

A SEMESTER OF STUDENT ENGAGEMENT IN UNDERGRADUATE STUDENTS:
EXAMINATIONS OF THE SEI-C AND MES-UC

by

SYDNEY PIPPIN LENFESTEY

(Under the Direction of Amy L. Reschly)

ABSTRACT

Post-secondary attainment bears personal, professional, and psychological implications for both the degree holder and their communities. To promote post-secondary achievement and graduation, research must better understand the factors impacting the decision to leave or dropout of college. Of the many factors associated with dropout, student engagement is a theoretical metaconstruct associated with a variety of positive outcomes across all levels of schooling, such as academic achievement, on-time graduation, and post-secondary enrollment and persistence. Strong psychometrically sound measures will allow better identification of at-risk undergraduate students and allow universities to directly address factors leading to dropout and increase retention rates. Few psychometrically sound measures exist for the evaluation of individual reports of student engagement in college. Two self-report measures were examined using undergraduate students at a large public university. Evidence regarding internal consistency, convergent and divergent validity, and reliability of the MES-UC and SEI-C were assessed in the current study.

INDEX WORDS: student engagement, post-secondary, measurement, psychometrics

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DEDICATION

I dedicate this project to my parents. Without your unwavering love and support, I could not have reached this milestone. You have always put my needs before your own, shown me how to love first and question never, told me it was okay to fall so long as I get back up, to push and push toward my goals no matter what, and bought almond milk just for me. For all the times you kissed my skinned knees, wiped away my tears, drove hours to rescue me, watched sports, dropped me off at school, went to the lost and found, attended every performance of my awful school plays, loved me even though I dented your car, argued with me about clothes, listened to me beg for a puppy knowing you already bought one, and taught me how to do laundry, I cannot say these two insufficient words enough: thank you.

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CHAPTER 1

INTRODUCTION

Pursuit of post-secondary education is important for not just degree-holding individuals, but also for their families, neighborhoods, and communities. Attainment of a college degree increases the likelihood of an individual's employment (College Board, 2016; Taylor et al., 2014), increased earning (College Board, 2016; Organisation for Economic Co-operation and Development [OCED], 2018), movement up the socio-economic ladder, ability to pay more in taxes (College Board, 2016), longevity, better overall health (Cutler & Lleras-Muney, 2009), and higher life satisfaction (Kahneman & Deaton, 2010). In 2017, 86% of young adults with a bachelor's degree or higher were employed when compared to 80% of young adults who only acquired some college, and 72% of those who had only completed high school (U.S. Department of Commerce, 2017). The median earnings of young adults with a bachelor's degree were 57% higher than those who had only completed high school (U.S. Department of Commerce, 2017).

Furthermore, earning a college degree is not just associated with obtaining positive outcomes, but also with avoiding or limiting exposure to negative ones. Those who earned college degrees are less likely to be poor or unemployed, live in households receiving public assistance (e.g., Medicaid, SNAP), be obese, smoke (College Board, 2016), commit crimes, and be incarcerated (Baum & Payea, 2004; Harlow, 2003; Lochner & Moretti, 2003). College graduates contribute significantly to economic stimulation and growth at the local, state, and federal levels (U.S. Department of

Education, 2010) because they are more likely to have higher paying jobs, pay more in taxes, and be actively engaged in their communities (e.g., voting, volunteering) (College Board, 2016; Ma, Pender, & Welch, 2016). This multilevel contribution increases the standard of living not just for the college graduate and their direct family units but also their larger neighborhoods and communities as well.

Despite the clear personal, societal, and economic benefits of post-secondary attendance and completion, the decision to attend a post-secondary experience is a complex one with many factors to consider including financial burden, admissions requirements, and potential relocation or commuting. Studies reveal this decision is actually a longitudinal process beginning as early as middle school, involving educational and professional aspirations and goal setting (Cabrera & La Nasa, 2000; Eccles, Vida, & Barber, 2004) According to Cabrera and La Nasa (2000), parental involvement, student ability, socioeconomic status (SES), and accessibility of college information are all instrumental in the identification with and decision to pursue higher education. Cabrera and La Nasa break down the decision process across developmental and academic stages, discussing important variables at each step and highlight the complexity of the deceptively simple decision regarding college or university enrollment, such as parental collegiate experiences, cost of attendance, and salience of potential institutions (Cabrera & La Nasa, 2000).

Despite the challenges facing students who consider pursuing a college degree, the 2015 graduating cohort become the first to have more than half hold postsecondary degrees (Lumina Foundation, 2016 as cited by Balfanz et al., 2016). Although this is a historic high, these statistics still reflect many barriers students encounter in terms of

enrollment in and ultimate completion of postsecondary education. According to the State of Our Nation's Youth Report by the Horatio Alger Association of Distinguished Americans, Inc., 90% of high school students intend to pursue a post-secondary degree (Wolniak, Davis, Williams, & Casano, 2016). Despite these aspirations, only 59% of first-time, full-time undergraduate students seeking a bachelor's degree at a 4-year institution graduated within 6-years (U.S. Department of Education, 2017). Furthermore, with each passing year, the United States' post-secondary rates have continued to fall further behind those of other countries around the world (OECD, 2018). These statistics bear national and global economic implications.

Connecting High School and College Dropout

Within the literature, the majority of policy and research has focused on high school completion. Recent statistics reflect substantial progress with respect to historically dire rates of dropout across the United States. In 2016, the U.S. recorded its highest rates of on-time graduation (DePaoli et al., 2018; U.S. Department of Education, 2018). Despite significant progress, many states, regions, and demographic groups (e.g., low SES, single-parent families, disability, racial/ethnic minority) continued to fall significantly below the 90% graduation goal (DePaoli et al., 2018; McFarland et al., 2018a). These gaps highlight a clear need for further efforts to reduce dropout and encourage high school completion. Christenson and colleagues (2001) first outlined the distinction between the terms "dropout" and "school completion." Although both completion and dropout are longitudinal processes (Finn, 1989), these terms denote two distinct outcomes. Dropout refers specifically to the process leading to a student leaving school. School completion, however, refers to more than a lack of dropping out. When

the literature discusses school completion, the goal is a long-term one and includes motivation to learn, self-efficacy, life skills, and resilience (Christenson, Sinclair, Lehr, & Godber, 2001).

Factors contributing to dropout prevention and school completion can first be delineated into fixed and malleable factors across school and home environments (Egyed, McIntosh, & Bull, 1998; Ekstrom, Goertz, Pollack, & Rock, 1986). Malleable factors include elements such as attendance, parental academic support, supervision, and educational expectations. Fixed factors include gender, race, family structure, and SES (Christenson et al., 2001). Attendance, behavior (Alexander et al., 1997), negative teacher comments on report cards, and achievement as early as elementary school is linked to later dropout (Barrington & Hendricks, 1989). Many of these are malleable experiences such as encouraging better attendance and extracurricular participation. Therefore, these factors present targets for research-based intervention and policy change at nation-wide levels. Furthermore, studies reveal steady declines in students' engagement across schooling beginning as early as kindergarten and continuing through high school with the most significant drops occurring around times of transitions, such as moving from middle school to high school (Betts et al., 2010; Eccles, Midgley & Adler, 1984; Fredricks, Blumenfield & Paris, 2004; Fredricks & Eccles, 2002). Research, therefore, provides professionals with both specific factors and times at which student are most sensitive to interventions.

Risk factors for high school dropout. Many demographic factors are associated with an increased risk of dropping out of high school, such as low SES, male gender, minority status, living in an urban area, having lower levels of social support, and

experiencing stressful life events (Rosenthal, 1998). McFarland and colleagues (2018a) reported Hispanic, Black, and American Indian/Alaskan Native students to be the three groups with the lowest on-time high school graduation rates at 79%, 76% and 72%, respectively. In 1990, the George H. W. Bush administration announced a national goal of 90% for high school graduation rates; this goal was further adopted by four successive presidents and the Grad Nation campaign (DePaoli et al., 2018). Currently, overall rates fall below this national goal. Specifically, only White students (88%) and Asian/Pacific Islander students (91%) come close to meeting this national standard with all others falling far below it (McFarland et al., 2018a). Although these factors are inherent and nonmalleable, there are other factors that might be responsive to intervention. Attendance, extracurricular participation, and work completion are all factors upon which we can intervene with observable results (Christenson, 2008; Reschly & Christenson, 2006, 2012).

Following the implementation of policy and legislation geared toward improving graduation rates, national data suggest these attempts to increase high school completion were successful. Attendance initiatives, Check & Connect, indicators of adequate yearly progress in No Child Left Behind, and in-school mentorship are all examples of the increasing focus on school participation and school completion. With the highest graduation rate recorded in the U.S. for the 2015-2016 school year at 84% (McFarland et al., 2018a), recent data reflect efforts to target malleable factors might be an effective use of time and resources. Despite the increase in focus on dropout prevention and recent rise in graduation rates, it is important to note the historical dearth of research regarding high school dropout prevention and intervention targeting completion (Doll & Hess, 2001;

Sinclair, Christenson, Evelo, & Hurley, 1998). However, reviews of recent programs suggest increasing knowledge within the field and evidence of promising programs (Reschly & Christenson, in press).

Post-secondary dropout. The decision to leave college is also associated with significant costs, both personally and for society. In 2018, the U.S. Department of Education reported the average student in the class of 2016 has more than \$37,000 in student loan debt with the total student loan debt totaling approximately \$1.52 trillion. With 10.7% of the 44.2 million people with student loan debt qualifying as delinquent or defaulting on those loans, college dropout has huge financial implications as it can reduce an individual's long- and short-term earning potential. With less access to higher paying careers and positions, leaving post-secondary education early makes paying off student loans increasingly difficult, thus making those with smaller loans more likely to default (Executive Office of the President, 2016). In the U.S., when a payer defaults on a student loan, American taxpayers bear the responsibility for the lost funds and the lost opportunity costs for publicly funded post-secondary institutions (Schneider & Yin, 2011). Thus, it becomes clear enrolling and persisting at the post-secondary level is an important goal for students as well as society.

In light of the substantial costs of leaving early, it is important to examine what factors influence a student's leaving. Although similar to the process of dropping out of middle or high school, research suggests the variables contributing to undergraduate dropout encompass a variety of additional and increasingly complex factors. Many of the factors and processes associated with high school dropout are also associated with post-secondary dropout (Fraysier, Reschly, & Appleton, 2019; Waldrop, Reschly, Fraysier, &

Appleton, 2019). As with dropout in earlier grades, post-secondary dropout is seen as a gradual disengagement from an individual's post-secondary institution (Levitz, Noel, & Richter, 1999; Tinto, 1975; Tinto, 1982). Lack of academic preparedness, social integration, and difficulty with transition during the first year are all components of the gradual process of disengagement (Levitz et al., 1999; Lotkowski, Robbins, & Noeth, 2004; Robbins et al., 2004; Tinto, 1975; Tinto, 1982). The impact of both malleable and fixed factors in post-secondary dropout (Tinto, 1975) is similar to that of secondary dropout. As with high school risk-factors, race/ethnicity and SES are two fixed variables affecting a student's likelihood of dropout. Students who are American Indian/Alaska Native (35%), Black (35%), Hispanic (49%) or from low-SES backgrounds are less likely than White, Asian, or middle to high SES students to obtain a bachelor's degree (U.S. Department of Education, 2014).

In addition to these fixed factors, the post-secondary literature has identified additional reasons for dropout, such as financial stress, family pressures, psychosocial fit, and changing majors (Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008). Tinto (1982) posited that while financial stress is often cited as the primary reason for leaving a post-secondary institution, this is more often based on reaching a conclusion rather than reason. He described the shift in thinking to one that no longer sees the benefits of investing in education as goal and/or institutional commitment decreases. Tinto (1982) expanded upon the concept of integration further by distinguishing dropout from institutional transfer as well as describing "push" and "pull" factors by suggesting there might be a combination of factors at play when a student decides to leave or transfer institutions. Examination of these complex variables and how they are similar or different

are important for understanding how post-secondary dropout and completion align with earlier grades as well as ways in which they differ. Among those similarities is the emergence of student engagement as a pivotal malleable factor in determining and predicting academic success, graduation, and other long-term outcomes.

Student Engagement

Among those malleable factors identified and targeted for promoting school completion across primary, secondary, and post-secondary education, student engagement has received significant attention and traction in educational and policy sectors alike. Student engagement is a theoretical meta-construct referring to the time spent actively participating in and identifying with school (e.g., Appleton et al., 2006; Blumenfield & Paris, 2004; Dynarski et al. 2008; Finn, 1989; Finn & Rock, 1997).

Although there are several types or dimensions of engagement posited across scholars, studies reveal engagement is related to achievement, on-time graduation from high school (Lovelace, Reschly, Appleton, & Lutz, 2014), and post-secondary enrollment and persistence (Christenson, Reschly, & Wylie, 2012; Finn, 2006; Fraysier et al., 2019).

Beyond purely academic outcomes, student engagement has been linked with improved attainment (National Research Council and the Institute of Medicine, 2004) and psychosocial factors (Finn & Zimmer, 2012; Griffiths, Lilles, Furlong & Sidhwa, 2012; Klem & Connell, 2004;

Finn's models. A seminal literature review on student engagement by Finn (1989) described two foundational models in early engagement literature: the Frustration-Self-Esteem model and the Participation-Identification model. Although both models are comprised of similar components, the Frustration-Self-Esteem model is centered around

an individual's learning history and subsequent self-view regarding personal agency beliefs, competence, and self-esteem. Following repeated experiences of inadequacy and failure in academic contexts, a student might begin to feel ineffective and frustrated. These feelings then bring the student to engage in problem behaviors, demonstrate less persistence, and, eventually, withdraw. These problem behaviors might be an attempt to recover a sense of self-esteem by finding other opportunities in which to experience success, such as delinquent peer approval. This model does not inform intervention or address how school personnel might address the cycle.

The Participation-Identification model, however, focuses more on the process with the intention of informing intervention and is considered the primary model for elementary and secondary student engagement. The Participation-Identification model prioritizes a student's feelings of attachment to school, some of the behavioral components of that attachment, and ways to change attachment. Students who feel attached to school have a sense of belongingness and feel as though they are part of a community. In addition, these children hold that school-related goals are valuable and lead to positive outcomes. Together, a sense of belongingness and academic commitment begin to integrate with that student's identity. Conversely, some students might begin to feel alienated and isolated from school, where they feel their hard work does not recruit reinforcement or positive experiences, but rather failure and embarrassment. These students do not then incorporate school with their identity or find the hard work and rule-following behaviors "worth it." The Participation-Identification model posited that encouraging participation in the classroom and extracurricular activities and increased interactions with teachers fosters a student's involvement in the school environment and

investment in the academic context. Both the Participation-Identification and the Frustration Self-Esteem models rely on a student's long-term history of experiences while in school. Subsequently, huge effort has been put toward instituting early identification programs, interventions, and reforms in the lower and high school grades (National Research Council & the Institute of Medicine, 2004) with the expectation that these will serve as protective factors for those students who might be at-risk for disengagement and dropout (Finn, 1989).

Models and definitions of engagement. Although two-, three-, and four- factor models of engagement exist throughout the literature (Reschly & Christenson, 2012), Fredricks and colleagues (2004) posited student engagement is a meta-construct made up of 3 dimensions: affective, cognitive, and behavioral. Affective engagement refers to internal experiences, such as a student's sense of belonging within their school, their relationships with peers and teachers, and their beliefs regarding the value of learning (Appleton et al., 2006). These affective components are associated with achievement and engagement and are thought to impact a student's willingness to participate (Fredricks et al., 2004; Hamre & Pianta, 2001; Hughes, 2011). Cognitive engagement refers to how much students are willing to invest effort in their learning, whether they set goals, and regulate their own learning (Appleton et al., 2006). Appleton and colleagues further divided Fredricks et al.'s third component, behavioral engagement, in to differentiated academic and behavioral domains. Appleton et al. (2006) conceptualized behavioral engagement as attendance and participation in school and extracurriculars, while academic engagement referred to behaviors such as time spent on academic tasks and credits earned toward graduation. It is believed that cognitive and affective engagement

serve as mediators for behavioral and academic engagement (Reschly & Christenson, 2012).

Student engagement throughout primary and secondary schooling. Although student engagement is a theoretical construct originally used in reference specifically to high school dropout and achievement (Finn, 1989), elementary, middle, high school, and post-secondary engagement research has illustrated a continuing relationship between student engagement and academic outcomes, such as persistence, dropout, and performance (Finn, 1998, 2006; Finn & Rock, 1997; Fredricks et al. 2004) throughout an educational career. As engagement research bears implications across both a number of domains (e.g., achievement, graduation, post-secondary attainment, salary, employment) and across schooling, models of student engagement offer a variety of areas on which to focus for meaningful and effective interventions regardless of education level.

Studies investigating the long-term trajectories of student engagement have implications beyond theoretical model expansion but also have direct implications for practice and policy. Gaining a better understanding of how a student's engagement might change over the course of several academic years allows us to differentiate potential interventions, evaluate long- and short- term intervention effectiveness, and better serve the students at risk for disengagement and dropout (Christenson et al., 2012; Reschly & Christenson, 2012; Wylie & Hodgen, 2012). One study found student engagement, specifically cognitive and affective engagement, at the secondary level was predictive of post-secondary enrollment and persistence (Fraysier, Reschly, & Appleton, 2019).

In a seminal paper by Finn (2006), 3,502 eighth grade NELS:88 students were identified as at risk for academic failure based on both their homes and schools falling in

the lower half of the SES distribution. These students tended to be minority students who attended urban and rural public schools and were from non-English-speaking homes without both biological parents. Using their grades, test scores, and high school graduation status, the same students were grouped in to “successful completers,” “marginal completers,” and “noncompleters.” Finn (2006) reported students who were identified as demographically at-risk in eighth grade exhibited behaviors and engagement in high school that predicted later post-secondary and employment outcomes. Those who exhibited more positive academic engagement behaviors were more likely to successfully enter, persist, and complete post-secondary educational programs and gain employment.

Another similar study was conducted by Lawson and Masyn (2015). The study utilized data from high school students across over 600 public schools collected using the Educational Longitudinal Survey of 2002 (ELS). Using latent class analysis, six profile types were identified with a variety of predictors and factors, such as indicators of students’ future beliefs, academic initiative and investment, school investment, and feelings of ambivalence and disidentification. The profiles identified were Academic Initiative, Academic Investment, Low Effort/Low Efficacy, Boredom, Ambivalence, and Disidentification. Those in the Academic Investment and Academic Initiative groups were more likely to enroll in 4-year postsecondary education. Students who were Disidentified were more likely to have dropped out or left early and had the lowest rates of enrollment in 4-year institutions post-graduation. This study also found facets of particular profiles with the potential to inform effective interventions, such as the importance of socially-directed strategies for Low Effort/Efficacy, Ambivalence, and Disidentification profiles (Lawson & Masyn, 2015).

O'Donnell, Lovelace, Reschly, and Appleton (2019) conducted a longitudinal examination of students from sixth to ninth grade and found seven distinct profiles of student engagement. As their names suggested, Moderate Stable and High Stable trajectories represented some students' pattern of maintaining high or moderate engagement levels over time. These students were more likely to graduate on-time from high school and to pursue postsecondary education. Moderate Increasing and Rebounding profiles suggest there exists the possibility some students' engagement will improve through educational attainment. These profiles were also associated with higher rates of postsecondary enrollment and persistence compared to less engaged and stable profiles. However, Moderate Decline, High Decline, and Sudden Decline profiles reflected a drop in engagement levels across schooling. O'Donnell et al. (2019) suggested these profiles might present the opportunity for schools to identify and intervene with these at-risk students to maximize protective factors, reduce the likelihood of dropout, and encourage postsecondary enrollment and persistence. As college attendance and persistence is often considered a positive outcome for engaged students beyond high-school graduation, the need to follow students through their post-secondary experiences becomes apparent.

Postsecondary Engagement. As discussed previously, high school dropout and engagement research provides foundational findings and models for investigating those at work in post-secondary dropout and engagement. The additional demographic and situational factors added to these models of post-secondary outcomes include differences such as differentiation between voluntary withdrawal, academic failure, and transfer to another institution. Career decision self-efficacy, career perceptions (Grier-Reid et al., 2012; Peterson, 1993a; 1993b), financial need (Tinto, 1982), individual expectations and

motivation (Tinto, 1975), and family support (Kuh et al., 2008; Tinto, 1975) for educational goals are additional factors which contribute to post-secondary attendance, success, and persistence. Robbins et al. (2004) further identified certain personal factors predictive of specific college outcomes. Academic self-confidence, self-efficacy, and achievement motivation were the most predictive of academic success, while psychosocial factors (e.g., academic goals, academic self-efficacy, academic-related skills) were most associated with persistence from year to year. They also make the important distinction between selection criteria and determinants of college student success, clearly highlighting a disconnect between admissions and later academic success criterion (Robbins et al., 2004). Together, these studies and studies like them highlight some important differences between P-12 and post-secondary engagement.

Measuring Student Engagement

As evidence regarding the importance of student engagement in dropout prevention, academic persistence, and other long-term outcomes grows, the need for measurement tools becomes increasingly important. In general, there are few comprehensive, theoretically driven and psychometrically sound measures of student engagement (Reschly & Christenson, 2012). Given the connections between engagement across levels of schooling and from P-12 to post-secondary attendance and persistence, there is a need for measures spanning levels of schooling, from elementary to college. Only two empirically-sound self-report measures currently meet this need.

Student Engagement Instrument. One self-report measure is the Student Engagement Instrument (SEI) created by Appleton, Christenson, Kim, and Reschly (2006). The original validation study of the SEI used ninth grade students and found

responses on the SEI correlated with academic performance (e.g., GPA) and behavior (Appleton et al., 2006). The SEI was developed from the model of engagement that grew out of work with the school completion program, Check & Connect. Christenson and colleagues conceptualized engagement as having four subtypes: cognitive, affective, behavioral, and academic. As academic and behavioral engagement can be determined using data collected at the school- and district-level for each student (e.g., class participation, extracurricular activities, credit accrual), the SEI was developed to accompany student records and therefore, only evaluates students' cognitive and affective engagement. Cognitive engagement was made up of Control and Relevance of School Work, Future Aspirations and Goals, and Extrinsic Motivation. Affective engagement was measured by Teacher-Student Relationships, Peer Support for Learning, and Family Support for Learning (Appleton et al., 2006).

Several studies have evaluated the SEI for use in grades 6-12, providing evidence of construct validity (Appleton, Christenson, Kim, & Reschly, 2006), convergent and divergent validity with another measure of engagement and motivation (Reschly, Betts, & Appleton, 2014), and associations with school functioning (Betts, Appleton, Reschly, Christenson, & Huebner, 2010) as well as long-term predictive associations with high school graduation and dropout as well as college attendance and persistence (Fraysier, Reschly & Appleton, 2019; O'Donnell, Lovelace, Reschly & Appleton, 2019). Studies have confirmed the SEI factor structure across middle- and high-school students (Betts, Appleton, Reschly, Christenson, & Huebner, 2010; Reschly, Betts, & Appleton, 2014). There is also evidence of measure invariance and score reliability across grades 6-12 (Betts et al., 2010). Downward extensions of the SEI now include grades 3-5 (SEI-E;

Carter, Reschly, Lovelace, Appleton, & Thompson, 2012), grades 1-2 (SEI-E2; Wright, Reschly, Hyson & Appleton, 2019). Upward extension of the measure includes college-age students (SEI-C; Grier-Reed et al., 2012; Waldrop et al., 2019).

MES-UC. Like the SEI, the Motivation and Engagement Scale (MES) was originally developed as a secondary self-report scale (Martin, 2003). Unlike the SEI, however, the MES assessment was created to accompany the Motivation and Engagement Wheel and intervention components to aid respondents based on their responses to the scale. The validity of the MES was first evaluated using 7th, 9th, 10th, and 11th grade Australian students. The MES factor structure was developed using multiple theories believed to be important for goal attainment, such as self-efficacy, valuing, achievement goal orientation, self-determination, and self-regulation (Martin, 2007). Based on seminal theoretical models, the MES is made up of 11 first-order factors which contribute to four higher-order factors. Adaptive Cognition is created using Self-Efficacy, Valuing, and Mastery Orientation. Planning, Task management, and Persistence make up Adaptive Behaviour. Impending/Maladaptive Cognition contains Anxiety, Failure Avoidance, and Uncertain Control; Maladaptive Behaviour includes Self-Handicapping and Disengagement. The Impending/Maladaptive Cognition and Maladaptive Behavior factors are particularly important as none of the SEI versions include a negative or maladaptive factor. These additional factors allow administrators to investigate not just the positive cognitions and behaviors of their students but also their disengagement and disaffection (Liem & Martin, 2012).

Evidence supports the psychometric properties of the MES, such as internal consistency, external construct validity, measurement invariance of the MES (Green,

Martin, & Marsh, 2007; Marsh & Hau, 2007, 2010; Martin Malmberg, & Liem, 2010), and relationships with psycho-behavioral and school outcomes, such as grade retention, achievement, and aspirations (Martin, 2007, 2008a, 2008b, 2008c, 2009a, 2009b; Martin & Hau, 2010). Studies have also supported the factor structure across primary, secondary, and post-secondary forms of the MES (Martin, 2009a).

SEI-C and MES-UC. A study by Waldrop, Reschly, Fraysier, and Appleton (2019) sought to further investigate the psychometric properties of the SEI-C. They evaluated several aspects of the SEI-C, including the factor structure and measurement invariance of the SEI-C across paper-and-pencil and online SEI-C responses. They also examined the relationship between the SEI-C and the MES-UC. Though the SEI-C was compared to other measures to explore its concurrent validity (e.g., Grier-Reid et al., 2012), as stated before, the MES-UC was designed to evaluate adaptive and positive factors as well as maladaptive and negative ones. As the SEI-C was created to evaluate only the positive aspects of engagement, Waldrop et al. (2019) was able to consider the correlations using both positive and negative engagement factors.

As expected, all five SEI-C factors positively and significantly correlated with the two adaptive MES-UC factors. All but one SEI-C factor correlated negatively and significantly with the two maladaptive MES-UC factors. Only the SEI-C Control and Relevance of Schoolwork factor and the MES-UC Maladaptive Engagement factor did not correlate as expected. Waldrop and colleagues (2019) reported the SEI-C Future Goals and Aspirations factor and the MES-UC Adaptive Motivation factor correlated the most strongly. Thus, Waldrop et al. present further evidence of the convergent and divergent validity for the SEI-C. As there are few studies of the SEI-C psychometric

properties, it would be appropriate to further investigate its reliability and validity with new samples.

Purpose of Study

The purpose of this study was to further investigate the psychometric properties of the SEI-C and MES-UC with undergraduates. Specifically, this study is an investigation of the test-retest reliability of the SEI-C and MES-UC as well as convergent and divergent validity with this sample. It is believed ratings across several facets of the SEI-C such as behaviors, cognitions, attitudes, and perceived support will remain fairly stable over the course of one academic semester and correlate strongly with each other and with similar domains on a similar measure, the Motivation and Engagement Scale – University/College. It is hypothesized that evidence regarding internal consistency, convergent and divergent validity, and reliability would be found in the current study. Strong psychometrically sound measures might allow better identification of at-risk undergraduate students and allow universities the opportunity to directly address factors leading to dropout. As stated before, postsecondary attainment has individual implications as well as societal consequences which makes improving graduation rates of particular importance. Furthermore, in light of the understanding dropout is a process as opposed to an isolated event, student responses might lead to better early warning systems and supports throughout an at-risk student's academic career as well the potential to encourage post-secondary completion.

CHAPTER 2

METHOD

Participants

Data were collected at the beginning of the 2018 Fall semester using undergraduate students currently attending the University of Georgia (UGA), a public university in the Southeastern United States. Participants were enrolled in at least one of two courses within the UGA College of Education. These courses required a minimum number of hours of participation in research as participants or through the completion of article reviews. Thus, participants were asked to complete the survey to receive one research credit hour, which they could use to meet class requirements. One hundred seven students elected to participate in the initial survey; however, only 54 students completed surveys at both the beginning (Time 1) and end (Time 2) of the academic semester. The demographic data of those who elected to complete only one survey did not differ significantly from those who completed both. This study was conducted with the approval of the university institutional review board.

Of the 54 students who completed study requirements, the sample was largely female, and the age of respondents fell between 18 and 25 years old with a mean of 19.9 years old and a standard deviation of 1.3 years. Table 1 compares demographic data collected from those who only completed a survey at Time 1 as compared to those who completed surveys at both Time 1 and 2.

Table 1. *Descriptive Data for Those Who Completed a Survey at Time 1 (Time 1 participants) and Those Who Completed Surveys at Time 1 and Time 2 (Time 1 and 2 participants)*

	Time 1 participants		Time 1 and 2 participants	
	Number	Percentage	Number	Percentage
Sample Size	93		54	
Gender				
Female	79	84.9	50	92.9
Gender Neutral	1	1.1	1	1.9
Male	14	15.1	3	5.6
Race				
Asian	11	11.8	5	9.3
Black/African American	6	6.5	3	5.6
Latinx	2	2.2	2	3.7
White/Caucasian	74	79.6	44	81.5
Academic Year				
First/Freshman	5	5.4	3	5.6
Second/Sophomore	41	44.1	21	39
Third/Junior	23	24.7	24.1	13
Fourth/Senior	20	21.5	27.8	15
Fifth/Senior	4	4.3	3.7	2

*Note: Time 1 and 2 participants are those who completed surveys at both Time 1 and Time 2, therefore completing the study requirements

Measures

Student Engagement Instrument – College Version. The Student Engagement Instrument – College Version (SEI-C) is the upward extension of the Student Engagement Instrument (SEI) originally developed for use in grades 6-12 (Appleton, Christenson, Kim, & Reschly, 2006). The SEI is a 35-item self-report measure that uses a 4-point or 5-point Likert-scale to indicate degree of agreement with each item (*1 = Strongly Disagree, 4/5= Strongly Agree; if 5-point scale, 3= Neither Agree Nor Disagree*). The SEI is believed to capture affective engagement (Teacher-Student Relationships, Peer Support for Learning, and Family Support for Learning) and cognitive engagement (Control and Relevance of School Work, Future Goals and Aspirations, and Intrinsic Motivation). All 35-items are administered in practice, but the two items making up the Intrinsic Motivation factor are typically excluded for research purposes (e.g., Betts, Appleton Reschly, Christenson, & Huebner, 2010; Lovelace, Reschly, Appleton, & Lutz, 2014). Data from the SEI are intended to complement behavioral and academic data, such as those readily available in school records (e.g., attendance, participation).

Several studies support the 5- and 6-factor structure of the SEI across grade and gender for middle- and high-school students (Betts et al., 2010) and provide evidence of criterion validity (Appleton et al., 2006; Betts et al., 2010; Lovelace et al. 2014; Reschly, Betts, & Appleton, 2014). Specifically, positive relationships were found between the

SEI and academic indicators, such as GPA and reading and math achievement (Appleton et al., 2006). Conversely, negative relationships were found between most SEI factors and school suspensions. There is also evidence of concurrent (e.g., with grades, achievement, behavior; Appleton et al., 2006) and predictive validity in terms of dropout and on-time graduation (Lovelace, Reschly, Appleton, & Lutz, 2014; Lovelace, Reschly, & Appleton, 2017) as well as college attendance and persistence (Fraysier, Reschly & Appleton, 2019). The SEI has been extended downward grades 1 and 2 (Wright, Reschly, Hyson, & Appleton, 2019) and grades 3-5 (Carter, Reschly, Lovelace, Appleton, & Thompson, 2012) and upward to college students (SEI-C; Grier-Reid et al., 2012).

The SEI-C is a self-report scale that uses a 4-point Likert scale to indicate agreement (i.e., “1” indicates “strongly disagree,” and “4” indicates “strongly agree”) with each of its 35 items. SEI-C items are similar to those on the SEI with the exception of wording certain items (i.e., using “professor” for “teacher”) to make items more appropriate for higher education students. More recent iterations of the SEI-C have used a 5-point Likert scale to increase variability of responses. Higher scores on the SEI-C denoted higher levels of engagement. Using confirmatory factor analyses, Waldrop, Reschly, Fraysier, and Appleton (2019) found evidence to support a modified five-factor model with a large sample of undergraduate students. To improve model fit, Waldrop et al. (2019) removed items 6, 7, 14, 26, 27, and 35. The five factors supported by Waldrop et al. (2019) are Teacher-Student Relationships (TSR), Control and Relevance of School Work (CRSW), Peer Support for Learning (PSL), Future Aspirations and Goals (FGA), and Family Support for Learning (FSL) (Waldrop et al., 2019). The importance of these

five factors and the facets of engagement they measure is supported by their relationships to a variety of other indicators, measures, and outcomes.

Evidence of the SEI-C's convergent and construct validity was assessed using correlations with similar constructs measured via The Career Decision Self-Efficacy Scale-Short Form (CDSE-SF), the Career Thoughts Inventory (CTI) (Grier-Reed et al., 2012), and the Motivation and Engagement Scale – University/College (MES-UC) (Waldrop et al., 2019). Waldrop and colleagues (2019) found evidence of equivalence across paper-and-pencil and online forms of the measure. The SEI-C was found to correlate in the expected direction with the CDSE-SF, CTI (Grier-Reed et al., 2012), and MES-UC (Waldrop et al., 2019). Waldrop et al. (2019) found the five-factor structure of the SEI-C correlated strongly with four factors of the MES-UC and all demonstrated good internal consistency and correlations in the expected directions. Specifically, of the MES-UC lower order factors, the SEI-C's CRSW factor and MES-UC Maladaptive Engagement factor were the only factors not found to be significantly correlated ($r=.01$). The SEI-C factors were also found to correlate positively with two adaptive MES-UC factors (Waldrop et al., 2019) and the CTI (Grier-Reed et al., 2012) while SEI-C factors negatively correlated with the two maladaptive MES-UC factors (Waldrop et al., 2019) and the CDSE-SF (Grier-Reed et al., 2012). The SEI subscales were also found to significantly related to college GPA (Grier-Reed et al., 2012; Waldrop et al., 2019).

Motivation and Engagement Scale – University/College. The MES-UC is the 44-item post-secondary form developed by Martin as an upward extension of his elementary and secondary engagement and motivation scales (2009a). Martin (2003) originally examined the validity of the MES using 2561 Australian students in Year 7,

Year 9, Year 10, and Year 11, which correspond with grades 7, 9, 10 and 11 in the U.S., respectively. Several studies have found support for reliability, convergent and external validity of the MES, as well as invariance across gender, age, and ethnicity (Bodkin-Andrews, Craven, & Martin, 2006; Martin, 2003; Martin & Hau, 2010). Further evidence has supported its use across settings and populations in Australia (Liem & Martin, 2012; Martin, 2008; Martin, 2009). The Motivation and Engagement Scale – Junior School for students age 9-13 and the Motivation and Engagement Scale – High School for students age 12-19 are two of the three forms of the MES as it exists today. The MES-UC was developed to supplement this series of measures to allow for use with individuals ages 9 through adulthood. A license to use the MES may be purchased from the Lifelong Achievement Group (www.lifelongachievement.com), which restricts the publishing of item-level data, such as specific items.

Martin (2009a) examined the MES-UC with 420 Australian students. This measure uses a 7-point Likert scale of 1 ‘Strongly Disagree’ to 7 ‘Strongly Agree’ to assess behaviors and cognitions as well as adaptive and maladaptive forms of each to develop a profile for each respondent. Its 11 first-order factors make up four higher order domains: three Adaptive Motivation dimensions (Learning Focus, Valuing, and Self-Belief), three Maladaptive Motivation dimensions (Uncertain Control, Failure Avoidance, Anxiety), three Adaptive Engagement dimensions (Planning, Task Management, Persistence), and two Maladaptive Engagement dimensions (Disengagement, Self-Sabotage). Evidence supports the factor structure and good internal consistency of the MES-UC across gender and age (Martin, 2009a; Martin, 2009b).

Procedures

Students were recruited through the University of Georgia's Department of Educational Psychology's online research portal, SONA, where students self-selected the studies in which they wished to participate. Credit for completion could then be used to fulfill course requirements for research. Participants were required to respond to the online survey within the first two months of the academic semester as set by the university to evaluate their initial levels of engagement following summer vacation. Demographic information and data regarding student behaviors (i.e., hours spent each week completing schoolwork, hours engaged in leisure activities each week) and beliefs (e.g., perceptions of personal values compared to institutional values) were collected in addition to responses to SEI-C and MES-UC items. Finally, each respondent was redirected to a second survey where they were asked to provide a unique study ID and email address. These responses were collected separately from the engagement item responses to prevent linking individual users with their responses and maintain anonymity. The email addresses provided were used to send the same respondents a unique individualized link to complete the second survey within the last two months of the same semester. Once the first two months of the semester passed, the study was closed to additional participants to ensure that the respondents completing the second survey were the same respondents who had completed the first. Accordingly, all data were collected during the Fall 2018 semester as no participants elected to participate during the initial enrollment period during the Spring 2019 semester. The second survey was identical to the first with the exception of creating a study ID and providing an email address at the end. As 14 participants did not complete the initial survey, their responses were eliminated from analyses and were not sent a link to the follow-up survey. Further,

participants who completed the second survey but not the first were also eliminated. Descriptive statistics and subsequent analyses were conducted using SPSS Statistics version 25.

Data Analyses and Hypotheses

Due to skewed distribution of responses, Spearman's rho correlation coefficients were computed for the five subscales of the SEI-C, the 11 lower order subscales of the MES-UC, and the four global composites of the MES-UC at Time 1 (the start of the semester) and Time 2 (the end of the semester) using SPSS version 25. All respondents created personalized identification numbers to allow for anonymous response matching across Time 1 and 2. All responses not affiliated with an ID used at both times were removed from the dataset before analyses, leaving only 54 respondents across both Time 1 and 2 ($N = 54$). According to Tabachnick and Fidell (2013), $N = 150$ is the smallest acceptable sample size for factor analysis; thus, it was determined that this sample is inappropriate for factor analysis. Waldrop et al. (2019) removed items 6, 7, 14, 26, 27, and 35 to improve model fit. The same items were excluded for the current study and SEI-C factors were constructed using the same item and factor structure supported by Waldrop and colleagues (2019).

To examine convergent and divergent validity, Spearman's rho were calculated to examine the relationships between the SEI-C and the MES-UC. Specifically, correlations were calculated at the lower-order- and higher-order level on the MES-UC and the SEI-C. Additional correlations were calculated between self-reported student behaviors and beliefs (e.g., hours spent each week on academics, perceived alignment with peer values) and SEI-C and MES-UC factors at Times 1 and 2. Cronbach's alpha coefficients were

also calculated to estimate internal consistency reliability for both scales at Time 1 and Time 2.

Previous research findings regarding the MES-UC and the SEI-C, student engagement, and associated external indicators have informed the methods and hypotheses of the current study. Previous examinations of the MES-UC and SEI-C have demonstrated evidence of positive correlations between the adaptive factors of the MES-UC and all subscales of the SEI-C, nonsignificant or negative correlations between the maladaptive factors of the MES-UC and SEI-C, and similar levels engagement reported on the SEI-C and MES-UC (Waldrop et al., 2019). Furthermore, previous studies suggest that student engagement is correlated with hours spent engaged with academics (e.g., homework, studying, attendance) (Appleton et al., 2006; Finn, 1989; Kuh et al., 2008).

CHAPTER 3

RESULTS

Descriptive statistics for the five factors of the SEI-C and the four higher order factors of the MES-UC at Time 1 and Time 2 are displayed in Table 2. Descriptive statistics and Cronbach's alpha for the current study were generally consistent with those reported in previous research with the exception of standard deviations of the MES-UC, which were somewhat smaller than in previous studies (Martin et al., 2014; Martin, Martin & Evans, 2016) as an artifact of its smaller sample size and suggest participants answered more similarly to each other than in previous studies. Cronbach's alpha coefficients were computed for the five subscales of the SEI-C, the 11 lower-order scales of the MES-UC, and the four higher-order scales of the MES-UC. As Cronbach's alphas of .7 and above are considered good, .8 and above are better, and .90 are the best, the SEI-C subscales correlated strongly at both times.

Table 2.
Descriptive Statistics and Cronbach's Alphas for SEI-C and MES-UC Factors at Time 1 and 2

	Factor	<i>M</i>	<i>SD</i>	Cronbach's <i>α</i>	
Time 1	<i>SEI-C</i>	Control and Relevance of Schoolwork	21.6	2.9	.75
		Future Goals and Aspirations	18	1.9	.77
		Teacher-Student Relationships	23.9	3.9	.90
		Peer Support for Learning	9.7	1.5	.68
		Family Support for Learning	14.8	1.9	.91
	<i>MES-UC</i>	Maladaptive Engagement	2.40	1.09	.88
		Self-Sabotage	2.65	1.31	.88
		Disengagement	2.24	1.12	.79
		Maladaptive Motivation	3.87	.89	.83
		Uncertain Control	2.91	1.19	.85
		Failure Avoidance	3.29	1.32	.63

		Anxiety	5.42	1.07	.72
		Adaptive Engagement	5.64	.623	.82
		Planning	5.1	1.05	.76
		Task Management	5.88	.69	.78
		Persistence	5.96	.68	.78
		Adaptive Motivation	6.23	.47	.85
		Valuing	6.04	.56	.66
		Self-Belief	6.21	.62	.72
		Learning Focus	6.44	.54	.84
Time 2	<i>SEI-C</i>	Control and Relevance of Schoolwork	2.99	.32	.66
		Future Goals and Aspirations	3.55	.42	.81
		Teacher-Student Relationships	3.00	.39	.89
		Peer Support for Learning	3.28	.50	.83
		Family Support for Learning	3.55	.42	.91
	<i>MES-UC</i>	Maladaptive Engagement	2.68	1.14	.75
		Self-Sabotage	2.71	1.34	.89
		Disengagement	2.65	1.21	.84
		Maladaptive Motivation	3.75	.87	.49
		Uncertain Control	2.90	1.18	.88
		Failure Avoidance	3.24	1.37	.86
		Anxiety	5.10	1.15	.79
		Adaptive Engagement	5.48	.70	.69
		Planning	5.05	1.10	.83
		Task Management	5.73	.73	.76
		Persistence	5.66	.80	.84
		Adaptive Motivation	6.05	.65	.77
		Valuing	5.96	.68	.76
		Self-Belief	5.90	.87	.78
		Learning Focus	6.26	.80	.91

Evidence of Convergent and Divergent Validity

Table 3 provides information on the correlations between the five modified SEI-C subscales and the four MES-UC global composite scales. All correlations were in the expected direction between the SEI-C and MES-UC factors based on those found in previous research (Waldrop et al., 2019). As expected, the SEI-C was negatively correlated with both negative composites on the MES-UC. The SEI-C factors correlated least with the MES-UC Maladaptive Motivation composite as compared to the other three global composites (Adaptive Motivation, Adaptive Engagement, Maladaptive

Engagement). At Time 1 and 2, the Maladaptive Engagement composite of the MES-UC was significantly correlated with between three and four SEI-C subscales at Time 1 and 2. The SEI-C correlated most with the Adaptive Motivation global composite on the MES-UC at both times with most composites yielding a Spearman's rho of .400 or above. The largest correlation found was between the Future Goals and Aspirations SEI-C subscale and the Adaptive Motivation global composite at both Time 1 and 2.

Table 3.

Spearman's Rho Correlations Between the Modified SEI-C (Rows) and MES-UC (Columns) Factors at Time 1 and Time 2)

		Adaptive Motivation	Adaptive Engagement	Maladaptive Motivation	Maladaptive Engagement
Time 1	Control and Relevance of Schoolwork	.490**	.280*	.155	-.123
	Future Goals and Aspirations	.678**	.427**	-.079	-.387**
	Teacher-Student Relationships	.387**	.144	-.111	-.263
	Peer Support for Learning	.230	.112	-.268	-.392**
	Family Support for Learning	.467**	.353*	-.353	-.366**
Time 2	Control and Relevance of Schoolwork	.490**	.291**	-.068	-.233*
	Future Goals and Aspirations	.587**	.393**	-.325**	-.420**
	Teacher-Student Relationships	.478**	.315**	-.303**	-.442**
	Peer Support for Learning	.492**	.268*	-.343**	-.359**
	Family Support for Learning	.237*	.189	-.093	-.082

** correlation is significant at the .01 level, *correlation is significant at the .05 level
Time 1 and 2 N=54

Evidence of External Validity

Spearman's rho coefficients were calculated between these self-reported behaviors and Time 2 responses on the SEI-C and MES-UC. Time 2 behavioral and value data were used to ensure students experiences were equitable as all students were required to be enrolled for the semester to participate, therefore limiting confounding factors such as how a student spent their Summer semester. As seen in Table 4, only three correlations were statistically significant; all three correlations were in the expected

direction. Hours spent each week on academic tasks (Academic Hours) was negatively correlated ($p < .01$) with the MES-UC Maladaptive Engagement factor. Hours engaged in leisure activities each week (Leisure Hours) was also negatively correlated ($p < .05$) with the MES-UC Adaptive Engagement factors. There were no relationships between the SEI-C and the hours students spent on leisure or academic activities; however, students' feelings of alignment with their peers' values (Peer Values) was found to be significant ($p < .05$) and positively correlated with Peer Support for Learning on the SEI-C.

Table 4

Spearman's Rho Correlations Between Student Behaviors/Beliefs and the Modified SEI-C and MES-UC Factors at Time 2

		Leisure Hours	Academic Hours	Institutional Values	Peer Values
<i>SEI-C</i>	Control and Relevance of Schoolwork	-.170	.108	.139	-.061
	Future Goals and Aspirations	.003	.016	.042	.111
	Teacher-Student Relationships	-.081	.004	.136	.089
	Peer Support for Learning	.134	-.042	.056	.247*
	Family Support for Learning	.045	.099	-.034	.019
<i>MES-UC</i>	Adaptive Motivation	-.178	.073	.029	.025
	Adaptive Engagement	-.288*	.209	.140	.025
	Maladaptive Motivation	-.138	-.040	.002	-.102
	Maladaptive Engagement	.191	-.325**	-.139	.144

** correlation is significant at the .01 level, *correlation is significant at the .05 level

CHAPTER 4

DISCUSSION

As the need for a more educated workforce has implications at personal, societal, and global levels (Organisation for Economic Co-operation and Development [OCED], 2018; U.S. Department of Education, 2010), the need for strong conceptualizations and theoretical models regarding school persistence, dropout, and other factors at play become clear. By better understanding the factors at play across a student's educational career, evidence-based models, targeted interventions, and well-supported measures can be leveraged to improve student short- and long- term outcomes. Evidence suggests a student's engagement throughout elementary-, middle-, and high school is a central component of their long-term trajectory. Student engagement and its many subtypes are associated with academic achievement, on-time graduation from high school, post-secondary enrollment and persistence (Christenson et al., 2012; Finn & Rock, 1997; Lovelace et al., 2017, Waldrop et al., 2019), improved resilience (Finn & Zimmer, 2012), effort, commitment, persistence (Klem & Connell, 2004; National Research Council and the Institute of Medicine, 2004), and lower-risk health and sexual behaviors (Griffiths et al., 2012).

As the ultimate goal of primary and secondary education is to create educated and successful citizens, enrollment and persistence at the post-secondary level becomes the next educational and professional step for many students. Factors and models applied at the lower levels of education are therefore expanded and adapted to encourage successful

post-secondary education. Thus, student engagement remains a key component in educational attainment and achievement even in higher education (Finn, 1998, 2006; Finn & Rock, 1997; Fredricks et al. 2004). It is notable that few student engagement instruments exist for individual use at the post-secondary level or that can measure student engagement throughout schooling. The National Survey of Student Engagement (NSSE) is one of the few measures of student engagement at the post-secondary level; however, its goal is to provide institutions with school-wide data on its students' engagement rather than individual student data (NSSE, n.d.). It is therefore important to ensure the few measures designed for use at the individual level are psychometrically sound and feasible. Furthermore, it is essential to determine the ways in which these measures can be used to better meet the needs of post-secondary students across the nation.

This study used a small, diverse sample to further investigate the psychometric properties of the Student Engagement Instrument – College version (SEI-C) with undergraduate students. This study was aimed at expanding our understanding of engagement at the post-secondary level by investigating two post-secondary student engagement measures. Specifically, this study sought to examine evidence of reliability of the SEI-C and MES-UC in addition to convergent and divergent validity with this sample.

The SEI-C and MES-UC demonstrated adequate internal validity at both administration times in terms of alpha coefficients at Time 1 and 2. These results are consistent with those found by similar examinations of the SEI-C (Waldrop et al., 2019)

and MES-UC (Martin, 2009a) and support the use of the SEI-C to measure cognitive and affective engagement at the post-secondary level.

Correlations between SEI-C factors and MES-UC's positive global composites were generally small to moderate and in the expected direction, suggesting convergent validity with one exception. The SEI-C Control and Relevance of Schoolwork and the MES-UC Maladaptive Motivation composite. The following results are generally consistent with those reported by Waldrop and colleagues (2019), though this study's small sample size might have contributed to fewer significant results than previously reported by Waldrop et al (2019).

It was hypothesized the adaptive scales on the MES-UC would correlate more strongly with all factors on the SEI-C, as reported by Waldrop et al. (2019). The SEI-C's Control and Relevance of Schoolwork, Future Goals and Aspirations, and Family Support for Learning factors correlated moderately and significantly with Adaptive Motivation on the MES-UC at Time 1. Time 2 revealed moderate significant correlations between Adaptive Motivation on the MES-UC and the Control and Relevance of Schoolwork, Future Goals and Aspirations, Family Support for Learning, and Peer Support for Learning factors on the SEI-C. Adaptive Engagement on the MES-UC was found to correlate weakly but significantly with Control and Relevance of Schoolwork and Peer Support for Learning at Time 1 and 2, Future Goals and Aspirations and Teacher-Student Relationships at Time 2. Future Goals and Aspirations at Time 1 correlated moderately and significantly with the Adaptive Engagement composite and was the strongest correlation found with that composite of the MES-UC. Waldrop et al.

(2019) found the strongest correlation to this composite to be the moderate significant relationship between Control and Relevance of Schoolwork.

As supported by findings reported by Waldrop and colleagues (2019), the SEI-C factors were hypothesized to correlate negatively or more weakly with the Maladaptive composites on the MES-UC as compared to the Adaptive composites. Future Goals and Aspirations, Teacher-Student Relationships, and Peer Support for Learning demonstrated weak but significant correlations with the Maladaptive Motivation composite of the MES-UC at Time 2. Significant correlations with Maladaptive Motivation at Time 2 were stronger than those reported by Waldrop and colleagues (2019), however, the weak coefficients found at Time 1 more closely resemble the weak but significant results reports by Waldrop et al. (2019). Lastly, moderate significant correlations were found between Maladaptive Engagement and Future Goals and Aspirations and Teacher-Student Relationships at Time 2. Weak but significant correlations were found between Maladaptive Engagement and Future Goals and Aspirations, Peer Support for Learning and, and Family Support for Learning at Time 1, and Control and relevance of Schoolwork and Peer Support for Learning at Time 2. These results are generally consistent with those reported for the Maladaptive Engagement composite by Waldrop et al. (2019), though the current study found fewer significant results.

Few significant relationships were found between students' reported hours spent engaged in academic or leisurely pursuits, and perceptions of value alignment with their institution and peers. Weak significant correlations were found between the MES-UC Adaptive Engagement and hours spent on leisure activities, the MES-UC Maladaptive Engagement and hours spent on academic activities, and the SEI-C Peer Support for

Learning and perceptions of alignment with peer values. These results are not consistent with previous research, which has discussed the positive relationship between engagement and hours spent engaged academically (Kuh, 2004) and perceptions of alignment and integration with peer and institutional values (Tinto, 1982).

The MES-UC is intended to measure both positive and negative aspects of engagement and motivation whereas the SEI-C is intended to evaluate solely the positive facets of engagement. It is therefore expected the SEI-C's factors would correlate negatively with the negative composites measured by the MES-UC. This study found evidence the negative composites on the MES-UC indeed correlated negatively with factors on the SEI-C with the exception of Control and Relevance of Schoolwork of the SEI-C at Time 1, which had a weak positive correlation with Negative Motivation of the MES-UC. Personal goals for the future and perceptions of familial support are both moderately correlated with fewer maladaptive academic engagement behaviors. Similarly, perceptions of peer support for academic goals and learning correlated with fewer negative and maladaptive cognitions and behaviors with regards to academics.

Limitations and Future Directions

Although some evidence of convergent and divergent validity for the MES-US and SEI-C was found, there are several outcomes for this study which merit consideration for future research. One limitation to this study is the sample, which was small and homogenous. Data were collected from students enrolled in only two courses offered at one university in the Southeastern United States. It is likely many of these students had similar career goals and orientations as well as meeting similar admission criteria for the university. Future researchers should prioritize a large, diverse sample to ensure findings

are generalizable to the larger post-secondary population. Diversity of race/ethnicity, academic trajectory, professional aspirations, geographic location, and other demographic characteristics (e.g., non-native English speakers, non-traditional students, students with disabilities) will make findings generalize more to the larger population of post-secondary students across the world. Furthermore, student engagement correlates with other measures of school attitudes and behaviors as well as objective indicators of student performance (i.e., GPA progress, retention). Further, there were no significant relationships between student ratings of engagement and their school attitudes or behaviors. Additionally, a lack of retention resulted in a small sample size. While over 100 students initially elected to participate in the first round of surveys, only 54 participants actually completed surveys at both Times 1 and 2. As this was a vital component of the study, the small sample size severely altered the analyses possible with the data. Finally, skewness of data required the use of nonparametric analyses. Skewness is typical for self-report measures such as those used in this study. Later iterations of the SEI and SEI-E have attempted to combat this by expanding the 4-point Likert scale to a 5-point Likert scale; expanding the SEI-C Likert scale is likely to help correct for this pattern.

Another limitation of this study is the timing of the data collection. It is possible collecting Time 1 data immediately following the university's summer vacation may have impacted students' reports. The courses offered during summer academic semesters do not adhere to traditional semester schedules due to restricted time. Additionally, students returning to school from a months-long academic break might have different

responses than those not returning from such a break. Therefore, Time 1 responses might not generalize to all students as individual students' course taking patterns differ.

Many recent studies examining student engagement have begun utilizing different or other methods to examine students' engagement, outcomes, and overall student trajectories in a new light. Specifically, person-centered approaches and growth mixture modeling with respect to longitudinal data has become increasingly common within recent years (O'Donnell, Lovelace, Reschly & Appleton, 2019). Utilization of newer and more advanced statistical approaches to analyze measures of individual student engagement and motivation, such as the SEI-C and MES-UC is vital to the continued growth and relevance of student engagement research.

Longitudinal research has become increasingly common beginning in middle and high school, finding evidence of the relationships between student engagement and long-term student outcomes (i.e., Christenson, Reschly, & Wylie, 2012; Finn, 2006; Fraysier et al., 2019). These longitudinal studies inform interventions and policies targeting students at risk of dropping out in these lower middle- and high school grades. As discussed by Christenson et al., (2012) continued longitudinal research is needed to further our understanding of student engagement. First, it is needed to examine student engagement beyond its descriptive and correlational relationships to its causal and determinate ones. Second, it is also necessary to further understand engagement and its development across dimensions (i.e., subtypes of engagement, different populations) as a student progresses through school. Although longitudinal studies have become increasingly common in the student engagement literature, few studies exist that connect high school and college. Given the connection between high school achievement and engagement and student

attendance and persistence in college as well as the individual and societal implications of college, it is clear there is a need for upward extension of these more rigorous longitudinal methods to post-secondary education to fully contextualize and understand student engagement across schooling. Therefore, the study of student profiles, intervention outcomes, and long-term impacts are an increasingly important component for expansion of the field of educational psychology and improving retention. More empirically rigorous research methods and continuing exploration increase our ability to identify and serve those at risk of dropout and to generally better serve all students at any point in their educational careers.

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