EXTENDING OUR UNDERSTANDING OF THE CONSTRUCT OF

STUDENT ENGAGEMENT THROUGH TWO STUDIES

by

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(Under the Direction of Amy L. Reschly)

ABSTRACT

Interest in student engagement, including behavioral, cognitive, and affective components, stems from its association with meaningful academic and social-emotional outcomes, its amenability to intervention, and its relevance for all students across the span of schooling. While there is a lack of consensus on a precise operationalization of engagement and subtypes within student engagement, its potential to inform educational reform and intervention holds significant implications for both scholars and practitioners. This dissertation aimed to address two identified areas in the student engagement literature warranting further exploration. Specifically, additional person-centered studies of student engagement are needed to facilitate our understanding of how and which students become more or less engaged. The first study explored profiles of student engagement in a sample of high school students through the use of latent profile analysis. Results suggested a five-cluster model best fit the data, resulting in Highly Engaged, Minimally Engaged, Disengaged, Moderately Burned Out, and Highly Disengaged/ Burned Out groups. Analyses revealed that gender and grade level were significantly associated with the five-cluster model and that interactions between cluster membership, gender, and grade level impacted student grade point average one year later. Additional research is needed to

examine the relationship between engagement and disaffection and the importance of distinct measurement of these constructs. Therefore, the second study aimed to clarify the conceptualization of engagement and disaffection by piloting disaffection items alongside the Student Engagement Instrument (SEI) within a sample of middle school students. Results supported the need to theoretically and psychometrically distinguish student engagement and disaffection, as identified engagement and disaffection factors demonstrated differential correlations to education outcomes such as achievement test scores, discipline referrals, and absences. Directions for future research and limitations of the current studies are discussed.

INDEX WORDS: student engagement, disaffection, burnout, latent profile analysis

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DEDICATION

This dissertation is dedicated to my family and many friends who have supported and encouraged me throughout graduate school. To my parents and grandparents, in particular, thank you for inspiring me and teaching me the values of education, persistence, and hard work. Without you, none of this would be possible.

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CHAPTER 1

INTRODUCTION

The construct of student engagement has captured the interest of education scholars and

practitioners since it first appeared in the literature over 30 years ago (Reschly & Christenson,

2012). Student engagement is currently operationalized as a multidimensional construct

(Fredricks et al., 2004) typically containing behavioral, affective, and cognitive components, yet

various definitions and indicators are utilized within the literature (Reschly & Christenson,

2012). Although research on student engagement initially centered on its relationship with high

school dropout, the field has expanded its inquiry to consider how student engagement is

relevant for all students and its potential within educational reform and intervention (Christenson

et al., 2012).

Interest in student engagement stems from a variety of factors, including its association

with meaningful academic and social-emotional outcomes, its amenability to intervention, and its

pertinence for students across the span of schooling (Christenson et al., 2012). Various studies

have identified student engagement as significantly related to academic achievement, including

on-time high school graduation (Balfanz et al., 2007; Finn & Rock, 1997; Lovelace et al., 2017)

and postsecondary enrollment and persistence (Finn, 2006; Fraysier et al., 2020). Moreover,

student engagement is associated with resilience and effort (Finn & Zimmer, 2012; National

Research Council and the Institute of Medicine [NRC], 2004), lower-risk health behaviors

(Griffiths et al., 2012), and overall subjective well-being (Heffner & Antaramian, 2016; Tian et

al., 2016).

Interest in student engagement arises from its malleable nature. In contrast to demographic variables associated with risk for negative academic outcomes, such as race, gender, or socioeconomic status (Rosenthal, 1998), student engagement indicates functional risk; that is, student engagement is alterable and amenable to intervention and therefore can be targeted to promote students' success in school (Finn, 1989; Furlong & Christenson, 2008; Reschly & Christenson, 2012). A related finding is that levels of student engagement can be used to identify students in need of additional support within demographically at-risk groups (Finn & Rock, 1997; Lovelace et al., 2014; Reschly & Christenson, 2006). Identifying students in need of such intervention is particularly important given that, despite overall steady increases in high school graduation rates in the United States, there continue to be discrepancies across racial-ethnic and socioeconomic status lines (McFarland et al., 2018).

Although student engagement research with at-risk student populations is incredibly important, there is increasing agreement that the construct is relevant for all students across the span of schooling (Finn & Zimmer, 2012; Reschly & Christenson, 2012). Studies have identified developmental pathways from early childhood to high school in the areas of dropout and successful completion (e.g., Evans & DiBenedetto, 1990; Garnier et al., 1997). These pathways are likely tied to patterns of student engagement and disengagement, respectively, over time (Finn, 1989). Longitudinal research suggests student engagement generally declines as students progress through schooling (Appleton & Reschly, 2019; NRC, 2004) although varied and nonnormative trajectories (Janosz et al., 2008; O'Donnell, et al., 2021; Wylie & Hodgen, 2012) and profiles (Lawson & Masyn, 2015; Wang & Peck, 2013) of student engagement have also been described.

Given the significant relationship between student engagement and academic and social-emotional outcomes, its malleable nature, and its relevance for all students across the academic lifespan, the construct clearly holds implications for education reform and intervention efforts. More information is needed, however, to both increase our knowledge of the construct and understand how this knowledge might be applied in school settings. Christenson and colleagues (2012) identified multiple areas warranting further research, including the need for longitudinal studies to examine differences in engagement across groups of students and increased clarity regarding the conceptualization of engagement and disengagement (i.e., disaffection).

First, additional studies are needed to facilitate our understanding of how and which students become more or less engaged (Christenson et al., 2012). Person-centered analyses, in particular, can be utilized to identify various profiles of student engagement (Fredricks et al., 2019) and are becoming more prevalent in the literature. Person-centered approaches are useful as they aim to explain group differences in patterns of development (Laursen & Hoff, 2006). Studies identifying profiles of engagement across cognitive, affective, and behavioral subtypes (Lawson & Masyn, 2015; Wang & Peck, 2013) also promote knowledge of the characteristics of students within these groups. Moreover, delineating these profiles might help educators understand the heterogeneity of engagement profiles within their student populations and then link these varied profiles to targeted intervention efforts (Fredricks et al., 2019; Wang & Peck, 2013).

A second area in need of additional research is the relationship between engagement and disaffection (Christenson et al., 2012; Reschly & Christenson, 2012). Identifying whether engagement and disaffection are ends of the same continuum or separate continua is of theoretical interest, as such analysis might facilitate further clarity on the conceptualization of

these constructs. Some rating scales, such as the Motivation and Engagement Scale (Martin, 2007) and the Engagement vs. Disaffection with Learning Scale (Skinner et al., 2009) include aspects of both engagement and disaffection. Other researchers (Salmela-Aro, et al., 2016; Tuominen-Soini & Salmela-Aro, 2014) measure aspects of disaffection such as burnout alongside engagement. Further developments in measures of disaffection are necessary to continue to advance the field and improve our conception of the construct.

Altogether, this dissertation aims to address these areas in the student engagement literature warranting further inquiry through two studies. Chapter 2 explores profiles of student engagement in a sample of high school students through the use of person-centered analytic techniques in the first study. In this chapter, an overview is provided of longitudinal studies of student engagement with particular focus on person-centered studies. The chapter also outlines the participants, data procedures, measures, and analyses for this study, followed by the results, their interpretations, and implications and limitations. Chapter 3 aims to clarify the conceptualization of engagement and disaffection and discuss the status of these constructs within the field in the second study. The purpose of this study is to pilot disaffection items alongside the well-established Student Engagement Instrument (Appleton et al., 2006) within a sample of middle school students. This chapter also outlines the methods used, results of the analysis, and discussion of the findings. Finally, Chapter 4 provides an overall summary and conclusions garnered from both studies.

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CHAPTER 2

ANALYZING PROFILES OF STUDENT ENGAGEMENT AND BURNOUT:

ASSOCIATED CHARACTERISTICS AND EDUCATIONAL OUTCOMES [1]

Abstract

Student engagement is critical to student learning and educational success. The purpose of this study was to identify profiles of student engagement and burnout within a sample of high school students from an urban area of the Southeastern United States. Profiles were developed using student self-report on the Student Engagement Instrument (SEI) and the School Burnout Inventory (SBI). This study examined the relationship between these profiles, important educational outcomes such as grades and attendance one year later, and student characteristics (e.g., gender, grade level, race-ethnicity, and enrollment in advanced courses). Findings suggested implications for understanding the heterogeneity of engagement and burnout profiles within student populations and how these profiles may relate to targeted intervention efforts.

Introduction

Student engagement is critical to student learning and educational success (Christenson et al., 2012; National Research Council and the Institute of Medicine [NRC], 2004). Despite advancements in the student engagement literature, additional research is needed. Multiple studies have identified the significant relationship between student engagement and academic achievement (Christenson et al., 2012), including successful high school completion (Balfanz et al., 2007; Finn & Rock, 1997; Lovelace et al., 2017) and postsecondary enrollment and persistence (Finn, 2006; Fraysier et al., 2020). Despite consistent findings regarding the significance of student engagement, there is a lack of consensus concerning the conceptualization of the construct, including the number and definition of engagement subtypes (Reschly & Christenson, 2012). However, scholars agree student engagement is a multidimensional construct, with most conceptualizations including behavioral, affective, and cognitive components (Fredricks et al., 2004).

Moreover, students' engagement generally declines as students progress from elementary to high school (Appleton & Reschly, 2019; NRC, 2004) with studies suggesting within this overall trend, there are nonnormative engagement trajectories with varied stability and fluidity (Archambault & Dupéré, 2017; Janosz et al., 2008; Li & Lerner, 2011; O'Donnell et al., 2021; Wylie & Hodgen, 2012). Given these consistent findings in the variability of students' engagement over time, it is not surprising that scholars continue to call for more longitudinal studies. As Reschly and Christenson (2012) described, longitudinal studies provide much needed information regarding developmental changes in the construct, the relationship between engagement and student outcomes, and the importance of different engagement subtypes to these outcomes.

Generally, there are three methodological approaches when working with longitudinal data: variable-centered and person-centered analytic techniques (Laursen & Hoff, 2006), and combinations of the two. These approaches serve different purposes. To identify the relations among variables and how these variables predict outcomes, studies typically utilize variable-centered approaches such as correlation, analysis of variance, and/or logistic regression. These types of analyses are well-represented within the literature, as such studies have revealed student engagement predicts academic achievement across various levels of schooling and student populations (Balfanz et al., 2007; Finn, 2006; Finn & Rock, 1997; Lovelace et al., 2017; Lovelace et al., 2014).

In contrast to variable-centered analyses, person-centered approaches, such as cluster or latent class analyses, group individuals who share similar attributes and are utilized to identify differences in patterns of development (Laursen & Hoff, 2006). These types of analyses are becoming more popular within the field along with the growing interest in elucidating profiles of

student engagement. Person-centered analyses can identify groups of students with varied levels of engagement, compare the academic and social-emotional outcomes of these groups, and utilize information about profiles to develop targeted interventions for students in need of support (Fredricks et al., 2019).

This increased interest in person-centered studies has also spurred more research employing analyses that combine variable- and person-centered approaches, such as growth mixture modeling (Jung & Wickrama, 2008; Ram & Grimm, 2009). The person-centered aspect of this method is that it groups individuals together based on shared characteristics into qualitatively different groups. The variable-centered aspect is that growth mixture modeling examines changes in variables over time and the relationship between these variables and outcomes of interest. Growth mixture modeling studies of student engagement have identified varied trajectories of engagement within groups of students across different ages and countries of origin (Archambault & Dupéré, 2017; Janosz et al., 2008; Li & Lerner, 2011; O'Donnell et al., 2021; Wylie & Hodgen, 2012). These studies consistently find most students exhibit high, stable levels of engagement, and these students are more likely to graduate high school on-time (Janosz et al., 2008) and attend postsecondary school (O'Donnell et al., 2021; Wylie & Hodgen, 2012). In contrast, lower and more unstable trajectories are associated with poorer academic outcomes, such as high school dropout.

Based on this prior research, it is clear students' engagement follows distinct, meaningful longitudinal trajectories. Therefore, the next step is to investigate how detailed profiles of student engagement might be linked to targeted interventions. Below, we review studies using person-centered approaches to identify profiles of student engagement and summarize key findings from this research.

Profiles of Student Engagement

Person-centered studies on student engagement appeared within the literature within the past ten years (see Table 2.1 for an overview of these studies).

Table 2.1
Comparison of Person-Centered Studies of Student Engagement

Citation	Sample and Method	Engagement Dimensions	Profiles
Fredricks, Ye, Wang, & Brauer (2019)	Mid-Atlantic United States $N = 2,489$ $5^{th} - 12^{th}$ graders Latent Profile Analysis	*Cognitive Disengagement*: gives up on difficult tasks *Behavioral Disengagement*: tries to get out of class *Emotional Disengagement*: irritation with school *Social Disengagement*: lack of friends at school	Four profiles: Emotionally and Socially Disengaged Cognitively Disengaged Emotionally Disengaged Behaviorally Disengaged
Lawson & Masyn (2015)	2002-2012 Educational Longitudinal Study (ELS) $N = 12,760$ 10th graders Latent Class Analysis	*Future Beliefs*: utility value of school *Academic Initiative*: flow, enjoyment, and interest *Academic Investment*: academic efficacy, persistence, effort, and attention *School Investment*: social, occupational, and civic value of school	Six profiles: Academic Initiative Academic Investment Low Effort/Efficacy Boredom Ambivalence Disidentification

		Ambivalence: uncertainty about the utility value of school	
		Disidentification: disliking school and teacher and peer alienation	
Salmela-Aro, Moeller, Schneider, Spicer, & Lavonen (2016)	EAGER study in the United States and Finland *N* = 487 United States: 9th – 12th graders Finland: 9th – 10th graders Latent Profile Analysis	*Schoolwork Engagement*: energy at school, absorption in schoolwork, and perceiving school as meaningful *Burnout*: exhaustion, cynicism, and feelings of inadequacy	Four profiles: Engaged Engaged/Exhausted Moderately Burned Out Burned Out
Tuominen-Soini & Salmela-Aro, (2014)	Finnish high school students *N* = 979 17- and 19-year-olds Latent Profile Analysis	*Schoolwork Engagement*: energy at school, absorption in schoolwork, and perceiving school as meaningful *Burnout*: exhaustion, cynicism, and feelings of inadequacy	Four profiles: Engaged Engaged/Exhausted Cynical Burned Out
Wang & Peck (2013)	Maryland Adolescent Development in Context Study N = 1,025 9th and 11th graders Latent Profile Analysis	*Behavioral Engagement*: behavioral participation *Emotional Engagement*: identification with school *Cognitive Engagement*: self-regulated learning	Five profiles: Moderately Engaged Highly Engaged Minimally Engaged Cognitively Disengaged Emotionally Disengaged

First, Wang and Peck (2013) utilized the Maryland Adolescent Development in Context Study to examine the behavioral, emotional, and cognitive engagement of 1,025 ninth graders. Their conceptualization of student engagement included behavioral, affective, and cognitive components. Specifically, items from this study were adapted from three different scales (the Behavioral Participation scale: Elliott et al., 1989; the School Identification scale: Gottfredson, 1984; and the Self-Regulated Learning scale: Pintrich, 2000). The adapted scales demonstrated good internal consistency in the study (Cronbach's α = .82 to .89; Wang & Peck, 2013). Using latent profile analysis, they identified five profiles of student engagement. The majority of the sample demonstrated high (17% of the sample), moderate (46%), or minimal (14%) engagement across the three subtypes, indicating a link between engagement subtypes for most students. The two other groups reported varied levels of engagement based on subtype, resulting in emotionally disengaged (10%) and cognitively disengaged (12%) groups. Although considered high performing by their teachers, the emotionally disengaged students reported the highest risk of mental health problems (i.e., depressive symptoms). The cognitively disengaged group, on the other hand, indicated better mental health but had lower grade point averages (GPAs) than the emotionally disengaged group.

In addition to assessing student engagement, some scholars assess aspects of student disaffection as a separate construct. As such, Salmela-Aro and colleagues (Salmela-Aro et al., 2016; Tuominen-Soini & Salmela-Aro, 2014) have conducted two studies assessing engagement (i.e., energy at school, absorption in schoolwork, and perceiving school as meaningful) and burnout (i.e., exhaustion, cynicism, and feelings of inadequacy) in high school students. Both these studies assessed schoolwork engagement and burnout with the Schoolwork Engagement Inventory (Salmela-Aro & Upadaya, 2012) and the School Burnout Inventory (Salmela-Aro et

al., 2009a). For the Schoolwork Engagement Inventory, Salmela-Aro and Upadaya (2012)

identified that both one-factor and three-factor solutions demonstrated good model fit and

reliability. Scores on the measure were associated with depressive symptoms, self-esteem, and

academic achievement. Similarly, the School Burnout Inventory (Salmela-Aro et al., 2009a)

suggested that a three-factor model best fit the data, although overall school burnout as a second-

order factor also fit the data well. Scores on the measure were associated with depressive

symptoms, academic achievement, and school engagement.

Using these measures in a person-centered analytic study, Tuominen-Soini and Salmela-

Aro's (2014) sample consisted of 979 Finnish high school students. Using latent profile analysis,

they identified engaged (44% of the sample), engaged-exhausted (28%), cynical (14%), and

burned-out (14%) profiles. Both the engaged and engaged-exhausted groups performed well

academically, but the engaged-exhausted group reported greater stress and preoccupation with

failures. The engaged group was the most likely to attend university. The cynical and burned-out

groups experienced less engagement, lower perceived value of school, and lower academic

achievement, but the burned-out group was more likely to report feelings of stress, exhaustion,

and depressive symptoms.

In their second study, Salmela-Aro and colleagues (2016) used the same measures to

assess the engagement and burnout of high school students from both the United States and

Finland ($N = 487$). With latent profile analysis, they again identified four profiles: engaged,

engaged-exhausted, moderately burned-out or at-risk for burnout, and burned-out. For the United

States sample, 12% of students fell within the engaged group, 33% in engaged-exhausted, 41%

in moderately burned-out, and 14% in burned-out. The Finnish sample reported that 27% of

students were engaged, 46% engaged-exhausted, 19% moderately burned-out, and 8% burned-

out. Overall, the researchers reported engagement and burnout were negatively correlated. However, given the high percentage of engaged-exhausted students, they concluded that educators must consider that high engagement does not necessarily indicate that students are flourishing.

Lawson and Masyn (2015) similarly used aspects of student engagement and disaffection to assess the profiles of 12,760 high school students within the 2002-2012 Educational Longitudinal Study (ELS). Engagement was assessed via ELS items that tapped students' beliefs about the future, academic enjoyment, academic efficacy, school investment, ambivalence towards school, and feelings of alienation. Using latent class analysis, the results suggested six profiles: academic initiative (8% of the sample), academic investment (34%), low effort/low efficacy (23%), boredom (10%), ambivalence (12%), and disidentification (12%) groups. As expected, students within the academic initiative and academic investment groups were more likely to graduate on-time from high school and enroll in postsecondary education. In contrast, students in the disidentification group were more likely to fail to graduate high school on-time.

Finally, a study by Fredricks and colleagues (2019) specifically assessed the disengagement of 2,489 fifth through twelfth graders (with most students between the fifth and seventh grades). The study utilized a self-report disengagement scale created by the same group of researchers (Wang et al., 2017). The scale assessed behavioral, cognitive, emotional, and social components of disengagement. Wang and colleagues identified that a four-factor structure fit the measure well. It also demonstrated good internal consistency and scores predicted student GPAs, educational aspirations, absences, detentions, and suspensions. In the person-centered study by Fredricks et al. (2019), using latent profile analysis, four disengagement profiles were identified: emotionally and socially disengaged (13% of the sample), cognitively disengaged

(64%), emotionally disengaged (19%), and behaviorally disengaged (4%). Differences in certain characteristics emerged across the groups. For example, the behaviorally disengaged group contained the highest percentage of low socioeconomic status (SES) students (defined as students qualifying for free- or reduced-price lunch) while the cognitively disengaged group contained the lowest percentage of these students. In addition, the group with the lowest overall levels of disengagement (the cognitively disengaged group) demonstrated higher educational aspirations, higher GPAs, and fewer attendance and disruptive behavior problems compared to the other disengagement groups in their study.

Overall, the examination of profiles of student engagement across a variety of studies indicates not all students are engaged or disengaged in the same ways. Across these studies, varied profiles of student engagement were associated with distinct academic, behavioral, and mental health outcomes. These studies were able to identify between four to six profiles within their respective samples. Students with higher levels of engagement generally demonstrated better outcomes than their less engaged or disengaged peers, who experienced worse outcomes. The five studies all focused on student engagement with school in general rather than focusing on a particular area or course (e.g., mathematics). Other commonalities across these studies include samples focused on high school students (apart from Fredricks et al., 2019, with mostly middle grade students) and use of latent class analysis (Lawson & Masyn, 2015) or latent profile analysis techniques (Fredricks et al., 2019; Salmela-Aro et al., 2016; Tuominen-Soini & Salmela-Aro, 2014; Wang & Peck, 2013) to identify different engagement dispositions.

Despite these similarities, these studies highlight differences in theoretical backgrounds and in how engagement and disengagement are conceptualized within the field. Wang and colleagues (Fredricks et al., 2019; Wang & Peck, 2013) specifically highlighted the

multidimensional nature of engagement and disengagement constructs. They focused on cognitive, affective, and behavioral subtypes in both studies (with the addition of the social subtype in Fredricks et al., 2019). Likewise, Salmela-Aro and colleagues (Salmela-Aro et al., 2016; Tuominen-Soini & Salmela-Aro, 2014) utilized a similar framework, but their studies focused more on the affective or emotional component of engagement rather than multiple subtypes. Distinctly, Lawson and Masyn (2015) drew from a variety of theories with their conceptualization of student engagement rather than one unified theory of engagement.

Relatedly, these differences in theory resulted in a variety of measurement tools across the five studies. Lawson and Masyn (2015), in utilizing the ELS data set, used items within the larger survey that best reflected aspects of student engagement. In contrast, Wang and Peck (2013) drew from three different rating scales to measure three student engagement subtypes of interest. Salmela-Aro and colleagues (Salmela-Aro et al., 2016; Tuominen-Soini & Salmela-Aro, 2014) and Fredricks and colleagues (2019) were able to utilize comprehensive measures with previous evidence of the reliability and validity for school engagement and burnout (Salmela-Aro et al., 2016; Tuominen-Soini & Salmela-Aro, 2014) and student disengagement (Fredricks et al., 2019), respectively.

Another difference across the studies was the focus solely on engagement, disengagement (or disaffection), or aspects of both. This is an important distinction as various scholars conceptualize these constructs differently. As Reschly and Christenson (2012) described, there is no consensus as to whether engagement is conceptualized along a single continuum or as engagement and disaffection separated into two continua. Therefore, some might qualify disengagement as a lack of engagement, whereas others would argue that it is possible to experience heightened engagement and disaffection simultaneously. For example, Wang and

Peck (2013) assessed behavioral, affective, and cognitive aspects of engagement to create both engagement and disengagement profiles, meaning disengagement was conceptualized as low engagement. In contrast, Fredricks and colleagues (2019) specifically assessed multiple dimensions of disengagement to create disengagement profiles. Salmela-Aro and colleagues (Salmela-Aro et al., 2016; Tuominen-Soini & Salmela-Aro, 2014) assessed both engagement and burnout and combined them in their profiles; burnout might be considered a component of disaffection. Likewise, Lawson and Masyn (2015) assessed engagement and constructs such as alienation, which created profiles with components of engagement and disaffection.

Despite these differences, conclusions from these studies suggest important implications for future research and practice. First, subtypes of engagement (and disengagement) seem to be linked, in that most students demonstrate high, moderate, or low engagement across subtypes, but this is not always the case (e.g., Fredricks et al., 2019; Wang & Peck, 2013). Furthermore, most students are moderately to highly engaged (Lawson & Masyn, 2015; Wang & Peck, 2013), but some of these students may also experience high levels of burnout (Salmela-Aro et al., 2016; Tuominen-Soini & Salmela-Aro, 2014) or depressive symptoms (Wang & Peck, 2013). Altogether, the research suggests it is important to assess different subtypes of engagement to facilitate the identification of students who might benefit from support, especially those who might not be identified by typical risk indicators used in schools such as poor grades or discipline referrals (Fredricks et al., 2019).

Purpose of the Current Study

Given its recency within the literature, further person-centered studies are warranted that examine profiles of student engagement. The current study sought to add greater depth to the field by utilizing a comprehensive, theory-based student engagement measure to investigate

developmental changes in the engagement construct (Reschly & Christenson, 2012). In addition to exploring the role of affective and cognitive engagement components within such profiles, this study also examined student feelings of exhaustion, cynicism, and inadequacy (i.e., burnout; Salmela-Aro et al., 2009a). Overall, this study focused on the relationships between student engagement subtypes, burnout, and student characteristics. In addition, this study aimed to examine how well these profiles predicted schooling outcomes (i.e., student GPA and absences) one-year post-survey completion. The purpose of the current study was to explore profiles of student engagement in a sample of high school students in the Southeastern United States using person-centered analytic techniques, specifically latent profile analysis. Specific research questions for this study were:

1. Can student engagement (including affective and cognitive components) and burnout be used to identify profiles of high school students like those found in previous research?

2. How do these groups relate to demographic variables such as race-ethnicity, gender, grade level, special education status, 504 plan status, and enrollment in advanced courses?

3. How do these engagement-burnout groups predict schooling outcomes significant to education practitioners one year later, such as GPA and attendance?

Method

Participants

Participants included high school students in ninth through twelfth grade from an independent public-school district in an urban town in the Southeastern United States. The current study utilized data collected as part of a school improvement project. Rating scale data were collected in Spring 2019, as well as demographic information garnered through school

records for ninth through twelfth graders ($N = 685$). Follow-up outcome data (i.e., student grade

point averages [GPA] and absences), were collected for the 2019 to 2020 school year, meaning

that outcome data were not available for the twelfth-grade students (sample with outcome data: N

$= 580$). Demographic variables for the total sample as well as the sample with available outcome

data at follow-up are presented in Table 2.2.

Table 2.2
Description of Participants - Sample Sizes and Percentages

	Total Sample		Sample w/ Outcome Data	
	Sample Size	Percentage	Sample Size	Percentage
Total	685	100	580	100
Female	357	52.1	296	51.0
Male	328	47.9	284	49.0
Grade Level				
9th	274	40.0	274	47.2
10th	204	29.8	204	35.2
11th	102	14.9	102	17.6
12th	105	15.3	-	-
Race/Ethnicity				
American Indian	2	0.3	1	0.2
Asian	31	4.5	26	4.5
Black	138	20.1	114	19.7
Hispanic	22	3.2	20	3.4
Multiracial	55	8.0	47	8.1
White	437	63.8	374	64.1
Other Demographics				
504 Plan	96	14.0	86	14.8
Special Education	58	8.5	47	8.1
IB Career Certificate Program	93	13.6	76	13.1
IB Diploma Program	314	45.8	266	45.9
Dual Enrollment Program	56	8.2	52	9.0

Note. Sample w/ Outcome data included all participants excluding 12th graders, as outcome data were
collected the following academic year after the 12th graders had graduated.

In addition to students' grade level, racial-ethnic background, and gender, the table

includes information such as special education status (i.e., students with disabilities receiving an

Individualized Education Plan), having a 504 plan (i.e., students with disabilities receiving accommodations through a 504 plan), and enrollment in advanced courses. Advanced course enrollment included three different programs: Dual Enrollment (i.e., taking college-level courses to earn college credit), International Baccalaureate (IB) Diploma (i.e., taking six IB courses), and IB Career Certificate (i.e., taking two to four IB courses).

Measures

Student Engagement Instrument

For research purposes, the Student Engagement Instrument (SEI; Appleton et al., 2006) is a 33-item standardized self-report questionnaire designed to assess the cognitive and affective engagement of students from sixth through twelfth grade. The paper-pencil version is available for free upon registration (see http://checkandconnect.umn.edu/research/sei_register.html). The SEI contains a five-factor structure and represents two key areas typically operationalized in student engagement (Appleton et al., 2006; Reschly et al., 2014): *cognitive engagement* includes Control and Relevance of Schoolwork and Future Goals and Aspirations factors, and *affective engagement* includes Teacher-Student Relationships, Peer Support for Learning, and Family Support for Learning factors. Participants respond on a 5-point Likert scale from Strongly Disagree (1) to Strongly Agree (5) for each item. Responses are summed for each of the five factors. Cronbach's alpha for the present sample suggested good internal consistency, with reliability estimates ranging from .78 to .87.

Studies of the SEI indicate greater student engagement scores are associated with a variety of variables in expected ways, including attendance, suspensions, and academic achievement (Appleton et al., 2006; Lovelace et al., 2014; Reschly et al., 2014). SEI scores are also predictive of high school completion and dropout (Lovelace et al., 2014; Pearson, 2014) and

college attendance and persistence (Fraysier et al., 2020). Other studies have identified that the SEI demonstrates adequate construct validity with the Motivation Engagement Scale (Martin, 2007), another measure of student engagement (Reschly et al., 2014), and measurement invariance across sixth through twelfth grade and gender (Betts et al., 2010).

School Burnout Inventory

In addition to the SEI, our study utilizes the School Burnout Inventory (SBI; Salmela-Aro et al., 2009a). The SBI contains nine items to assess school-related burnout with three dimensions: exhaustion at school, cynicism towards school, and feelings of inadequacy. Participants respond on a 6-point Likert scale from Completely Disagree (1) to Completely Agree (6), with higher scores indicating greater burnout. The three-factor structure, validity, and reliability have been assessed with high school students. In the current study, the Exhaustion (Cronbach's α = .78) and Cynicism (Cronbach's α = .83) dimensions and the Burnout Total (Cronbach's α = .86) demonstrated acceptable internal consistency. The Inadequacy subscale, which contains only two items, demonstrated poor internal consistency (Cronbach's α = .54). Salmela-Aro and colleagues (2009) found scores on the SBI correlated with depressive symptoms, school engagement, and academic achievement in expected directions. Items are available in the Appendix of Salmela-Aro et al. (2009).

Data Procedures

With approval from the University of Georgia Institutional Review Board, the current study used extant data collected as a part of school improvement efforts. The school administered an online version of the SEI with permission upon registration and the SBI in Spring 2019. In addition to students' self-reported engagement and burnout, information

regarding students' GPA, attendance, and demographic information was accessed through school records. Outcome data were collected from Spring 2020.

Analyses

Data were analyzed using Mplus 8.2 (Muthén & Muthén, 2017) and the Statistical Package for the Social Sciences (SPSS) Version 27. As previously described, the current study sought to delineate profiles of student engagement through person-centered analytic techniques, which can model student engagement profiles (i.e., unobserved population heterogeneity) based on observed variables such as indicators of student engagement and burnout (Lawson & Masyn, 2015). Student responses for the five factors from the SEI (Control and Relevance of Schoolwork, Future Goals and Aspirations, Teacher-Student Relationships, Peer Support for Learning, and Family Support for Learning) and SBI Burnout Total (including Exhaustion, Cynicism, and Feelings of Inadequacy subscales) were standardized using z-scores and entered into the latent profile analysis (LPA). This study utilized an analytic procedure similar to Lawson and Masyn (2015). First, a two-cluster solution was estimated, and clusters were added to the model until it was no longer well-defined. This was determined by examining the following factors: a lack of model convergence, a lack of replication, and an extraction of an unusable or conceptually non-interpretable latent class (i.e., a latent class with such a small proportion of the total sample that it could not be evaluated due to low statistical power). Specifically, we examined an index for cluster separation (entropy; >= .80), the cluster with the lowest classification probability (LPC; >= .70), and the cluster with the smallest percentage of the sample (>= 5.0%). Model fit was evaluated with three fit indices for the LPA: the Bayesian Information Criterion (BIC), Bayesian Information Criterion adjusted for sample size (ABIC), and Akaike Information Criterion (AIC). One case was excluded from the analysis due to

significant missing data in the SEI and SBI self-report data. All other cases were included in the analysis, as Mplus estimated any missing values when calculating cluster assignment based on all other data in the dataset.

Finally, two sets of analyses were run to examine the relationships between student engagement/burnout profiles and demographic information and to predict outcome variables. First, chi-square analysis was used to assess if there were differences in demographic variables represented in the identified engagement-burnout profiles. This included gender, grade level, race-ethnicity, special education status, 504 status, Dual Enrollment program status, IB Diploma program status, and IB Career Certificate program status. For the two outcome variables, which were standardized using z-scores, two univariate general linear models were utilized to examine the relationship between the participant profile membership and student GPA and absences one-year post-survey completion. Any demographic variables that were significantly different across the profiles as identified in the chi-square analyses were included in the regression models as fixed factors.

Research Questions

Based on the previously highlighted research, person-centered studies of high school students' engagement typically reveal between four to six distinct profiles. More specifically, Salmela-Aro and colleagues (Salmela-Aro et al., 2016; Tuominen-Soini & Salmela-Aro, 2014) assessed burnout along with affective engagement and identified four profiles. Similarly, our study expands upon these results to explore the role of burnout in addition to affective and cognitive engagement components. Given this previous research, it was hypothesized four to six distinct profiles would emerge from LPA reflecting various configurations of student burnout and engagement.

Previous studies suggest various demographic variables are differentially correlated with engagement profiles and students with greater levels of engagement experience better academic and behavioral outcomes. For example, Fredricks et al. (2019) identified that their behaviorally disengaged profile contained the highest percentage of low socioeconomic status students compared to other profiles. This study also indicated students with the lowest levels of disengagement, compared to their more disengaged peers, were more likely to have higher educational aspirations, higher GPAs, and fewer attendance and disruptive behavior problems. As such, it was hypothesized that racial-ethnic minority, male gender, and special education status would be disproportionately associated with low engagement profiles. It was also hypothesized that greater engagement levels would be associated with positive outcomes such as higher GPA and fewer absences.

<div align="center">

Results

</div>

Isolating Latent Profiles

Initial analyses began by comparing the latent profile analysis (LPA) results using the three separate factors of the School Burnout Inventory (SBI; Exhaustion, Cynicism, and Sense of Inadequacy subscales) versus the Burnout Total as one factor. Results were similar for both models. As such, we decided to continue the analysis using Burnout Total as a factor in LPA along with the five Student Engagement Instrument (SEI) factors (i.e., Teacher-Student Relationships, Peer Support for Learning, Family Support for Learning, Control and Relevance of Schoolwork, and Future Goals and Aspirations).

Model building started with two clusters. Additional clusters were added to the model until it was no longer well-defined. Model fit was evaluated using the Bayesian Information Criterion (BIC), Bayesian Information Criterion adjusted for sample size (ABIC), and Akaike

Information Criterion (AIC). We also examined the number of replications across 200 random starts, entropy, the lowest classification probability of all clusters in the model, and the extraction of a very small latent class that could not be appropriately evaluated due to low statistical power. Finally, in addition to statistical indicators, we also considered conceptual interpretability and practical significance in selecting the best model (Lawson & Masyn, 2015). Table 2.3 displays the change in latent profile indices for two- through six-cluster models.

Table 2.3
Change in Latent Profile Indices from Two- to Six-Cluster Models

	Clusters				
Indices	2	3	4	5	6
Log Likelihood	-7057.197	-6864.743	-6750.353	-6679.774	-6613.734
Replications[1]	200/200	200/200	200/200	97/200	41/200
No. Parameters[2]	25	34	43	52	61
AIC[3]	14164	13797	13587	13464	13349
BIC[4]	14277	13951	13781	13699	13626
ABIC[5]	14198	13843	13645	13534	13432
Entropy[6]	.80	.82	.80	.78	.79
LCP[7]	.92	.86	.86	.79	.81
Smallest Cluster	46.3%	17.1%	9.1%	7.3%	3.2%

[1] Replications across 200 random starts
[2] Number of free parameters that are estimated in the model
[3] Akaike Information Criterion
[4] Bayesian Information Criterion
[5] Bayesian Information Criterion adjusted for sample size
[6] An index of cluster separation; >= .80 is good
[7] Of all the clusters in the model, the one with the lowest classification probability; >= .70 is good.
[8] The cluster with the smallest percentage of the sample; >= 5.0% is good

All the models in our analyses were able to be replicated. Model fit generally improved as clusters were added to the model, as demonstrated by the decrease in the AIC, BIC, and ABIC indices. The entropy and lowest classification probability indices also suggested decent fit for all the models. However, the extracted smallest cluster in the six-cluster model contained 3.2% of the total sample, suggesting the additional cluster contained too few participants to be appropriately evaluated. As both the four-cluster and five-cluster models demonstrated good

model fit based on these statistical indicators, the variable means within each cluster were examined to better evaluate each model.

Both the four-cluster (Table 2.4) and five-cluster (Table 2.5) models resulted in discernable classes that were consistent with the extant literature. In selecting the best model for further analysis, however, the five-cluster model possessed clusters that were more theoretically meaningful. Specifically, the five-cluster model resulted in both a highly engaged group (Cluster 5) and a minimally engaged group (Cluster 2), a distinction which has been identified in previous studies (Lawson & Masyn, 2015; Wang & Peck, 2013). In addition, previous research identified that some students might experience high levels of engagement and burnout simultaneously (Salmela-Aro et al., 2016; Tuominen-Soini & Salmela-Aro, 2014), exemplifying a separate continua model of student engagement and disaffection (e.g., burnout), which has been recognized as an area in need of additional research within the field (Reschly & Christenson, 2012). Although no cluster represented this engaged-exhausted profile in the four- or five-cluster models in our study, Cluster 3 in the five-cluster model suggested the presence of a disengaged but not burned-out group of students, similarly representing the separate engagement/disaffection continua conceptualization. Altogether, to ensure that we selected the model that presented with the most significant relationships to student characteristics, grade point average (GPA), and attendance, both the four-cluster and five-cluster models were subjected to chi-square and general linear model analyses as described below. As results of the general linear model analysis suggested more significant relationships with the outcome variables of interest for the five-cluster model compared to the four-cluster model, the five-cluster model was focused on for the analyses throughout the rest of the study.

Table 2.4
Mean Cluster Z-score Values for the Four-Cluster Model

	Cluster			
Indicator	1	2	3	4
Teacher-Student Relationships	-.68	.85	-.06	-.10
Peer Support for Learning	-.54	.55	-.07	.00
Family Support for Learning	-.73	.61	-.02	-.04
Control and Relevance of Schoolwork	-.75	.92	-.01	-.18
Future Goals and Aspirations	-.99	.62	.04	-.04
Burnout Total	.55	-.66	-.20	.38

Cluster 1: Disengaged and Burned Out
Cluster 2: Engaged
Cluster 3: Neutral
Cluster 4: Moderately Burned Out

Table 2.5
Mean Cluster Z-score Values for the Five-Cluster Model

	Cluster				
Indicator	1	2	3	4	5
Teacher-Student Relationships	-.57	.15	-.25	-.10	1.23
Peer Support for Learning	-.46	.13	-.26	-.02	.86
Family Support for Learning	-.61	.21	-.26	-.02	.71
Control and Relevance of Schoolwork	-.74	.24	-.19	-.22	1.25
Future Goals and Aspirations	-.95	.26	-.20	-.01	.75
Burnout Total	.63	-.29	-.11	.47	-.94

Cluster 1: Highly Disengaged and Burned Out
Cluster 2: Minimally Engaged
Cluster 3: Disengaged
Cluster 4: Moderately Burned Out
Cluster 5: Highly Engaged

The largest cluster identified in the five-cluster model was Cluster 2 ($n = 226$, 33.0%). This group possessed positive but low levels of engagement across the five SEI factors. They also endorsed few concerns related to burnout. As such, this cluster was labeled as "Minimally Engaged." Cluster 4 was the next largest cluster in the sample ($n = 189$, 27.6%) and was labeled "Moderately Burned Out." This group possessed moderate levels of burnout and disengagement, especially related to feelings about control and relevance of schoolwork. Cluster 3 ($n = 153$, 22.4%) was labeled as "Disengaged," as this group contained consistent levels of disengagement across the SEI factors but did not endorse burn out. The two smallest groups in our sample were

Cluster 1 ($n = 66$, 9.6%) and Cluster 5 ($n = 50$, 7.3%). Cluster 1 was labeled "Highly Disengaged and Burned Out" as this group of students endorsed the lowest levels of engagement and highest levels of burnout in the sample. Finally, Cluster 5 was labeled "Highly Engaged." This cluster contained the highest levels of engagement and lowest levels of burnout in the sample.

Analysis of Association of Cluster Assignment and Demographic Characteristics

The percentage of participants within each cluster and the demographic characteristics represented within the different clusters are presented in Table 2.6. Chi-square analyses were conducted to determine if the demographic characteristics significantly varied across the clusters differently than expected given the demographics of the overall sample. Chi-square analyses revealed significant associations between the five-cluster model and gender ($\chi^2 = 22.79$, $df = 4$, $p < .001$) and grade ($\chi^2 = 46.35$, $df = 12$, $p < .001$). No significant associations were identified for racial-ethnic background ($\chi^2 = 16.40$, $df = 20$, $p = .69$), 504 status ($\chi^2 = 7.36$, $df = 4$, $p = .12$), special education status ($\chi^2 = 2.05$, $df = 4$, $p = .73$), IB Career Certificate enrollment ($\chi^2 = 3.31$, $df = 4$, $p = .51$), or Dual Enrollment ($\chi^2 = 4.24$, $df = 4$, $p = .38$). The association between IB Diploma enrollment approached significance ($\chi^2 = 8.41$, $df = 4$, $p = .08$).

Association of Cluster Assignment to Schooling Outcomes

Student cumulative GPA and attendance data were collected one school year after the SEI and SBI were completed by students, meaning that outcome data were available for ninth through eleventh graders for this analysis ($N = 580$). Absences ranged from 0 to 51 for the sample ($\bar{x} = 6.63$, $s = 6.54$) and GPA ranged from 74.07 to 99.78 ($\bar{x} = 91.73$, $s = 5.05$). The percentage of participants and demographic characteristics within each cluster for the students with outcome data are presented in Table 2.7.

Table 2.6
Description of Total Sample by Cluster for the Five-Cluster Model

Characteristic			Cluster		
	1	2	3	4	5
Total Sample	66 (9.6%)	226 (33.0%)	153 (22.4%)	189 (27.6%)	50 (7.3%)
Gender*					
Female	31 (47.0%)	103 (45.6%)	74 (48.4%)	126 (66.7%)	22 (44.0%)
Male	35 (53.0%)	123 (54.4%)	79 (51.6%)	63 (33.3%)	28 (56.0%)
Grade Level*					
9th grade	29 (43.9%)	101 (44.7%)	68 (44.4%)	46 (24.3%)	30 (60.0%)
10th grade	20 (30.3%)	69 (30.5%)	38 (24.8%)	67 (35.4%)	10 (20.0%)
11th grade	10 (15.2%)	31 (13.7%)	29 (19.0%)	27 (14.3%)	5 (10.0%)
12th grade	7 (10.6%)	25 (11.1%)	18 (11.8%)	49 (25.9%)	5 (10.0%)
Race-Ethnicity					
American Indian	0 (0.0%)	0 (0.0%)	1 (0.7%)	0 (0.0%)	1 (0.7%)
Asian	4 (6.1%)	9 (4.0%)	5 (3.3%)	9 (4.8%)	4 (8.0%)
Black	17 (25.8%)	43 (19.0%)	30 (19.6%)	39 (20.6%)	9 (18.0%)
Hispanic	0 (0.0%)	7 (3.1%)	7 (4.6%)	6 (3.2%)	2 (4.0%)
Multiracial	6 (9.1%)	21 (9.3%)	10 (6.5%)	12 (6.3%)	5 (10.0%)
White	39 (59.1%)	146 (64.6%)	100 (65.4%)	123 (65.1%)	29 (58.0%)
504 Plan					
Yes	15 (22.7%)	23 (10.2%)	21 (13.7%)	29 (15.3%)	8 (19.0%)
No	51 (77.3%)	203 (89.8%)	132 (86.3%)	160 (84.7%)	42 (84.0%)
Special Education					
Yes	4 (6.1%)	18 (8.0%)	13 (8.5%)	20 (10.6%)	3 (6.0%)
No	62 (93.9%)	208 (92.0%)	140 (91.5%)	169 (89.4%)	47 (94.0%)
IB Career Certificate					
Yes	9 (13.6%)	26 (11.5%)	18 (11.8%)	32 (16.9%)	8 (16.0%)
No	57 (86.4%)	200 (88.5%)	135 (88.2%)	157 (83.1%)	42 (84.0%)
IB Diploma					
Yes	24 (36.4%)	118 (52.2%)	70 (45.8%)	77 (40.7%)	25 (50.0%)
No	42 (63.6%)	108 (47.8%)	83 (54.2%)	112 (59.3%)	25 (50.0%)
Dual Enrollment					
Yes	5 (7.6%)	12 (5.3%)	16 (10.5%)	18 (9.5%)	5 (10.0%)
No	61 (92.4%)	214 (94.7%)	137 (89.5%)	171 (90.5%)	45 (90.0%)

*Chi-square analyses determined significant associations between gender and cluster and between grade level and cluster.

Table 2.7

Description of Sample with Outcome Data by Cluster for the Five-Cluster Model

Characteristic	**Cluster**				
	1	2	3	4	5
Total	59 (10.2%)	201 (34.6%)	135 (23.3%)	140 (24.1%)	45 (7.8%)
Female	29 (49.2%)	84 (41.8%)	65 (48.1%)	98 (70.0%)	20 (44.4%)
Male	30 (50.8%)	117 (58.2%)	70 (51.9%)	42 (30.0%)	25 (55.6%)
9th grade	29 (49.2%)	101 (50.2%)	68 (50.4%)	46 (32.9%)	30 (66.7%)
Female	12 (41.4%)	39 (38.6%)	32 (47.1%)	34 (73.9%)	12 (40.0%)
Male	17 (58.6%)	62 (61.4%)	36 (52.9%)	12 (26.1%)	18 (60.0%)
10th grade	20 (33.9%)	69 (34.3%)	38 (28.1%)	67 (47.8%)	10 (22.2%)
Female	10 (50.0%)	31 (44.9%)	18 (47.4%)	42 (62.7%)	4 (40.0%)
Male	10 (50.0%)	38 (55.1%)	20 (52.6%)	25 (37.3%)	6 (60.0%)
11th grade	10 (16.9%)	31 (15.5%)	29 (21.5%)	27 (19.3%)	5 (11.1%)
Female	7 (70.0%)	14 (45.2%)	15 (51.7%)	22 (81.5%)	4 (80.0%)
Male	3 (30.0%)	17 (54.8%)	14 (48.3%)	5 (18.5%)	1 (20.0%)

Student GPA and absences were transformed into standardized z-scores before being added to the univariate general linear models. Along with the five-cluster model group membership, gender and grade level were also included in these models because of their significant association with cluster membership identified in the chi-square analyses. In addition to examining the main effects and interactions amongst variables in the model, Gabriel's Pairwise Comparisons Test was implemented as a post-hoc analysis of the profile and grade-level variables.

First, tests of between-subject effects for absences (Table 2.8) suggested that there was no main effect of gender ($p = .16$) or cluster membership ($p = .24$) on student absences. However, there was a main effect for grade level on absences ($p = .04$). None of the interactions in the model were statistically significant. Results of Gabriel's post hoc comparisons for grade level (Table 2.9) revealed that eleventh graders had significantly more absences than ninth

graders ($p < .001$). The mean difference in absences was not significant between ninth and tenth

graders or between tenth and eleventh graders.

Table 2.8
Tests of Between-Subject Effects for Absences

Predictor	Type III Sum of Squares	df	Mean Square	F	p
(Intercept)	2.88	1	2.88	3.01	.08
Grade	6.27	2	3.13	3.29	.04
Gender	1.86	1	1.86	1.95	.16
Cluster	5.25	4	1.31	1.38	.24
Grade x Gender	4.67	2	2.34	2.45	.09
Grade x Cluster	10.64	8	1.33	1.40	.20
Gender x Cluster	.90	4	.22	.24	.92
Grade x Gender x Cluster	3.50	8	.44	.46	.89
Error	524.13	550	.95		

Table 2.9
Gabriel Post Hoc Comparisons for Absences by Grade Level

Grade (I)	Grade (J)	Mean Difference (I-J)	Standard Error	p	95% Confidence Interval
9th	10th	-.19	.09	.11	[-.40, .03]
	11th	-.51	.11	<.001	[-.77, -.25]
10th	9th	.19	.09	.11	[-.03, .40]
	11th	-.32	.12	.02	[-.60, -.04]
11th	9th	.51	.11	<.001	[.25, .77]
	10th	.32	.12	.02	[.04, .60]

Tests of between-subject effects for GPA are displayed in Table 2.10. Results suggested a

main effect for grade level on student GPA ($p = .02$). Although there were no significant main

effects for gender ($p = .12$) or cluster membership ($p = .12$), there were multiple significant

interactions in the model. Specifically, there was a significant interaction effect on GPA for

grade by gender ($p < .001$) and grade by cluster ($p = .02$). The interaction between gender and

cluster membership was not significant ($p = .19$). However, the three-way interaction between

grade, gender, and cluster was significant ($p = .03$; see Figures 2.1 and 2.2 for complete details).

Results of Gabriel's post hoc comparisons for grade level (Table 2.11) showed that ninth graders

had significantly greater GPAs compared to eleventh graders ($p < .001$). The mean difference in

GPA was not significant between ninth and tenth graders or between tenth and eleventh graders.

Pairwise comparisons of GPA by cluster membership are presented in Table 2.12. Results

suggested that mean GPA was significantly lower ($p = .01$) for students in the Disengaged and

Burned-Out group (Cluster 1) compared to the Minimally Engaged group (Cluster 2). None of

the other pairwise comparisons for cluster and GPA were significant. Mean trends in GPA for

males and females by cluster are provided in Figure 2.1 and Figure 2.2, respectively.

Table 2.10
Tests of Between-Subject Effects for GPA

Predictor	Type III Sum of Squares	df	Mean Square	F	p
(Intercept)	4.77	1	4.77	5.34	.02
Grade	6.81	2	3.41	3.81	.02
Gender	2.13	1	2.13	2.38	.12
Cluster	6.64	4	1.66	1.86	.12
Grade x Gender	17.83	2	8.91	9.97	<.001
Grade x Cluster	15.91	8	1.99	2.23	.02
Gender x Cluster	5.55	4	1.39	1.55	.19
Grade x Gender x Cluster	15.44	8	1.93	2.16	.03
Error	491.54	550	.89		

Table 2.11
Gabriel Post Hoc Comparisons for GPA by Grade Level

Grade (I)	Grade (J)	Mean Difference (I-J)	Standard Error	p	95% Confidence Interval
9th	10th	.18	.09	.11	[-.03, .39]
	11th	.41	.11	<.001	[.15, .66]
10th	9th	-.18	.09	.11	[-.39, .03]
	11th	.22	.11	.14	[-.05, .49]
11th	9th	-.41	.11	<.001	[-.66, -.15]
	10th	-.22	.11	.14	[-.49, .05]

Table 2.12
Gabriel Post Hoc Comparisons for GPA by Cluster Membership

| Cluster (I)	Cluster (J)	Mean Difference (I-J)	Standard Error	p	95% Confidence Interval
1	2	-.44	.14	.01	[-.82, -.07]
	3	-.37	.15	.11	[-.77, .04]
	4	-.28	.15	.40	[-.69, .12]
	5	-.47	.19	.11	[-1.00, .05]
2	1	.44	.14	.01	[.07, .82]
	3	.08	.11	1.00	[-.22, .37]
	4	.16	.10	.72	[-.13, .45]
	5	-.03	.16	1.00	[-.44, .38]
3	1	.37	.15	.11	[-.04, .77]
	2	-.08	.11	1.00	[-.37, .22]
	4	.09	.11	1.00	[-.24, .41]
	5	-.10	.16	1.00	[-.55, .34]
4	1	.28	.15	.40	[-.12, .69]
	2	-.16	.10	.72	[-.45, .13]
	3	-.09	.11	1.00	[-.41, .24]
	5	-.19	.16	.92	[-.63, .25]
5	1	.47	.19	.11	[-.05, 1.00]
	2	.03	.16	1.00	[-.38, .44]
	3	.10	.16	1.00	[-.34, .55]
	4	.19	.16	.92	[-.25, .63]
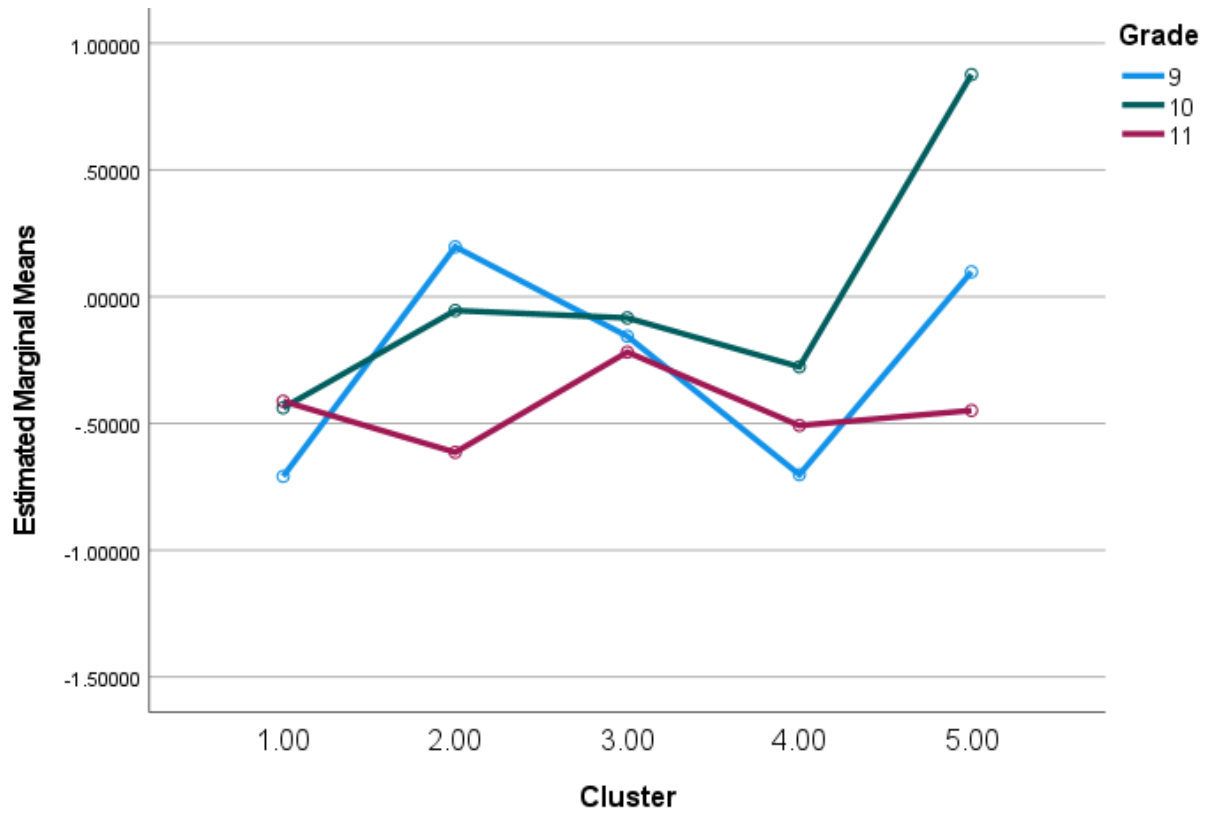
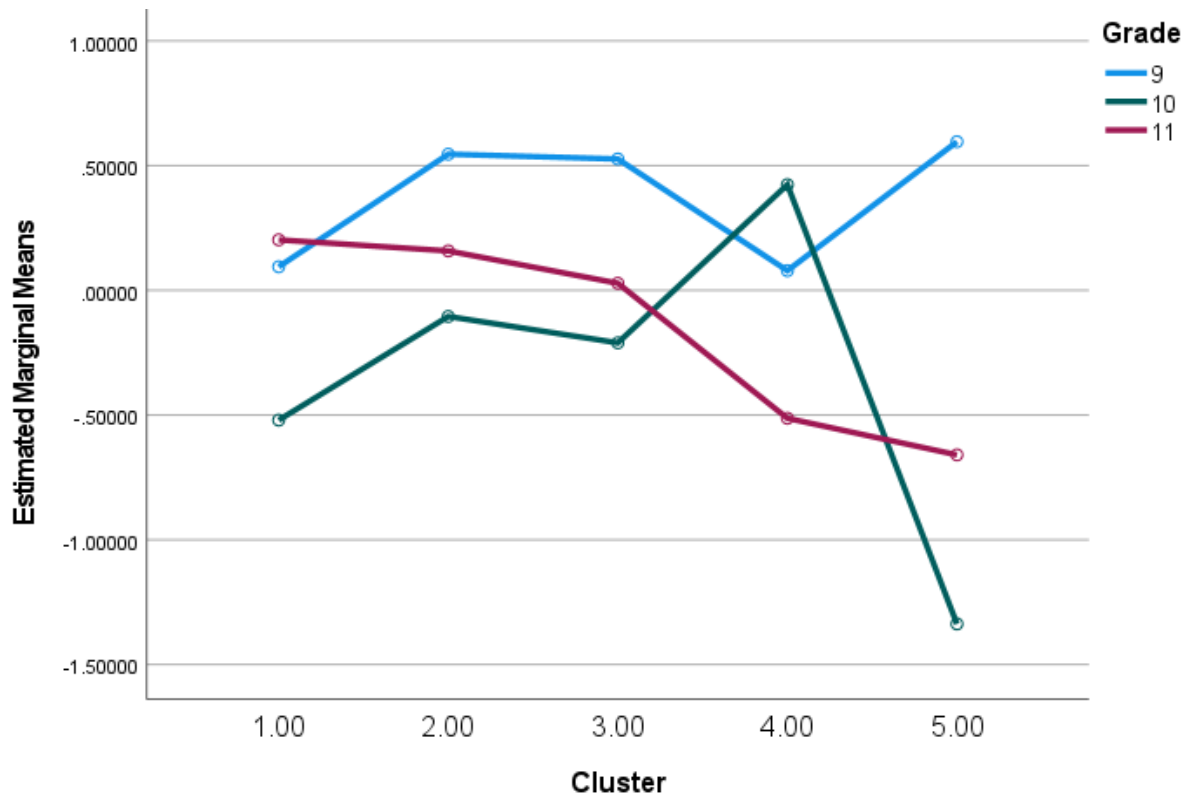Figure 2.1. Estimated Marginal Means of GPA by Cluster and Grade for Males

Figure 2.2. Estimated Marginal Means of GPA by Cluster and Grade for Females

Discussion

Student engagement is a multidimensional construct with well-documented relationships with a variety of educational outcomes, including academic achievement (Balfanz et al., 2007; Finn, 2006; Finn & Rock, 1997) and subjective well-being (Heffner & Antaramian, 2016; Tian et al., 2016). Longitudinal research on student engagement has demonstrated that most students exhibit high and stable levels of engagement, and that these students are more likely to experience positive educational outcomes such as on-time high school graduation and postsecondary attendance (Janosz et al., 2008; O'Donnell et al., 2021; Wylie & Hodgen, 2012). However, lower and more varied trends of engagement are associated with worse outcomes, including high school dropout. Recently within the literature, more studies are utilizing person-

centered analysis to better understand profiles of student engagement. These studies have also documented the presence of varied engagement profiles that are associated with differential academic, behavioral, and social-emotional outcomes and student characteristics (Fredricks et al., 2019; Lawson & Masyn, 2015; Wang & Peck, 2013). In addition to exploring profiles of student engagement, Salmela-Aro and colleagues (Salmela-Aro et al., 2016; Tuominen-Soini & Salmela-Aro, 2014) have also added student burnout to these analyses. Building on this literature, more research is needed that considers how to best identify groups of students with varied levels of engagement and disaffection, which would allow us to compare the educational outcomes of these groups to better inform targeted interventions for students in need of additional support (Fredricks et al., 2019).

The purpose of the current study was to examine student engagement and burnout profiles using comprehensive, theory-based measures of these constructs and latent profile analysis (LPA) in a sample of high school students from a high-achieving school district in the Southeastern United States. Utilizing the Student Engagement Instrument (SEI; Appleton et al., 2006) and the School Burnout Inventory (SBI; Salmela-Aro et al., 2009a), this study sought to examine profiles of student engagement (including cognitive and affective components) and burnout (including exhaustion, cynicism, and feelings of inadequacy). The relationships between these profiles and student characteristics (e.g., grade level, gender, racial-ethnic background, 504 and special education status, and enrollment in advanced courses), and prediction of educational outcomes (e.g., student grade point average [GPA] and absences) one-year post-survey completion, were explored using chi-square analyses and univariate general linear models.

It was hypothesized that results of the LPA would suggest that between four to six clusters with various configurations of engagement and burnout would best fit the data based on

the findings from previous studies. We found that both the four- and five-cluster models fit the data well using statistical indicators, but that the five-cluster model was more conceptually and practically relevant to our sample as it distinguished both Highly Engaged and Minimally Engaged groups. This five-cluster model also allowed us to examine a Disengaged group that was distinct from the other identified clusters in that, for all other groups, engagement tended to correlate with a lack of burnout or disengagement tended to correlate with burnout. The presence of the Disengaged group of students who were not burned out highlighted that students can vary in engagement and burnout measures in nonnormative ways, which might be relevant to intervention efforts in schools.

Overall, the LPA resulted in Minimally Engaged (33.0%), Moderately Burned Out (27.6%), Disengaged (22.4%), Highly Disengaged and Burned Out (9.6%), and Highly Engaged (7.3%) clusters. Previous studies suggest that most students fall within moderate to high engagement groups (Lawson & Masyn, 2015; Tuominen-Soini & Salmela-Aro, 2014; Wang & Peck, 2013). However, this study identified significant groups of students who were better characterized as being minimally engaged, disengaged, or moderately burned out as compared to the highly engaged group. These findings are similar to those described in Salmela-Aro et al. (2016) for their sample of students from the United States, which suggested that 12% of students fell within the engaged group, 33% in engaged-exhausted, 41% in moderately burned-out, and 14% in burned-out. This pattern might be related to the participants examined in this study. The high school where data were collected boasts a 95.2% graduation rate, compared to the state average of 82.0% (Georgia Department of Education, 2019), and appears to utilize rigorous and challenging curriculum; most students were enrolled in some type of advanced course program in our study. Previous research has identified that placement in "academic tracks" versus "career

and technical education tracks" is linked to competitiveness and achievement pressure, which might heighten experiences of student burnout (Salmela-Aro et al., 2008a; Salmela-Aro & Tynkkynen, 2012).

Relatedly, we also expected that the five clusters would be differentially related to demographic variables. Based on previous research (e.g., Fredricks et al., 2019; Li & Lerner, 2011), we hypothesized that racial-ethnic minorities, males, and students in special education would be overrepresented in the lower engagement profiles. However, there was no indication of racial ethnic, 504 or special education status, or advanced course enrollment differences by cluster. Although we might have expected that enrollment in the IB Diploma program, the most rigorous of the advanced coursework options, would lead to higher rates of burnout (as suggested by Suldo & Shaunessy-Dedrick, 2013 and Suldo et al., 2018), this group was not found to be overrepresented in the burned-out clusters in our study. Similarly, other research has suggested that Latino and African American students (Li & Lerner, 2011) and students with disabilities (Reschly & Christenson, 2006) report lower levels of engagement than their peers, which was not identified in our analyses.

Results did suggest gender differences in cluster membership. Although we had hypothesized that males would be overrepresented in low engagement profiles, this relationship was not found. This was unexpected, given the findings of previous studies that suggest girls report higher levels of engagement than boys (Cooper, 2014; Lam et al., 2012; Li & Lerner, 2011). Instead, results suggested females were overrepresented and males were underrepresented in the Moderately Burned Out group. This finding is consistent with the literature, however, as studies suggest that girls report higher levels of exhaustion and academic stress compared to boys (Herrmann et al., 2019; Salmela-Aro et al., 2008a; Walburg, 2014). Herrman and

colleagues (2019) found that this gender difference might be related to girls having higher academic-contingent self-esteem and lower global self-esteem, resulting in higher levels of extrinsic motivation and lower levels of intrinsic motivation. Altogether, such discrepancies within the research emphasize the critical need for additional studies investigating student engagement, burnout, and student characteristics.

Grade level differences in cluster membership were also identified in the current study. Ninth graders were overrepresented in the Highly Engaged group and underrepresented in the Moderately Burned Out group. This finding likely reflects developmental trajectories of these constructs and suggests a point for potential intervention. Studies suggest that student engagement tends to decline over time (Appleton & Reschly, 2019; NRC, 2004), while student burnout tends to increase (Engels et al., 2019; Lee & Lee, 2018). Future studies that consider both engagement and burnout that utilize analyses such as growth mixture modeling (Jung & Wickrama, 2008; Ram & Grimm, 2009) may be better able to elucidate the trajectories of these profile differences over time simultaneously.

Finally, we hypothesized that profiles with higher levels of engagement and lower levels of burnout would be associated with fewer absences and higher GPAs. The model examining the effect of cluster membership, gender, and grade level on absences found that grade level influenced absences; results suggested that ninth graders had significantly fewer absences than eleventh graders. This reflects the finding that rates of chronic absenteeism increase as students progress from elementary to high school (United States Department of Education, 2019). However, main effects were not found for cluster membership or gender and no interaction effects were identified for student absences. While most student engagement profile studies reviewed for this study did not include absences as an outcome variable, Fredricks et al. (2019)

identified that their profile with the lowest levels of disengagement had fewer absences. This discrepancy in results could be related to differences in samples (e.g., majority middle school students versus high school students). However, other studies have used attendance as a variable within student engagement profiles (Johnson et al., 2021) rather than as an outcome variable. Relatedly, some theoretical models of student engagement consider attendance to be a component of the behavioral engagement subtype (Appleton et al., 2006), suggesting that future research must consider how to best use attendance data in their analyses.

Results of the general linear model for student GPA similarly found a main effect for grade level, but not for gender or cluster. This could be related to juniors and seniors taking more advanced level courses or dual enrollment courses than freshman, resulting in lower GPAs. Results suggested that mean GPA was significantly lower for students in the Highly Disengaged and Burned Out group (Cluster 1) compared to the Minimally Engaged group (Cluster 2). None of the other pairwise comparisons for cluster and GPA were significant. The model also suggested significant two-way interaction effects on GPA for grade by gender and grade by cluster, and a three-way interaction between grade, gender, and cluster membership. However, results of the three-way interaction were impacted by the small sample sizes for Clusters 1 and 5 when broken down by grade level and gender. Regardless, these findings suggested that, for males, cluster membership appeared to impact GPA as expected, with the Minimally Engaged and Highly Engaged groups having higher GPAs than the other three clusters. This relationship was present for ninth and tenth graders, whereas the GPA of eleventh grade males appeared flat across the five clusters. In contrast, for tenth and eleventh grade females, there was a different pattern, where membership in the Highly Engaged cluster was associated with lower GPA. Ninth grade girls appeared to maintain higher GPAs across Highly Engaged, Minimally Engaged, and

Disengaged clusters. Interestingly, the highest observed GPAs for eleventh grade girls occurred for the Highly Disengaged and Burned Out cluster, and for tenth grade girls occurred for the Moderately Burned Out group. It is important to again note the high-achieving sample utilized in this study. In the sample, no students had below a C-average and the mean GPA was 91.73. Although gender differences in GPA have been observed in other studies, with girls tending to earn better grades than boys (Duckworth & Seligman, 2006; Perkins et al., 2004), this specific effect was not found in our study. The odd results for female students might indicate that GPA is not as useful of an indicator as other outcome variables in high-achieving samples (e.g., social-emotional variables like depressive symptoms; see discussion below).

Implications

This study aimed to utilize person-centered analytic techniques to add to the literature on student engagement. Moreover, originating in work-related contexts, the concept of burnout is a growing concern in student populations (Salmela-Aro, 2017; Walburg, 2014). Ideally, profiles of student engagement and burnout identified in studies could provide useful information to school-based practitioners. Within a high-achieving high school, we identified that large proportions of the student body experienced disengagement and burnout. Although we identified interesting relationships between student engagement and burnout profiles and gender, grade, and GPA, other outcome variables, such as indicators of social-emotional functioning, might also be of interest. Prior research has identified that student burnout is predictive of depressive symptoms (Salmela-Aro et al., 2009b), anxiety symptoms (Silvar, 2001), and suicidal ideation (Ang & Huan, 2006). Moreover, Suldo and colleagues (Suldo & Shaunessy-Dedrick, 2013; Suldo et al., 2008; Suldo et al., 2009) have identified that students in IB and Advanced Placement programs have higher perceived stress related to increased academic demands compared to their peers.

Because of their high levels of academic achievement, these students might not be identified as needing additional support without screening for students' internal experiences of academic stress and burnout.

Related to screening, studies of student engagement and burnout profiles also have implications for intervention. There are studies that suggest negative school climate, peer support, and teacher support influence student burnout (Kiuru et al., 2008; Salmela-Aro et al., 2008b). Similar to a multi-tiered system of supports (MTSS) framework for academics, there is increasing emphasis on the need for tiered intervention approaches to behavioral and social-emotional functioning concerns in schools. High proportions of burnout within a student body likely exemplify the need for changes to Tier 1 supports (e.g., universal social-emotional curricula, emphasis on building healthy coping strategies, etc.; O'Brennan et al., 2019). Moreover, identification of smaller groups of students with significant levels of disengagement and/or burnout suggest the need for Tier 2 or 3 intervention. For example, O'Brennan and colleagues (2019) identified that a brief motivational interviewing intervention appeared effective in increasing students' ability to cope with academic stressors through time and task management strategies in an at-risk group of high-achieving ninth grade students.

Theoretically, our study suggests that assessing aspects of both student engagement and disaffection (such as burnout) can provide important distinctions in student populations that warrant consideration. Although some theories in the literature have consistently emphasized a two continua model of student engagement and disaffection (e.g., Skinner et al., 2008; Martin, 2007), others have not explicitly focused on active, maladaptive processes of disaffection (e.g., Appleton et al., 2006). In addition to the importance of measuring both constructs, differing combinations of engagement versus disaffection endorsed by students may suggest the need for

different supports. For example, it might be of interest in future research to consider the overlap and distinction of interventions that aim to increase student engagement versus those that attempt to reduce burnout or disaffection.

Limitations and Future Directions

One of the limitations of our study was the sample size, especially when considering the number of participants within the smallest cluster identified in our study (the Highly Engaged group) when broken down by gender and grade. Future research with larger samples might be better able to elucidate the relationships between student engagement and burnout profiles, gender, and grade level. Moreover, the literature suggests that there are a range of outcome variables that might be related to engagement-burnout profiles that warrant continued study, particularly those related to social-emotional concerns. This is of particular importance in schools where there are fewer concerns related to academic achievement and disruptive behaviors. This points to the necessity of future research also considering school level variables in their analyses, such as student access to advanced-level courses and perceived school climate.

In addition, there is a need for studies to consider examining student engagement and burnout trajectories over time. Although there are person-centered studies of these constructs that focus on elementary (Johnson et al., 2021; Watt et al., 2017), middle (Fredricks et al., 2019), and high school aged (Lawson & Masyn, 2015; Salmela-Aro et al., 2016) students, it might be of interest to examine how these profiles change during these school transitions. Moreover, longitudinal studies might benefit from assessing more distal outcomes. In addition to high school completion versus dropout, additional research is needed that assesses postsecondary enrollment, persistence, and completion. For example, it would be interesting to explore if, within a high achieving sample of high school students, students within profiles with higher

levels of burnout and/or lower levels of engagement were associated differentially with postsecondary outcomes than their peers with higher engagement and less burnout.

Finally, research is needed to explore the connection between the measurement of student engagement and burnout as a screening tool and the use of related interventions. Such studies could provide more information about best practices regarding how often to screen students, which interventions are more or less effective based on identified profiles, and how to best assess the effectiveness of those interventions. As previously described, there might be varied interventions that are more or less helpful to students who fall within different engagement and burnout profiles, but further research is needed in this area. Relatedly, more research assessing the relationships between these profiles, school-level variables (e.g., educational resources, school location, student demographics, etc.), and long-term educational outcomes would be beneficial.

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CHAPTER 3

CONCEPTUALIZATION AND ASSESSMENT OF ENGAGEMENT AND DISAFFECTION

USING THE STUDENT ENGAGEMENT INSTRUMENT [2]

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[2] O'Donnell, K. C., A. L. Reschly, and J. J. Appleton. To be submitted to *Journal of Psychoeducational Assessment.*

Abstract

Research suggests the need to assess both positive and negative forms of student engagement. The purpose of the current study was to pilot disaffection items along with the Student Engagement Instrument (SEI) within a sample of middle school students from a rural area in the Southeastern United States. This study explored the factor structure of the piloted disaffection items alongside the SEI, measurement invariance of the scale, and associations between student engagement and disaffection factors with educational outcomes such as mathematics and reading test scores, discipline referrals, and absences. Results hold implications to our theoretical understanding of the concept of engagement, suggesting that engagement and disaffection dimensions are theoretically and psychometrically distinct.

Introduction

Although scholars agree in the conceptualization of student engagement as a multidimensional construct (Fredricks et al., 2004), there remains a lack of clarity and consistency regarding the number of student engagement subtypes and definitions of these subtypes within the field (Reschly & Christenson, 2012). Even though behavioral, cognitive, and affective engagement subtypes are the most commonly utilized within the literature (Fredricks et al., 2004), various researchers also have added academic (Appleton et al., 2006) or social (Wang et al., 2017) components to their conceptualizations. In addition, there is no consensus as to whether engagement is conceptualized as a single continuum or with engagement and disaffection (i.e., negative engagement)[3] as two separate continua (Reschly & Christenson, 2012). As Reschly and Christenson (2012) described, two continua models might be understood

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[3] It is important to note that there is no consensus in the field regarding the distinction between "disaffection" and "disengagement." For our study, disengagement refers to a *lack* of engagement, whereas disaffection refers to *active, maladaptive* processes. Researchers with different conceptualizations are noted throughout this chapter.

to parallel the concept in positive psychology which states flourishing mental health does not equate to the absence of mental illness (see Seligman & Csikszentmihalyi, 2000). Over time, more researchers have considered the benefits of viewing engagement and disaffection as separate continua that both warrant measurement. To better understand the differences in conceptualizations of student engagement, the next section of this chapter will explore various models of engagement and disaffection. Subsequently, the importance of assessing disaffection alongside engagement is considered, followed by the purpose of the current study.

Models of Engagement and Disaffection

Finn and Zimmer (2012) described that early conceptualizations of engagement in the 1980s served to help educators understand student dropout and advocate for school reform. Two theories, in particular, greatly shaped modern theories of student engagement: the self-system process model (Connell & Wellborn, 1991) and the participation-identification model (Finn, 1989). After detailing these early models, in this paper newer conceptualizations are also described. Throughout, these models exemplify either the single continuum of engagement or the two continua of engagement and disaffection perspectives.

Self-System Process Model

The self-system process model (Connell & Wellborn, 1991) is a motivational model describing that an individual's experience of their social context (e.g., teacher qualities, classroom climate) constructs self-system processes over time (e.g., control beliefs); these control beliefs result in patterns of engaged or disaffected action, which in turn affect outcomes such as academic performance (Skinner et al., 1990). This model is based on the premise that all humans share basic needs for autonomy, competence, and relatedness (Connell & Wellborn, 1991). That is, self-system processes are viewed as personal resources that are organized around

these three basic needs (Skinner et al., 2008) which might be supported or thwarted by the social context, which cultivate engagement or disaffection, respectively (Skinner et al., 2009a). Within this conceptualization, it is important to note student engagement is viewed as the manifestation of internal motivational processes (Connell & Wellborn, 1991; Skinner et al., 2009b), and engagement is a mediator between these motivational processes and contexts with learning outcomes (Wang et al., 2017). To summarize, research has emphasized two principles of the motivational perspective of self-system theory: that student engagement is a multidimensional construct, and that engagement and disaffection are separate continua (Skinner et al., 2009b; Wang et al., 2017).

Participation-Identification Model

Finn's (1989; Finn & Zimmer, 2012) participation-identification model described developmental cycles of engagement and disengagement which culminate in high school completion and dropout, respectively. Within this model, student behaviors (i.e., participation) result in successful school performance, which leads to increased feelings of belonging and valuing school (i.e., identification). This identification with school also reinforces students' ongoing participation in school activities. Similarly, if students are not able to or do not engage in these behaviors, they are more likely to experience failure at school and thus develop feelings of disidentification. This model includes the influence of the quality of instruction and student abilities on student behavior and performance, and in recent work distinguishes four types of behavior that contribute to participation (Finn & Zimmer, 2012): basic learning behaviors (e.g., attending to the teacher), initiative-taking behaviors (e.g., seeking help when needed), extracurricular activity participation, and social tasks (e.g., attending class and following school rules). The participation-identification cycle also emphasizes the importance of student

participation in early schooling experiences which builds resilience for when students inevitably face less success or adversity (Finn, 1989; Finn & Zimmer, 2012). In contrast to the self-system process model, the participation-identification model endorses a single dimension of engagement (Reschly & Christenson, 2012).

Modern Models

As previously described, most scholars currently conceptualize student engagement as multidimensional (Fredricks et al., 2004), but there is a lack of consensus regarding the exact number of subtypes and the definitions of these subtypes (Reschly & Christenson, 2012). Highlighted below are three modern models reflecting the diversity within the field and which exemplify different conceptualizations of engagement and disaffection.

Christenson and colleagues' (Appleton et al., 2006; Christenson et al., 2008) model of engagement was influenced by both the self-system processes and participation-identification models. Their conceptualization includes behavioral, academic, cognitive, and affective subtypes. Although other models do not differentiate academic engagement from behavioral engagement, this conceptualization developed out of dropout prevention work in schools to align intervention strategies more clearly with engagement subtypes (Appleton et al., 2006, 2008). Therefore, indicators of behavioral engagement within this model include attendance, participation, and preparation for class. Academic engagement indicators consist of time on task, credit accrual, and homework completion. Cognitive engagement indicators include self-regulation, goal setting, and valuing school, while affective engagement indicators encompass feelings of belonging and identification with school (O'Donnell & Reschly, 2020; Reschly et al., 2014a). Christenson and colleagues originally framed this model with engagement along a single continuum (Reschly & Christenson, 2012). Along with this conceptualization, Christenson and

colleagues (Appleton et al., 2006) developed the Student Engagement Instrument (SEI) to assess student self-reported cognitive and affective engagement. The SEI specifically assesses these internal subtypes because, unlike academic and behavioral indicators which are typically readily available in school records and are observable, cognitive and affective subtypes are considered high inference and require student self-report to understand (Appleton et al., 2006; Reschly et al., 2014a).

Growing directly from the self-system process model, Skinner and colleagues' (2008, 2009b) recent work utilizes a model of engagement that includes behavioral and emotional components. Moreover, engagement and disaffection are separated into two dimensions, leading to four subtypes altogether: behavioral engagement, behavioral disaffection, emotional engagement, and emotional disaffection. Within this conceptualization, it is important to note disaffection is viewed as more than a lack of engagement; it involves the presence of maladaptive processes (Skinner et al., 2008). For disaffection, behavioral indicators include passivity and withdrawal while emotional indicators include boredom, anxiety, and frustration. Engagement, on the other hand, is viewed as the active participation in academic work, with behavioral indicators such as effort and attention and emotional indicators such as interest and enjoyment. Through this work, Skinner and colleagues (1990, 2009b) also developed the Engagement vs. Disaffection with Learning Scale (EvsD) to assess these four components, with student- and teacher- report versions of the scale.

Finally, another model of engagement which views engagement and disaffection as separate continua was proposed by Martin (2007). This model was developed from a variety of psychological and educational theories, such as expectancy-value, attribution, goal orientation, and self-worth motivation theories. The Motivation and Engagement Wheel involves four

higher-order factors of engagement (and disaffection): adaptive and impeding/maladaptive cognition and adaptive and maladaptive behavior (Martin, 2007, 2009a). These four dimensions are operationalized by 11 lower-order factors. Adaptive cognition is defined as valuing school, self-efficacy, and mastery orientation. Adaptive behavior consists of persistence, planning, and task management. Impeding or maladaptive cognition indicators include anxiety, avoidance of failure, and a sense of lacking control. Finally, maladaptive behaviors include self-sabotage and disengagement. Utilizing this underlying theoretical model, these dimensions of engagement can be assessed through the student self-report Motivation and Engagement Scale (MES; Martin 2007, 2009b).

Why Should We Care About Disaffection?

Although not all models of student engagement consider engagement and disaffection as two separate continua, there is a growing body of research supporting the idea that disaffection warrants assessment in addition to engagement. First, studies suggest disaffection does not statistically equate to the absence of or low engagement (Skinner et al., 2009b; Wang et al., 2017). Specifically, Skinner and colleagues (2009b) assessed the psychometric properties of the EvsD student- and teacher-report rating scales with sixth grade students. As previously described, this scale assesses behavioral and emotional components of both engagement and disaffection. Structural equation modeling of these indicators revealed the hypothesized four factor model best fit the data in contrast to bipolar or unidimensional models. Similarly, Wang and colleagues (2017) developed and assessed the psychometric properties of a multidimensional school engagement scale with fifth through twelfth grade students. This scale assessed four subtypes (behavioral, emotional, cognitive, and social) of both engagement and disengagement[4],

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[4] Wang and colleagues (2017) use the term "disengagement" within their research to refer to active, negative engagement (i.e., what we define as disaffection).

resulting in eight factors. Results suggested that engagement and disengagement were negatively correlated and structurally distinct from one another.

Similar to the association between student engagement and positive academic and social-emotional outcomes, research suggests greater levels of disaffection are associated with poorer outcomes. Reschly and colleagues (2014b) evaluated the psychometric properties of the SEI (which only assessed engagement; Appleton et al., 2006) and the MES (which assessed both engagement and disaffection; Martin, 2007). Disaffection factors within the MES differentially correlated with academic and behavioral outcomes compared to the SEI engagement factors; specifically, maladaptive cognition negatively correlated with grades, while maladaptive behavior positively correlated with disciplinary problems (Reschly et al., 2014b). They concluded that future research with the SEI might benefit from adding disaffection items based on these results. In another study, Fredricks and colleagues (2019) assessed behavioral, cognitive, emotional, and social components of disengagement[5] with fifth through twelfth graders. The results revealed students with greater levels of disengagement had lower grade point averages, lower educational aspirations, more unexcused absences, and demonstrated more disruptive behaviors than peers with lower levels of disengagement.

In addition, other research has indicated students who demonstrate high levels of engagement might simultaneously experience disaffection. Studies by Salmela-Aro and colleagues (Salmela-Aro et al., 2016; Tuominen-Soini & Salmela-Aro, 2014) have assessed both student engagement and burnout (i.e., exhaustion, cynicism, and feelings of inadequacy) in high school students in the United States and Finland. Although not termed as disaffection, concepts within the burnout category certainly overlap with the former construct. Salmela-Aro and

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[5] Again, Fredricks et al., (2019) utilize the term "disengagement" to refer to active, negative engagement (i.e., disaffection).

colleagues found a portion of students are best characterized as engaged-exhausted, and these students reported greater stress and preoccupation with failures than their peers (Tuominen-Soini & Salmela-Aro, 2014). Practically, these students might not be identified as needing intervention based on their high levels of engagement by teachers or other school data such as grades, but still might benefit from additional social-emotional support.

Despite evidence suggesting the statistical and practical benefits of assessing student disaffection, and its significant relationship with important academic and behavioral outcomes, more research is needed. Additional studies are needed that assess both student engagement and disaffection across the span of schooling to differentiate these constructs, to determine if they contain the same type and number of dimensions, and to determine if they are distinctly related to academic, behavioral, and social-emotional outcomes of interest (Wang et al., 2017). In addition, Reschly and colleagues (2014b) indicated that further research on these constructs needs to consider how to develop theoretically and psychometrically sound measures.

Purpose of the Current Study

Based on these gaps in the literature, the purpose of the current study was to pilot disaffection items with the well-researched SEI. Although previous research with the SEI considered student engagement along a single continuum, Reschly and colleagues (2012, 2014b) identified further research with the SEI should consider the additive benefits of assessing disaffection with further revisions. Although some initial research has sought to pilot disaffection items with elementary school students (Reschly et al., 2019), the current study piloted disaffection items with a sample of middle school students between the sixth and eighth grade in a rural area of the Southeastern United States. The purpose of this study was to address the following research questions:

1. Can factor analysis distinguish student engagement and disaffection factors similar to previous research? How do engagement and disaffection factors correlate?

2. What is the relationship between student engagement, disaffection, and behavioral and academic outcomes such as discipline referrals, attendance, and academic achievement?

3. To what extent do the SEI and additional disaffection items demonstrate measurement invariance across grades and gender?

Method

Participants

Participants included sixth through eighth grade students from a middle school in a rural school district in the Southeastern United States ($N = 1,038$; see Table 3.1).

Table 3.1
Description of Participants - Sample Sizes and Percentages

	Sample Size	Percentage
Total	1,038	100.0
Female	511	49.2
Male	527	50.8
Grade Level		
6th	348	33.5
7th	343	33.0
8th	347	33.4
Race/Ethnicity		
Asian	38	3.7
Black	52	5.0
Hispanic	88	8.5
Multiracial	74	7.1
Native American	6	0.6
White	780	75.1
Other Demographics		
English Language Learner	116	11.2
Special Education	132	12.7
Gifted Program	176	17.0

Measures

The Student Engagement Instrument (SEI; Appleton et al., 2006) assesses the cognitive and affective engagement of middle and high school students from sixth through twelfth grade. This standardized self-report survey contains 33-items for research purposes. The paper-and-pencil version of the SEI can be obtained for free after registering on the Check & Connect website (http://checkandconnect.umn.edu/research/sei_register.html). Multiple studies have confirmed the five-factor structure of the SEI (Appleton et al., 2006; Betts et al, 2010; Reschly et al., 2014b). Control and Relevance of Schoolwork and Future Goals and Aspirations factors fall within cognitive engagement aspects of student engagement, and Teacher-Student Relationships, Peer Support for Learning, and Family Support for Learning factors fall within affective engagement components of student engagement. Responses are recorded using a 5-point Likert scale (Strongly Disagree [1] to Strongly Agree [5]) and summed for the five factors.

Scores on the SEI are associated with attendance, suspensions, and academic achievement in expected ways (Appleton et al., 2006; Lovelace et al., 2014; Reschly, et al., 2014) and are predictive of high school completion (Lovelace et al., 2014; Lovelace et al., 2017; Pearson, 2014) and college attendance and persistence (Fraysier et al., 2020). Reschly and colleagues (2014b) found evidence of convergent and divergent validity with another measure of motivation and engagement (i.e., the Motivation Engagement Scale [MES], Martin, 2007). Finally, Betts and colleagues (2010) reported measurement invariance across sixth through twelfth grade and gender.

In addition to the standard SEI, eight disaffection items were piloted in this study. These items were originally piloted with an elementary school sample by Reschly and colleagues (2019). Development of these items was based off Skinner and colleagues' (2009b) and Martin's

(2007) scholarly writings on aspects of disaffection. Pilot items were hypothesized to examine both cognitive and affective disaffection components (see Appendix A for all items). Responses are recorded using a 5-point Likert scale (Strongly Disagree [1] to Strongly Agree [5]). Scores were reverse coded for analysis, so that lower scores indicated greater disaffection and higher scores indicated less disaffection.

Data Procedures

This study utilized extant data collected as a part of a school system improvement project with the approval of the University of Georgia Institutional Review Board. The school administered a free online format of the SEI with permission upon registration in addition to the pilot disaffection items. Surveys were administered in the beginning of the fall semester in 2019 via Google Sites. Outcome data were collected at the end of the fall semester. In addition to student self-reported engagement and disaffection, school records provided information regarding student behavior (i.e., disciplinary incidents, attendance), academic achievement (i.e., percentile rank performance on norm-referenced achievement tests for reading and mathematics), and demographic information. Student attendance was calculated as the percentage of days absent from school relative to the total days enrolled within the fall semester. Similarly, disciplinary incidents were calculated as the percentage of behavioral referrals received relative to total days enrolled within the fall semester.

Analyses

Data analyses were completed with the statistics program R. First, exploratory factor analyses (EFA) were utilized to examine the factor structure of the piloted disaffection items. EFAs were conducted for one-, two-, and three-factor solutions. A minimum residual (minres) solution (i.e., an unweighted least squares solution) was utilized. In addition, an oblique rotation

(i.e., Oblimin Method) was chosen given the likelihood that the factors would be correlated. Each EFA model was evaluated according to factor interpretability, factor determination, and model fit indices. The most appropriate factor model discovered through EFA was then subjected to confirmatory factor analysis (CFA) with the five SEI factors. As previously described, studies have confirmed the five-factor structure of the SEI (Betts et al., 2010; Reschly et al., 2014b). Following the procedures described by Reschly and colleagues (2014b), model fit was evaluated using three indices: the comparative fit index (CFI), the Tucker-Lewis index (TLI), and the root mean square error of approximation (RMSEA).

Correlational analyses were also used to evaluate the relationship between the SEI and piloted disaffection factors and the relationship between these factors and academic (i.e., achievement test scores) and behavioral (i.e., attendance, discipline referrals) outcomes (Reschly et al., 2014b). In addition, this study utilized a similar analytic procedure outlined by Betts and colleagues (2010) to examine the measurement invariance of the SEI and disaffection factors to assess the psychometric equivalence of these constructs across grade levels six through eight and gender (Putnick & Bornstein, 2016). Measurement invariance was investigated using a multiple group confirmatory factor approach by testing for configural, metric, threshold, and residual invariance.

Overall, no data were missing for the SEI and pilot items, absences, or discipline referrals. Achievement test scores were missing for 19 participants (i.e., less than 0.02% of the sample). Thus, we considered bias in the model estimates a very low risk, and pairwise complete procedures for missing data were used during analyses (i.e., any case with complete data for the variables being correlated was included in the correlation being computed).

Research Questions

Consistent with prior research, it was hypothesized the sample would replicate the five-factor structure of the SEI using CFA. As the disaffection pilot items were developed to encapsulate both cognitive and affective components (Reschly et al., 2019), it was also hypothesized that analyzing the factor structure of the disaffection items would reveal a two-factor structure. Generally, we expected that high levels of student engagement would be positively correlated with low levels of disaffection, or that these factors would not be significantly correlated, based on previous research that identified this pattern between the SEI and the MES (Reschly et al., 2014b). A lack of significant correlations might indicate that student engagement and disaffection are separate continua. Reschly et al. (2014b) also identified that disaffection factors of the MES were significantly related to grades and behavior problems in expected directions; they found a significant negative correlation between maladaptive cognition and grades and a significant positive correlation between maladaptive behavior and discipline referrals. In addition, Reschly and colleagues (2014b) indicated there might be utility in measuring disaffection above and beyond the utility of measuring student engagement alone. Therefore, it was hypothesized that the piloted disaffection items would be significantly correlated to academic and behavioral outcomes differentially from the correlations between student engagement and these outcomes in this study. Finally, consistent with the results of Betts et al., (2010), it was hypothesized that the SEI and disaffection factors would demonstrate measurement invariance across grade level and gender.

Results

Exploratory Factor Analysis (EFA)

EFAs for one-, two-, and three-factor models were examined. Potential solutions were evaluated based on both model fit (i.e., root mean square error of approximation [RMSEA; Steiger & Lind, 1980], <= 0.08 suggests a reasonable model fit; Browne & Cudeck, 1993) and interpretability of the factors (Brown, 2006). The one- and three-factor solutions were rejected. The one-factor solution did not demonstrate adequate model fit, while the three-factor solution resulted in poorly defined factors with few items. The two-factor model demonstrated adequate model fit (i.e., RMSEA = 0.08) and identified well-defined factors (i.e., all items loading above 0.40) without poorly behaving items (i.e., no cross-loadings above 0.20). This also fit with the theoretical conceptualization used when constructing the disaffection pilot items and the hypothesized two-factor solution.

Table 3.2 displays the items and factor loading results of the two-factor EFA. Despite hypothesizing that the pilot items would tap cognitive and affective components of disaffection, examination of the items suggested that the factors might be better conceptualized as behavioral (e.g., not wanting to attend school or participate in class) versus affective/cognitive (e.g., feeling nervous, viewing self as not smart) disaffection. As such, Factor 1 was labeled "Behavioral Disaffection," while Factor 2 was labeled "Affective/Cognitive Disaffection." Based on the EFA findings, the two-factor solution was used for further analysis.

Table 3.2

Items and Factor Loading of the Two-Factor Disaffection Model

Items	Factor 1	Factor 2
I don't like school	**0.565**	0.121
I feel nervous when I'm at school		**0.595**
I look for excuses not to come to school	**0.637**	0.133
I don't understand why I get the grades I do		**0.566**
I daydream during class	**0.769**	
I don't pay attention during class	**0.772**	
If I don't do well on a test or assignment, it is because I am not very smart		**0.674**
Sometimes I don't feel like participating in class	**0.648**	

Factor 1: Behavioral Disaffection
Factor 2: Affective/Cognitive Disaffection

Confirmatory Factor Analysis (CFA)

Following exploratory analysis, we included the two-factor solution established by the EFA to cross-validate through CFA, in addition to examining the five-factor structure of the Student Engagement Instrument (SEI; Appleton et al., 2006). Table 3.3 displays the results of the seven-factor CFA for the SEI and disaffection factors. The goodness-of-fit measures (the comparative fit index [CFI; Bentler, 1990], the Tucker-Lewis index [TLI; Tucker & Lewis, 1973], and the RMSEA) suggested that the proposed model fit the data well. Specifically, the 90% confidence interval for the RMSEA fell within range of the guideline of 0.05 for good model fit (Browne & Cudeck, 1993). Moreover, both the CFI and TLI fell above 0.95, similarly indicating good model fit (Bentler, 1990). Overall, the intended factor structure for the SEI and piloted disaffection items was replicated. Cronbach's alpha values were also calculated to provide evidence of internal consistency for the seven-factor model. As indicated in Table 3.4, most factors demonstrated acceptable to good internal consistency. However, the Affective/Cognitive Disaffection scale had low reliability (0.61).

Table 3.3

Confirmatory Factor Analysis Results - Student Engagement Instrument and Disaffection
Seven-Factor Model Fit Indices

Model	χ^2	df	RMSEA	90% CI RMSEA	CFI	TLI
Seven-factor	2887.329*	758	0.052	[0.050 – 0.054]	.984	.982
Guidelines for good model fit			<.05	<.05	≥.95	≥.95

Note. χ^2 = model minimum fit chi-square; RMSEA = root mean square error of approximation; CFI =
comparative fit index; TLI = Tucker-Lewis index.
* $p < .001$

Table 3.4

Seven-Factor Solution Cronbach's Alpha Values

Factor	Cronbach's alpha
Teacher-Student Relationships	0.88
Peer Support for Learning	0.85
Family Support for Learning	0.77
Control and Relevance of Schoolwork	0.82
Future Goals and Aspirations	0.82
Behavioral Disaffection	0.79
Affective/Cognitive Disaffection	0.61

Correlational Analysis

Table 3.5 provides information about the correlations between the SEI factors,

disaffection factors, and outcome variables. A Bonferroni-corrected alpha was utilized to

evaluate the significance of the correlations (Bonferroni-corrected alpha = 0.0009). Disaffection

scores were reverse coded for analysis (lower scores indicated greater disaffection and higher

scores indicated less disaffection). All correlations between the SEI factors and disaffection

factors were significant in the expected directions; SEI factors were positively correlated with

one another and the disaffection factors were positively correlated with each other. In addition,

the positive correlations between SEI and disaffection factors indicated that greater levels of

student engagement significantly correlated with lower levels of disaffection, consistent with

patterns identified in previous research (Reschly et al., 2014b). However, results did not garner

non-significant correlations, which might have provided evidence that the student engagement and disaffection factors are separate continua rather than ends of the same spectrum.

Four outcome variables were examined through correlational analyses: norm-referenced percentile scores for reading and mathematics assessments, percentage of discipline referrals by days enrolled, and percentage of absences by days enrolled. Two SEI factors were not significantly correlated with any outcome variable (i.e., Family Support for Learning and Control and Relevance of Schoolwork). Similarly, no SEI factors significantly correlated with reading or mathematics test scores. Three SEI factors (Teacher-Student Relationships, Peer Support for Learning, and Future Goals and Aspirations) significantly correlated with discipline rates in the expected direction, with greater levels of engagement associated with fewer discipline referrals. For absences, the only significant correlation with engagement factors was with Teacher-Student Relationships. This was again in the expected direction, with greater levels of engagement being associated with lower rates of absences.

For the two disaffection factors, Behavioral Disaffection was significantly correlated with discipline referrals and attendance rates, suggesting that lower levels of behavioral disaffection were associated with fewer referrals and absences. Finally, the Affective/Cognitive Disaffection factor was the only factor in the study to significantly correlate with mathematics and reading test scores. This factor was also correlated with student absences. That is, lower affective/cognitive disaffection was related to higher reading and mathematics test scores as well as lower rates of absences. Altogether, the correlational analyses revealed that the student disaffection factors were differentially correlated with the outcome variables when compared to the student engagement factors, providing evidence that engagement and disaffection should be viewed as distinct constructs and that there is utility in measuring both constructs.

Table 3.5

Spearman Correlations between Factors and Associated Variables

Variable	TSR	PSL	FSL	CRS	FGA	BD	ACD	Math	Reading	Discipline	Absences
TSR	-										
PSL	**0.420**	-									
FSL	**0.442**	**0.389**	-								
CRS	**0.698**	**0.378**	**0.497**	-							
FGA	**0.465**	**0.356**	**0.517**	**0.587**	-						
BD	**0.548**	**0.356**	**0.352**	**0.592**	**0.428**	-					
ACD	**0.370**	**0.368**	**0.317**	**0.342**	**0.279**	**0.481**	-				
Math	-0.022	0.037	0.009	-0.108	0.063	0.073	**0.233**	-			
Reading	-0.033	0.028	0.026	-0.103	0.056	0.060	**0.192**	0.728	-		
Discipline	**-0.117**	**-0.125**	-0.089	-0.096	**-0.131**	**-0.188**	-0.063	**-0.203**	**-0.217**	-	
Absences	**-0.110**	-0.070	0.030	-0.064	-0.048	**-0.173**	-0.110	**-0.167**	**-0.149**	0.141	-

Note: TSR = Teacher-Student Relationships; PSL = Peer Support for Learning; FSL = Family Support for Learning; CRS = Control and Relevance of Schoolwork; FGA = Future Goals and Aspirations; BD = Behavioral Disaffection; ACD = Affective/Cognitive Disaffection; Math = Standardized mathematics test scores; Reading = Standardized reading test scores; Discipline = Number of discipline referrals divided by total days enrolled; Absences = Number of absences divided by total days enrolled. Disaffection scores were reverse coded for analysis, so that lower scores indicated greater disaffection and higher scores indicated less disaffection. Bolded values indicate significance based on the Bonferroni-corrected alpha level of 0.0009.

Measurement Invariance

As previously described, measurement invariance was investigated for both grade level and gender using a multiple group confirmatory factor approach like Betts and colleagues (2010). These analyses included four measurement invariance models: configural/equivalence of model form, metric/equivalence of factor loadings, scalar/equivalence of item thresholds, and residual/invariant uniqueness (Putnick & Bornstein, 2016). Measurement invariance estimation used the model outlined from the CFA as the baseline model, with grade level or gender serving as the grouping variable for each set of analyses. For two of the SEI factors (Future Goals and Aspirations and Family Support for Learning), there was no threshold between Strongly Disagree (a rating of 1) and Disagree (a rating of 2) for eighth grade students, as none endorsed Strongly Disagree. As such, these two responses were collapsed to be able to assess measurement invariance for grade for these two factors.

Table 3.6 shows the results for the measure invariance analysis for gender and Table 3.7 for grade. All the models fit the data well, even as the models became more restrictive. Specifically, for both grade and gender, the CFI ranged from 0.94 to 0.95, the TLI ranged from 0.93 to 0.95, and the RMSEA stayed at 0.05. Like the results of Betts et al., (2010), these findings support the assumption of equivalent configural, metric, threshold, and residual invariance for the SEI and disaffection factors between grades six through eight and between females and males.

Table 3.6

Results of Measurement Invariance for Gender

| | Gender Invariance | | | |
| | Model | | | |
Fit Index	Configural	Metric	Threshold	Residual
x^2	3584.858	3334.392	3573.482	3690.919
df	1516	1550	1707	1666
p	<.001	<.001	<.001	<.001
CFI	0.94	0.95	0.95	0.94
TLI	0.93	0.94	0.95	0.94
RMSEA	0.05	0.05	0.05	0.05

Note: CFI = comparative fit index; TLI = Tucker-Lewis index;
RMSEA = root mean square error of approximation

Table 3.7

Results of Measurement Invariance Across Grades 6 to 8

| | Grade Invariance | | | |
| | Model | | | |
Fit Index	Configural	Metric	Threshold	Residual
x^2	4256.846	4094.511	4505.423	4484.438
df	2274	2349	2638	2556
p	<.001	<.001	<.001	<.001
CFI	0.94	0.94	0.94	0.94
TLI	0.93	0.94	0.95	0.94
RMSEA	0.05	0.05	0.05	0.05

Note: CFI = comparative fit index; TLI = Tucker-Lewis index;
RMSEA = root mean square error of approximation

Discussion

Student engagement continues to be a significant area of interest for both educational

practitioners and researchers. Although the relationships between student engagement and

academic, behavioral, and social-emotional outcomes are often emphasized in the literature,

there is a pressing need to consider student disaffection (i.e., negative engagement) as a construct

that is both distinct from engagement and warrants measurement. Some early and modern

theoretical models have always included components of both student engagement and

disaffection (Connell & Wellborn, 1991; Martin, 2007; Skinner et al., 2008), while others have focused on student engagement alone (Appleton et al., 2006; Finn, 1989). However, recent studies have suggested engagement and disaffection are psychometrically discrete (Skinner et al., 2009b; Wang et al., 2017) and have differential relationships to various educational outcomes (Fredricks et al., 2019; Reschly et al., 2014b). Despite the increasing evidence that engagement and disaffection should be viewed as two separate continua that both require measurement to accurately understand student functioning, additional research is needed to better understand their conceptualization and to develop more accurate measurement of these constructs. This would not only serve to improve our theoretical understanding of these concepts but might also facilitate school intervention efforts.

The purpose of the current study was to pilot disaffection items alongside the well-researched Student Engagement Instrument (SEI; Appleton et al., 2006) in a sample of middle school students from a rural district in the Southeastern United States. Exploratory factor analysis (EFA) was used to establish the factor structure of the disaffection items, followed by confirmatory factor analysis (CFA) to assess the model fit of the identified disaffection factors with the five factors of the SEI. This study also examined the relationship between the SEI and disaffection factors and their relationships with outcome variables of interest (i.e., rates of discipline referrals, rates of absences, and mathematics and reading achievement test percentile rank scores). Finally, measurement invariance across grade levels six through eight and gender was examined.

It was hypothesized that the EFA would identify a two-factor solution as the best fitting model for the data, as development of the items attempted to tap both cognitive and affective aspects of student disaffection (similar to how the SEI contains both cognitive and affective

components of student engagement). Results of the EFA suggested a two-factor model best fit our disaffection items. However, examination of the items within each factor revealed that the conceptualization of cognitive versus affective disaffection did not seem appropriate. Instead, one factor appeared to represent aspects of behavioral disaffection (e.g., daydreaming, not wanting to attend school, not wanting to participate). The other factor, on the other hand, seemed to capture internal aspects of disaffection (e.g., feeling nervous, viewing intelligence as innate or fixed), which could be considered a combination of affective and cognitive disaffection. Interestingly, this better aligns with Skinner and colleagues' (2008) model which contains behavioral and emotional disaffection factors and Martin's (2007) model which includes maladaptive behavior and impeding/maladaptive cognitive factors. Moreover, both models were utilized in developing the disaffection items used in this study.

This issue of how to best conceptualize the disaffection factors reflects the jingle-jangle of concepts in student engagement described by Reschly and Christenson (2012). That is, there is a lack of agreement across scholars in the specific definitions of engagement subtypes; at times the same term is used to refer to different things, while in other instances, different terms are used for the same construct. For example, varied theoretical orientations might place student effort in behavioral or cognitive engagement subtypes. Unsurprisingly, this jingle-jangle appears to be present within the literature on student disaffection. For example, Martin (2007) places anxiety within their impeding/maladaptive cognition subtype, while Skinner and colleagues (2008) include anxiety within their emotional disaffection subtype. This highlights how interrelated these concepts are and how difficult it is to efficiently and to clearly differentiate what concepts belong to which subtypes of student engagement or disaffection. In addition, it is

important that studies that examine engagement and disaffection clearly define these terms to address the conceptual haziness within the literature.

Results of the CFA similarly aligned with our hypotheses. The five-factor structure of the SEI plus the two disaffection factors were used to analyze a seven-factor model. This model exhibited good fit and most factors also demonstrated adequate internal consistency. This reflects the factor structure of the SEI identified in numerous other studies (Appleton et al., 2006; Betts et al, 2010; Reschly et al., 2014b) within our sample. However, one factor, Affective/Cognitive Disaffection, exhibited questionable reliability. This could be the result of the factor containing only three items. Future research with SEI disaffection items needs to consider if revisions to these items or if the addition of new items can improve the internal consistency of this scale.

Correlational analyses generally supported the expected relationships between factors; lower disaffection was positively correlated with higher engagement for all five SEI factors and the two disaffection factors. We originally hypothesized that non-significant correlations between engagement and disaffection factors and/or differential correlations between engagement and disaffection factors with outcome variables may indicate that engagement and disaffection are separate continua. While we did not identify non-significant correlations between factors in this study, results did suggest differential correlations between the engagement and disaffection factors with test scores, absences, and discipline referrals. Specifically, the only factor to significantly correlate with mathematics and reading achievement test percentile ranks was Affective/Cognitive Disaffection (i.e., lower disaffection was associated with higher test scores). Both Affective/Cognitive Disaffection and Behavioral Disaffection, as well as the SEI factor Teacher-Student Relationships, significantly correlated with attendance rates in the expected directions, with lower disaffection and higher engagement negatively

correlating with absences. Finally, Behavioral Disaffection and three of the SEI factors (Teacher-Student Relationships, Peer Support for Learning, and Future Goals and Aspirations) significantly correlated with discipline referrals. Again, correlations were in the expected directions, with lower levels of disaffection and higher levels of engagement negatively correlating with discipline referrals.

Differential correlations with academic and behavioral outcomes between student disaffection and engagement were also identified by Reschly and colleagues (2014b). Interestingly, in their study, correlations with disaffection factors on the Motivation Engagement Scale (Martin, 2007) followed a similar pattern to that in our study, as maladaptive cognition correlated with grades and maladaptive behavior correlated with discipline referrals. These outcomes might indicate that different components of disaffection distinctly contribute to specific academic and behavioral outcomes. Altogether, this study supports the finding that measuring disaffection has utility above information provided by assessing engagement alone.

An unexpected finding in our study was the lack of significant correlations with two of the SEI factors (Family Support for Learning and Control and Relevance of Schoolwork) and any of the outcome variables. Reschly and colleagues (2014b) found that these variables correlated with hours spent on homework each week and the number of times students were sent to the office for discipline, which was not included in our study. This discrepancy could be related to differences in the sample, as our study utilized middle school students who were predominantly Caucasian, rather than high school students who were predominantly African American. In addition, most students in our sample endorsed high levels of family support, which might have influenced our results. Previous research has also speculated that engagement subtypes might impact educational outcomes by exerting influence over other subtypes

(Lovelace et al., 2017; Reschly & Christenson, 2006, 2012). Moreover, other studies have extensively documented the role of family support on student engagement (Bempechat & Shernoff, 2012; Reschly & Christenson, 2019). Although this was not examined in our study, perhaps family support influences a student's future goals and aspirations, which in turn influence academic and behavioral outcomes.

It is important to note that other studies have also identified inconsistencies with the Control and Relevance of Schoolwork factor of the SEI. Appleton and colleagues (2006) found that this factor was negatively correlated with achievement test scores and was not strongly correlated with grade point averages or school suspensions. Similarly, exploratory analysis of the Control and Relevance of Schoolwork factor within a sample of elementary school students indicated that this scale behaved poorly (Carter et al., 2012), and the factor was subsequently dropped from the elementary versions of the SEI (Carter et al., 2012; Wright et al., 2021). Future research should continue to explore the utility of the Control and Relevance of Schoolwork factor in different populations and in predicting various educational outcomes.

Finally, results of the measurement invariance analysis indicated that the SEI and disaffection factors assessed the same construct for both females and males and across students grades six through eight, as initially hypothesized. Betts and colleagues (2010) found similar results within a sample of middle and high school students when assessing the measurement invariance of the SEI for gender and grade level. These findings support the use of the SEI and the newly established disaffection factors to assess levels of engagement over time (Betts et al., 2010).

Implications

Reschly and colleagues (2014b) identified that research is needed to explore the combination of student engagement and disaffection factors that "yield the most theoretically and psychometrically sound measurement of the construct" (p. 112). In this study, the addition of the disaffection items to the standard engagement factors on the SEI appeared to increase the utility of the measure. Specifically, student engagement and disaffection factors were differentially correlated to achievement test percentile ranks for mathematics and reading, discipline referrals, and absences. These differential relationships indicate that theories of student engagement should not just focus on students' lack of engagement, but also on active, maladaptive processes referred to as disaffection. Altogether, results from this study support the need to consider student engagement and disaffection as separate continua that warrant measurement. In developing our theoretical understanding of these constructs, we might be better able to predict academic and behavioral outcomes that are important to educators.

Furthermore, in improving the conceptualization of constructs covered within the SEI by adding disaffection factors, educators and researchers could agree on one unified measure to assess both student engagement and disaffection. Given the measurement invariance findings of the study, this measure might be useful in the research realm to explore varied profiles and longitudinal trajectories of student engagement and disaffection. Moreover, school staff may be able to use this measure over time to regularly screen students' engagement and disaffection to provide more timely interventions. Assessing both constructs would be particularly beneficial when considering students who might be simultaneously engaged and disaffected with school, as previous research suggests this might be an under-identified group in need of support (Salmela-Aro et al., 2016; Tuominen-Soini & Salmela-Aro, 2014); for example, this group of students

might be more likely to struggle with stress, exhaustion, and depressive symptoms while maintaining good grades (Tuominen-Soini & Salmela-Aro, 2014).

Relatedly, the assessment of student engagement and disaffection is valuable because these constructs are malleable and amenable to intervention (Finn, 1989; Furlong & Christenson, 2008; Reschly & Christenson, 2012), in contrast to demographic variables typically associated with risk for negative educational outcomes (e.g., socioeconomic status, racial-ethnic background; Rosenthal, 1998). In improving our ability to assess engagement and disaffection, educators might be better able to identify which students need intervention and what types of interventions might be more effective (Fredricks et al., 2019; Wang & Peck, 2013). For example, students with self-reported high levels of behavioral disaffection (e.g., daydreaming, wanting to skip school) could benefit from an attendance contract or learning self-monitoring strategies to better focus in class. Students with high levels of affective disaffection (e.g., feeling nervous about school) might benefit from learning strategies to reduce anxiety or mindfulness techniques. Finally, students with high levels of cognitive disaffection (e.g., viewing intelligence as fixed) might benefit from psychoeducation about the neuroplasticity of the brain.

Limitations and Future Directions

While initial results of the piloted disaffection items in this study are promising, additional research is needed to continue to refine the disaffection factors. For example, only three items were identified as loading on to the Affective/Cognitive Disaffection factor (which also demonstrated questionable internal consistency), when, typically, at least four items are recommended per factor (Brown, 2006). Relatedly, the SEI has multiple factors within the broader cognitive and affective engagement constructs. Further research could elucidate if this type of factor structure is similar or different for disaffection if additional items are explored.

Future studies should also continue to explore the relationships between student engagement and disaffection factors. For example, it would be interesting to examine if the two constructs follow similar or dissimilar longitudinal trajectories, for both normative and non-normative pathways (see Janosz et al., 2008; O'Donnell et al., 2021). Person-centered analysis techniques using this measure of student engagement and disaffection might also provide a deeper understanding of the characteristics of students who belong to varied profiles or trajectories and better assist in screening and intervention efforts.

In addition, this study utilized correlational analyses, but future research might benefit from exploring the predictive utility of these disaffection items with more powerful statistical analyses. Another limitation of the current study was that the SEI and disaffection items were assessed at the beginning of the school year, while the achievement test scores, discipline referrals, and absences were collected at the end of the semester. It would be beneficial to consider more distal outcomes and their relationship to the disaffection factors. In addition, this study utilized the percentile rank on mathematics and reading test scores as an outcome variable. Future studies may also consider using other measures of academic achievement such as homework completion or grade point average, or changes in test scores over the course of the year. Such measures might be of greater interest as they are more effort-based and might indicate student growth more so than standardized test scores. Finally, we utilized discipline referrals without consideration for the frequency and severity of the referral, which is often examined in other studies to provide a more nuanced examination of problem behavior (Appleton et al., 2021) and is worth exploring in future studies with the disaffection factors.

Overall, more research is needed exploring the effectiveness of assessing changes in student engagement after identifying specific interventions that may be useful for given

engagement and disaffection profiles. While measurement invariance has been explored for grade and gender in this study and by Betts and colleagues (2010), future research could benefit from assessing measurement invariance of the SEI and disaffection factors for other significant demographic groups such as low versus high socioeconomic status or special education versus general education placement. The disaffection items should also be explored with an overall more diverse sample and across different regions of the United States, cultures, and ages, like previous studies of the SEI.

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CHAPTER 4

SUMMARY AND CONCLUSIONS

The primary goal of this two-study dissertation was to address specific gaps in the student

engagement literature identified by Christenson and colleagues (2012); broadly, these studies

aimed to examine differences in student engagement across groups of students and increase

clarity in the conceptualization of engagement and disaffection. The first study identified groups

of student engagement and burnout using latent profile analysis within a sample of high school

students from an independent public-school district. The objective of this study was to identify

profiles consistent with prior research, explore the relationship of these profiles with student

characteristics (e.g., gender, grade, race-ethnicity, 504 and special education status, and

enrollment in advanced-level courses), and later student outcomes (e.g., grade point average

[GPA] and absences). The aim of the second study was to pilot disaffection items with the

Student Engagement Instrument (SEI; Appleton et al., 2006) within a sample of middle school

students from a rural school district. This study examined the factor structure of the piloted

disaffection items and the relationships between student disaffection factors and engagement

factors, reading and mathematics test scores, discipline referrals, and absences. This study also

examined measurement invariance of the SEI and identified disaffection factors across grade

level and gender.

Findings from the first study indicated that a five-cluster model of student engagement

and burnout best fit the data. Results suggested these clusters were associated with student

gender and grade level in distinct ways. Linear models with gender, grade level, and cluster

membership interacted to impact student GPA a year later. Findings suggested that future research would benefit from examining the relationships between these types of profiles, school-level factors, and social-emotional student outcomes. Results from the second study indicated that student engagement and disaffection factors differentially correlated with reading and mathematics test scores, discipline referrals, and absences. The engagement and disaffection factors also demonstrated measurement invariance across grade level and gender. Findings supported the theoretical and practical implications of assessing active, maladaptive processes such as disaffection alongside student engagement to gain a more holistic understanding of student functioning.

Overall, the findings from both studies attempted to address the need for greater conceptual clarity within the field, given the jingle-jangle of student engagement and disaffection constructs within the literature (Reschly & Christenson, 2012). These studies also suggested the importance of conducting studies of student engagement across different student populations regarding age, region, and urbanicity. Although many studies within the field tend to focus on the academic outcomes of students, continued research on the relationship between student engagement and disaffection on social-emotional outcomes is needed. Relatedly, investigating the benefits of assessing these constructs and implementing targeted interventions is of interest. Specifically, additional longitudinal research related to the consistency of student engagement and disaffection profiles over time to identify normative and nonnormative patterns and inform selected interventions is needed. Ideally, such research could increase our theoretical understanding of student engagement, disaffection, and/or burnout while also offering practical suggestions for school-based personnel to directly support student outcomes.

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APPENDIX

Pilot Disaffection Items

1. I don't like school.

2. I feel nervous when I'm at school.

3. I look for excuses not to come to school.

4. I don't understand why I get the grades I do.

5. I daydream during class.

6. I don't pay attention during class.

7. If I don't do well on a test or assignment, it is because I'm not very smart.

8. Sometimes I don't feel like participating in class.