths were statistically significant with need thwarting having the strongest effect ($\beta=0.15$, $p<0.001$). The path model explained 45% ($R^2=45$) of the variance in student disengagement. According to Hu and Bentler's (1999) recommendations, model fit indices demonstrated acceptable fit ($\text{Chi}^2=41.94$, $\text{df}=2$, $p<0.001$, Scaling correction factor=1.0511; RMSEA=0.07; CFI=0.98; TLI=0.94; SRMR=0.02). Finally, a statistically significant Sobel test (17.5659, $p<0.001$) establishes additional empirical support for the mediation of need frustration in the relationship between need thwarting and disengagement.

Discussion

This study applied the dialectical element of self-determination theory to examine the growing problem of school disengagement among adolescent students. Dialectic refers to the social and psychological interaction from which human motivation and behavior materialize (Ryan & Deci, 2000, 2017). A social context experienced as need supporting fuels innate inner resources that sustain optimal functioning and adaptive learning behaviors, whereas social conditions experienced as frustrating psychological needs constrain inner resources and undermine individual potential (Deci & Ryan, 2000; Reeve et al., 2004; Vansteenkiste & Ryan, 2013). The purpose of this study was to examine the extent to which need frustration and by extension student disengagement would be more sensitive to need thwarting conditions or merely diminished need support. Results are first discussed through self-determination theory then situated in education practice.

Need thwarting environments and student disengagement

Two hypotheses were advanced from self-determination theory. First, it was hypothesized that a student perception of psychological need thwarting will have a stronger relationship with student disengagement than student perception of the lack of need support. Second, it was hypothesized that need frustration would mediate the relationship between student psychological need thwarting and student disengagement. Structural equation modeling

Table 2 Indirect effects between study variables within structural equation model

| Path | β | S.E | LLCI | ULCC |
|---|---------|------|------|------|
| Need thwarting, need frustration, student disengagement | 0.15*** | 0.01 | 0.13 | 0.17 |
| Need support, need frustration, student disengagement | 0.04*** | 0.01 | 0.03 | 0.06 |
| Middle school, need frustration, student disengagement | 0.01** | 0.00 | 0.01 | 0.02 |

*** $p<0.001$, ** $p<0.01$, * $p<0.05$; MS Middle School (1=Middle School, 0=Not Middle School)

results support both hypotheses. Need thwarting had a stronger direct relationship with student disengagement than need support. Further, need thwarting also worked through need frustration to influence student disengagement.

The findings are consistent with the theoretical proposition of this study and existing literature on understanding the antecedent conditions that predict maladaptive outcomes of ill-being. According to Vansteenkiste and colleagues (2020), need thwarting involves more than a deficiency in positive conditions such as need support and/or need satisfaction because it predicts an “incremental variance in maladjustment” (p. 10). This distinction is particularly important for practitioners because it is often assumed that student maladjustment can be addressed by merely increasing supportive factors, which is true. However, based on the findings of this study, it is possible that addressing these inhibitory conditions could be a more viable path to more effective management of student disengagement.

In addition to establishing the relationship between need thwarting and student disengagement, this study sought to examine the mechanism through which a need thwarting environment explains variance in disengagement in students. As anticipated, when adolescent student need thwarting increased, student need frustration increased as well as student disengagement. Further, psychological need frustration absorbed a good amount of variance from psychological need thwarting and therefore supported the hypothesized mediation.

One of the important ways in which basic psychological needs theory contributes to the larger student–teacher dialectical framework is in explaining why students in certain instances show engagement and in other instances show passivity or maladaptive reactivity to the learning process (Reeve, 2012). This why was attributed to “neglect and thwarting” which are said to trigger “manifestations of disaffection” (p. 154). In other words, psychological need thwarting works through the affective state of disaffection to create disengagement in students. In this study, student perception of psychological need thwarting was positively related to students’ experience of psychological need frustration, which in turn was positively related to student disengagement. This suggests that the psychological experience of need frustration in this case functions as a type of manifestation of disaffection that predisposes students to be disengaged in school.

Together, these findings validate the proposed associations put forward by this study which is that psychological need frustration is a mediating mechanism through which student perception of psychological need thwarting predicts disengagement.

Practical implications and future directions

The knowledge generated from this study makes a contribution to research and practice. Of great significance is the finding that student disengagement is related to conditions in the school environment that students experience as controlling, inhibitory of their feelings of success, and stifling to their need to be known and valued. Understanding this phenomenon may help educators uncover more about the factors that affect student disengagement. Self-determination theory provides a lens by which leaders and teachers may assess the school and classroom environment to shed light on practices, structures, and processes that may thwart student autonomy, competence, and relatedness, leading to their disengagement. While it is important to explicitly identify and change these behaviors and practices that contribute to disengagement, perhaps even more important is the need for educators to develop a deep understanding of student psychological needs. Giving teachers a scripted set of practices or series of steps to follow to mitigate disengagement may be a quicker fix; however, when educators build theoretical understanding of student psychological

needs, this knowledge functions as a mental model that affects how teachers perceive student behaviors and interactions, ultimately informing teacher decisions and behaviors in the classroom.

Future research should explore the specific behaviors, structures, and processes that students experience as need thwarting, and of these, which weigh most heavily on their frustrated and disengaged state. Previous research has identified specific teacher behaviors that students perceive to suppress their need for autonomy (Reeve, 2006), but future work may also uncover particular actions that thwart student competence and relatedness. In addition, scholars may work to identify interventions that can help reduce need thwarting in schools.

Limitations

Due to the *ex post facto* nature of this study, some desirable and potentially consequential variables were not captured and, thus, unavailable for evaluation. For example, even though it is established that psychological needs are a global phenomenon applicable to people of all ages, races, and economic backgrounds (Chen et al., 2015), it is unknown how these factors could have been reflected in the current findings because this study's dataset did not include these demographic variables. Further, because of the preliminary nature of this study, data were collected from participants in a single metropolitan city in the USA. As a result, there is room for future research to replicate the study to see how the results are reproduced in schools across more regions. Finally, data come from participant self-report measures which are subject to measurement biases ranging from social desirability to introspective ability of participants.

Conclusion

Schools are not the sole cause of ill-being and maladjustment in students (Demaray & Malcecki, 2002). However, the findings from this study among others show that school-related contextual conditions play a large role in driving maladjustment (Bartholomew et al., 2011; Berghe et al., 2016; Felton & Jowett, 2015). Even though motivation is an internal process to the individual, evidence shows that teachers create the contextual conditions that affect the motivation of students (Reeves, 2012). This study highlights an important aspect of how teachers influence the motivation of students by surfacing how a need thwarting environment is related to disengagement.

When thinking about the socio-emotional health of students, it is easy for schools to jump into action with adopting different supportive and growth strategies. However, what is equally if not more important is looking into actively addressing inhibitory factors such as the one created by a need thwarting classroom environment. Extant literature on this phenomenon with other populations demonstrates that need thwarting also predicts other negative outcomes such as insecurity, behavioral dysregulation, harm, and oppositional defiance (Costa et al., 2016; Gunnell et al., 2013; Vansteenkiste et al., 2020). These will be important student outcomes to examine in relation to a need thwarting environment. Collectively, in a time where there is a steep adjustment curve for schools and the world at large as we recover from pandemic-induced disruptions, aspects of the learning environment that predispose students to further frustration and disengagement cannot be overlooked.

Author contribution All authors collaborated in the design and writing of the study.

Data availability For inquiries about the data, please contact the first author.

Code availability Not Applicable.

Declarations

Ethics approval Secondary data was used with permission.

Consent for publication The publication has been approved by all authors.

Conflict of interest The authors declare no competing interests.

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Current Themes of Research:

Student Psychological Needs.
Student Motivation.
Trust.

Most Relevant Publications:

- Adigun, O. B. & Adams, C. M. (2021). An Exploration of School-Related Social Correlates of Student Psychological Ill-Being. *Contemporary School Psychology*, 1–13. <https://doi.org/10.1007/s40688-021-00384-3>.
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