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Disentangling Student Engagement in Afterschool Programs

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of
Philosophy at Virginia Commonwealth University

by

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Dedication

This dissertation is dedicated to my parents. I have continuously been blessed by your love and support. I hope you know just how grateful I am to have you two. Thank you.

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Linking Document

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By Ashlee Morgan Lester

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University

Virginia Commonwealth University, 2020

Director: Sharon Zumbrunn, PhD
Associate Professor, Foundations of Education
School of Education

This dissertation presents a line of research exploring the characteristics and role of student engagement in afterschool programs, specifically during early adolescence. The dissertation takes a two-study format, building off of my comprehensive exam *Measuring engagement in out-of-school time programs*. This first chapter is an introduction in which I will detail the underlying problem that is investigated in the following two manuscripts. Following this introduction, the two separate studies are presented.

Statement of Problem

The hours between three and six pm in an adolescents day are a time that can provide great opportunity as well as great risk. Though on the decline, around 30% of middle school students and 4% of elementary school students are unsupervised between these hours (Afterschool Alliance, 2014). As a result, over 11 million American students are missing the extra-curricular opportunities available during these hours. Further, evidence has repeatedly suggested that these hours are associated with increased rates of youth delinquency and violence for unsupervised youth (Riggs & Greenberg, 2004). Synder and colleagues (1999) found increased rates of adolescent arrests during the afterschool period; and Cohen and colleagues

(2002) report that teens are most likely to engage in sexual intercourse during this time period. Thus, not only are unsupervised students missing out on available opportunities for positive development, they may in fact be putting themselves at greater risk of maladaptive outcomes through engagement in risky activities while unsupervised. This is of particular concern for early adolescents who have more autonomy over their afterschool opportunities (Akiva & Horner, 2016), and who more frequently disengage from productive afterschool outlets (Carver & Iruka, 2006).

Afterschool programs not only provide supervision during these hours, but also promote positive academic and behavioral development for the youth involved. Nationwide, as many as 10.2 million children spend some of their afterschool hours in these types of programs (Afterschool Alliance, 2014); and stakeholders believe that these hours will positively impact their development in a variety of ways. In fact, as a nation we spend billions of public and private dollars each year on these programs, believing that they have the potential to meet the needs of our students (Parsad & Lewis, 2009). However, recent reports of programmatic outcomes have funders and policy makers reconsidering their level of funding. While some scholars suggest that participation in afterschool programs is significantly associated with a reduction in problem behavior (Durlak et al., 2010; Grossman et al., 2002), others have found evidence to the contrary (Kremer et al., 2015; Zief et al., 2006). For example, a meta-analysis by Kremer and colleagues (2015) found a small and non-significant effect of afterschool programs on decreasing problem behavior in at-risk youth, and a lack of significant effects on school attendance. Thus, reports of efficacy remain muddled, challenging funders' support of these programs.

In response to this threat, afterschool advocates have begun to disentangle the mixed findings

in this literature by exploring student participation rates (e.g., how frequently a student attends a program or how long a student attends a program) and program quality to determine whether these variables mediate the relationship between enrollment and student outcomes. From this work, a growing literature base has begun to suggest that student participation (Lauer et al., 2006), more specifically, student engagement (Shernoff, 2010) is influential in impacting youth-level outcomes. Further, some scholars have advocated that engagement is a necessary step that youth must take to reap the full benefits of participating in an afterschool program (Ehrlich et al., 2017). However, to date, research on engagement in afterschool programs is mixed and complicated, leaving much more to be done (Fredricks et al., 2017; Lester, under review).

Engagement can be thought of as *how* a student is participating in an afterschool program. For example, students can choose to actively engage in program content by paying attention, focusing, and forming relationships with their peers. However, students can also choose to disengage by turning their focus to other activities or choosing not to involve themselves with others in the environment. In this way, a student may show up to participate in a program but have a vastly different experience than another student who actively engages. This variability in engagement levels is risky because evidence suggests that highly engaged youth experience better adaptive outcomes than their irregularly engaged peers (Fredricks et al., 2014). Thus, more work needs to be done to explore the relationship between engagement and student outcomes.

In attempts to do this, a comprehensive review synthesized 30 different articles that investigated student engagement in afterschool programs. In this review, Lester (under review) found evidence that engagement is positively associated with various adaptive outcomes such as academically related attitudes, social competence, and students' future thoughts. However, the review also illuminated various issues in the study of afterschool engagement. For one, the field

is conceptualizing engagement in a variety of ways, often failing to draw on a theoretical framework to ground its' investigation (Fredricks et al., 2017; Lester, under review). While some scholars conceptualize engagement as flow, or the experience of being completely immersed in an activity when an appropriate level of challenge is matched with an appropriate level of skill (Csikszentmihalyi & Rathunde, 1993); others emphasize a more behavioral conceptualization of engagement focusing on student attention (e.g., Mahoney et al., 2007), effort (e.g., Beymer et al., 2018), or task orientation (e.g., Pechman & Marzke, 2003).

As a result, engagement continues to be measured differently across studies, with scholars adopting methods such as self-report scales, observations, interviews, and experience sampling (Fredricks et al., 2017). Given this, scholars struggle to explicitly identify the definition of engagement in afterschool programs (Fredricks et al., 2014; Lester, under review). This tension, combined with the lack of methodological rigor in the field (Lester, under review), complicates our ability to draw firm conclusions about the influence of engagement on student outcomes. As a result, the field is left with an inability to clearly understand whether or not engagement is a key factor that it is claimed to be.

Rationale for Study of the Problem

Building from an awareness of these tensions, these two studies are designed to push the field towards a more clear understanding of early adolescents' engagement in the context of after school programs. To do this, I use an explicit theoretical framework of engagement in afterschool programs (Fredricks et al., 2016) and consider its' association with a few different student outcomes such as academic performance and positive youth developmental outcomes. In accordance with this theoretical framework, I define engagement as a combination of the affective, behavioral, cognitive and social features (Fredricks et al., 2016) of commitment or

investment in an afterschool activity.

Affective engagement encompasses the positive and negative emotions experienced during participation in an activity. These emotions are important as they have the potential to create a sense of belonging in an environment, prompting a student to feel comfortable and continue to engage. Thus, affective engagement encompasses an individual's emotions, interest, and values. Behavioral engagement is understood as active participation in an activity, and can be conceptualized as attendance, effort, following the rules, concentration, and on-task behavior (Bartko, 2005; Fredricks et al., 2004). Behavioral engagement acts as an essential first step to achieving positive outcomes such as academic achievement and retention (Finn 1989, 1993; Fredricks et al., 2004). Cognitive engagement is similar to investment in an activity or learning, and involves exerting the necessary effort to understand complex ideas and master challenging skills (Bartko, 2005). Finally, social engagement is conceptualized as the quality of an individual's interactions with others as well as their willingness to form and maintain relationships (Wang et al., 2016). Fredricks and colleagues (2016) posit that our idea of engagement should also include this social dimension "because social interactions, collaborative learning, and help seeking from peers are playing an increasingly important role in education" (p. 12). Additionally, their qualitative work has found that adolescents view this social aspect of engagement as an essential part of their learning in math and science. As afterschool programs are often focused around group activities, I posit that social interactions will play a large role in a youth's engagement in this space as well.

Through adopting this multi-dimensional theoretical framework, I address scholars concerns around conceptual alignment in the field, further contributing to the field of literature itself. Additionally, results from this line of research are influential on both a policy and practice

level. For one, this research provides a more rigorous understanding of the role of youth engagement in program outcomes. In this way, the results add to the ongoing debate around funding and resources for such high-quality programs. Further, on a practice level, this work provides program leadership with a working understanding of youth-identified sources and barriers to engagement. Thus, programs will be able to build from these results to more fully understand how to motivate their students towards engagement, which is hypothesized to promote better outcomes. Taken together, implications from this work support not only the field in developing a more full understanding; but also have practical implications on the work of ground-level programs.

Two Manuscripts

Paper 1. To address the aforementioned gaps in the literature, paper one, *Afterschool Engagement: Investigating Developmental Outcomes for Adolescents*, determines the most appropriate factor structure for measuring engagement in afterschool contexts, and investigates the relationship between engagement and adaptive youth outcomes. Through the rigorous methodological design, explicit theoretical framework, and measurement of student level outcomes such as academic performance and Positive Youth Development (PYD), this research provides more clarity about the role of student engagement in afterschool programs. In this cross-sectional study, I asked early adolescents to complete a four-factor engagement scale (adapted from Wang et al., 2019) and a youth development scale (adapted from Geldhof et al., 2014). This data was then matched with secondary data on student demographics and academic achievement to investigate the following four research questions:

1. To what extent are middle school students engaged in the afterschool programs they participate in?

2. What is the most appropriate factor structure for the Afterschool Engagement scale?
3. Does engagement in afterschool programs predict academic achievement?
4. Does engagement in afterschool programs predict PYD outcomes?

Confirmatory factor analyses were conducted; confirming that engagement in afterschool programs is best modeled as a mixture of affective, behavioral, cognitive, social, and global facets of engagement. These results align with the models of engagement in other educational contexts such as Math / Science (Wang et al., 2016), and school more broadly (Wang et al., 2019). Follow up structural equation modeling suggested that early adolescents' afterschool engagement was positively associated with Math achievement. These results provide a simple and validated tool for measuring engagement in afterschool spaces as well as initial evidence in how engagement in high-quality afterschool programming is associated with developmental outcomes.

Paper 2. Study two, *Afterschool Engagement: A Mixed Methods Approach to Understanding Profiles of Youth Engagement* builds off of this work to further explore profiles of student engagement and how these profiles might relate to students' engagement decisions. An explanatory sequential mixed methods design was used to explore students' perspectives on the sources and barriers to engagement in afterschool programs. Based on the hypothesis that engagement is a vital step youth must take to fully reap the benefits of an afterschool program (Ehrlich et al., 2017; Weiss et al., 2005): it is important to understand what motivates or hinders youth to take this step. Results from this study provide programs with tangible youth-identified sources to promote student engagement on a ground level. With this goal in mind, the following four research questions were investigated:

1. (Quantitative) What afterschool engagement profiles exist for middle school students participating in an afterschool program?
2. (Quantitative) Do students' individual characteristics (gender, grade, race/ethnicity) predict profile membership into engagement profiles?
3. (Qualitative) What perceived sources and barriers are related to youth engagement in afterschool programs?
4. (Mixed) Do sources and barriers to engagement differ by students' engagement profile?

Latent profile analyses were conducted using the engagement data collected in study one. Results of these analyses suggested a three profile solution of student engagement: *moderately engaged*, *affectively engaged*, and *disengaged*. This suggests that while the majority of adolescents were moderately engaged in the afterschool program, some students reported being solely affectively engaged while others reported low levels of engagement across the board. To further understand these profiles, I selected students to participate in semi-structured focus groups to explore what sources and barriers students identify both collectively and by profile. Focus groups revealed that students' engagement decisions were supported by friends, family, program content, and fun; and that student behavior and boring content served as two barriers to engagement. Qualitative profile differences did emerge. For example, students in the *disengaged* profile more frequently reported the barrier of their peers' disruptive behavior than students in the other two profiles. Results from this study extend our understanding of student engagement styles in afterschool programs. Additionally, they provide youth-driven evidence on what motivates and what hinders their desire to engage in programs.

Research Significance

Taken together, this work highlights the importance of advancing our understanding of engagement in afterschool spaces. From a research perspective, this work exemplifies how a multi-dimensional framework of engagement holds true in informal educational settings (Lester, paper 1). Further, it suggests alignment between adolescent engagement profiles both in and out of school, with the majority of students being moderately engaged in their learning contexts (Lester, paper 2). While study one is the first to consider all four dimensions (affective, behavioral, cognitive, and social) of afterschool engagement, study two builds upon this work to demonstrate how these dimensions are differentially experienced by early adolescents. In this way, this line of research extends the field of engagement into informal educational settings, and expands our understanding of students' afterschool experiences.

Pragmatically, this line of research helps to inform program staff about the factors related to youth engagement, and provides an easy to administer and validated measure of student engagement (Lester, paper 1). This supports individual programs by enabling them to collect their own validated engagement scores without the need for complex data collection methodologies. Additionally, it provides program staff with youth identified sources and barriers that they can build upon to address engagement issues and promote continued engagement decisions (Lester, paper 2).

Under the current administration, there has been various discussions of cutting funding for afterschool and other out-of-school time programs for youth. Given this threat, there is a need for a more thorough understanding and reporting of how afterschool programs have the potential to positively influence youth development. Given that research suggests that positive program effects differ based on youths' level of engagement, program staff are seeking guidance when it

comes to engaging adolescents in their programs. This line of research provides evidence of the positive relationship between afterschool engagement and Math achievement as well as key sources of youth engagement that programs can build upon. Using these results, programs can both justify continued funding and further promote student engagement in these types of programs. Thus, the goal is that through increased engagement, the potential positive outcomes will be felt by more youth and reported by more programs; supporting the continued funding of high-quality afterschool programs.

Definition of Terms

1. **Afterschool programs:** According to Roth, and colleagues (2010), afterschool programs are adult-supervised school or community based programs. Typically, these programs meet regularly during the school year, offer a variety of activities, and emphasize group work.
2. **High quality:** Though there is no definitive consensus in the literature on afterschool program quality, indicators of quality typically include: 1) positive relationships between youth and staff; 2) positive physical and emotional climate; 3) high level of youth and staff engagement; 4) healthy behavioral and social expectations; 5) skill building opportunities; and 6) a highly organized structure of the program (Yohalem & Wilson-Ahlstrom, 2010).
3. **Student Engagement:** The affective, behavioral, cognitive, and social aspects of a student's investment or commitment to an activity (Fredricks et al., 2016).

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Manuscript 1

Afterschool Engagement: Investigating Developmental Outcomes for Adolescents

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Abstract

Student engagement is hypothesized as a key factor in explaining student level differences in afterschool program outcomes (Bohnert et al., 2010). However, the measurement of student engagement in this context is inconsistent, and little is known about how engagement impacts outcomes (Lester, under review). In this study, I adapt Wang and colleagues' (2019) adolescent school engagement scale to be used with a sample of urban middle school students ($N = 197$) who regularly participate in an afterschool program. Confirmatory Factor Analyses and Structural Equation Modeling are applied to investigate the most appropriate factor structure as well as the relationship between student engagement and youth outcomes. Results suggest that engagement is best measured as a bifactor model, and has positive associations with student Math achievement. The results provide a validated way to measure the four proposed dimensions of engagement in an out-of-school context.

Keywords: engagement; afterschool; academic achievement; Positive Youth Development

Over 11.3 million children are left unsupervised during what scholars have identified as the riskiest hours of a student's day (Afterschool Alliance, 2014). These hours, between 3 and 6pm, are hours of great opportunity for students who participate in afterschool programs (Durlak et al., 2010), but can also be hours of great risk for students who are unsupervised (Riggs & Greenberg, 2004). Afterschool programs are typically school- or community-based organizations that students attend regularly throughout the school year. These programs are directed by adults, offer a variety of activities, and emphasize the development of adaptive skills for their participants (Roth et al., 2010).

Over time, many scholars have reported evidence that participation in high-quality afterschool programs supports positive academic and developmental outcomes for youth (Durlak et al., 2010; Lauer et al., 2006; Mahoney et al., 2005; Mahoney & Vest, 2012). Though there is no definitive consensus in the literature on the nature of program quality, indicators of high quality typically include: 1) positive relationships between youth and staff; 2) positive physical and emotional climate; 3) high level of youth and staff engagement; 4) healthy behavioral and social expectations; 5) skill building opportunities; and 6) a highly organized structure of the program (Yohalem & Wilson-Ahlstrom, 2010). However, despite attention to quality features in afterschool programs, scholars have begun to suggest that student participation plays a vital role in whether or not students experience the intended outcomes of a program (Lauer et al., 2006; Vandell and Pierce, 1999). Thus, although high quality programs may positively contribute to students' development; the impacts of these programs may be dependent upon youths' willingness to actively participate and engage, week in and week out.

Even though afterschool participation rates have been increasing in the past decade, programs still struggle recruiting and maintaining youth participation (Anderson- Butcher 2005;

Weiss et al., 2005). This difficulty is exacerbated with secondary students, and students from low-income communities who report lower attendance rates in afterschool programs than their higher-income peers (Carver & Iruka, 2006; Mahoney et al., 2009). In fact, afterschool participation rates sharply decline as students enter 6th grade, and begin to have more autonomy over their afterschool decisions (Carver & Iruka, 2006). Further, developmental research suggests that middle school is a time in which maturational and contextual changes collide leaving youth at risk for heightened social stress, decreases in academic motivation, and decreases in academic achievement (Juvonen et al., 2004; Rodkin & Ryan, 2012). Unsupervised afterschool hours have been linked to peaks in juvenile delinquency and victimization (Snyder et al., 1999); as well as increases in sexual activity, smoking, and substance abuse (Richardson, 1989). However, actively participating in afterschool programs may serve as a much-needed external support to mitigate some of these risks for early adolescents.

Basic attendance compared to active engagement in an afterschool program provides youth with two very different experiences. For example, there is a difference between a student who shows up to a program on a daily basis and one who develops relationships with program staff and feels a sense of belonging to the program. This distinction in types of participation is why evaluations of afterschool programs should move beyond typical measures of participation that focus on dosage and length of participation. In addition, evaluations should emphasize the study of engagement, which measures a step beyond the youth showing up for the program. Ehrlich and colleagues (2017) advocate that engagement is a necessary step that youth must take beyond baseline participation to fully reap the benefits of an afterschool program. Further, Fredericks and colleagues (2014) suggest that highly engaged youth experience more positive academic outcomes from afterschool programs than their peers with lower reports of

engagement. However, in spite of evidence suggesting that engagement helps to explain student level differences (Bohnert et al., 2010; Roth et al., 2010), limited research exists exploring engagement in afterschool programs (Lester, under review; Roth et al., 2010).

In response to this gap in the literature, the goal of this work is to extend the field of research regarding afterschool programs by developing a working understanding of not only the factors related to adolescent engagement, but also how youth engagement in afterschool programs is related to academic achievement and positive youth developmental outcomes. From a developmental and programmatic perspective, the investigation of youth engagement in afterschool programs is a step in the direction of developing a more complete understanding of the potential positive effects of afterschool programs on youth development.

Engagement

To investigate differences in youth engagement in afterschool programs, I will adopt Fredricks and colleagues' (2016) multifactorial framework of engagement. According to this framework, engagement is comprised of affective, behavioral, cognitive, and social features of commitment or investment in an activity. Affective engagement is defined as a student's positive and negative emotions that they experience while participating in an activity. In other words, affective engagement is comprised of students' emotions, interest, and values. It has the potential of creating a sense of belonging in the afterschool environment. This sense of belonging is particularly important for middle school students who have developed a sense of autonomy, and may choose to opt out of programming that doesn't engage them. More commonly, behavioral engagement can be conceptualized as students' actions while participating in an activity. For example, it has been measured as attendance, effort, following the rules, concentration, and on-task behavior (Bartko, 2005; Fredricks et al., 2004; Lester, under review). Research suggests that

behavioral engagement acts as a gateway to positive outcomes for youth (Finn 1989, 1993; Fredricks et al., 2004). Cognitive engagement can be defined as investment in an activity or learning. It often requires students to exert effort to understand and master complex ideas and skills (Bartko, 2005).

In the past few years, theories have surfaced that call for the inclusion of a fourth type of engagement: social engagement. Social engagement is understood as an individual's interactions with others as well as their willingness to form and maintain quality relationships (Wang et al., 2016). Fredricks and colleagues (2016) aptly note that "social interactions, collaborative learning, and help seeking from peers are playing an increasingly important role in education;" and therefore a social facet should be considered when we investigate students' engagement (p.12). Given that a key feature of afterschool programs is an emphasis on group-oriented activities (Roth et al., 2010), and that early adolescents place high priority on developing strong ties with their peers (Rodkin & Ryan, 2012), social engagement likely plays a key role in youths' engagement in out-of-school spaces. In these programs, students are frequently engaged in activities that necessitate teamwork, collaboration, and help seeking from both peers and program staff. Further, programs provide an additional space in which students can foster and build friendships, a driving factor for early adolescents' desire to participate (Akiva & Horner, 2016). Due to these developmental and motivational rationales, I believe that the measurement of social engagement in addition to the three original dimensions will provide a unique and novel perspective to understanding how youth experience engagement in their afterschool programs. This perspective will move beyond the traditional measures of engagement in afterschool programs (e.g., interest, challenge, effort, etc.), and provide an initial step to understanding how the four factors of engagement are expressed in youths' experiences. Though the multi-

dimensional framework indicates the differences in these four factors, scholars claim that the factors should be conceptualized as a whole since they occur simultaneously as opposed to in a vacuum (Bartko, 2005).

Measuring Engagement in Afterschool Programs

In a comprehensive search of measures that have been utilized to assess engagement in afterschool programs, Fredricks and colleagues (2014) conclude, “none of the survey measures included items to address all three dimensions of engagement (that is, behavioral, emotional, and cognitive)” (p. 50). Similarly, Lester (under review) conducted a comprehensive review reporting that there is limited research in the study of engagement in afterschool programs, but the few studies that have investigated engagement in this context have done so by investigating myriad students’ experiences such as enjoyment, interest, effort, on-task behavior, and challenge (Mahoney et al., 2005; Shernoff & Vandell, 2007; Greene et al., 2012). Shernoff (2010) and Leos-Urbel (2015) provide concrete examples of this lack of alignment in conceptualization. For example, Shernoff (2010) investigated middle school students’ engagement in afterschool programs, conceptualizing engagement as the concurrent experience of enjoyment, interest, and concentration. In this investigation, he found that this type of engagement partially mediates the relationship between program participation and social competence. However, in a similar investigation of middle school students’ engagement, Leos-Urbel (2015) conceptualized engagement as opportunities for students to participate in higher-order decision-making, take leadership, and collaborate. Discrepancies such as these in the conceptualization of engagement are consistent across research in this field.

Additionally, there is no consistency across measurement types; with some scholars and programs using self-report surveys whereas others emphasize the use of observational tools,

experience sampling methodology, or interviews (Fredricks et al., 2017; Lester, under review). For example, Shernoff (2010) used experience sampling where he signaled students five times a day during out-of-school time whereas Leos-Urbel (2015) relied on an observational measure. Given this inconsistency in the conceptualization and measurement of engagement, scholars posit that there is a need for the adoption of an explicit theoretical model and a deeper understanding of how the factors of engagement manifest in afterschool programs and impact youth developmental outcomes (Bohnert et al., 2010; Fredricks et al., 2014; Lester, under review). Thus, my goal in adopting the multi-dimensional theoretical framework is to address scholars' concerns about the field's lack of investigation around the various factors of engagement in afterschool programs.

By employing this full model, including behavioral, affective, cognitive, and social components, I build on the current literature base in three main ways. This work serves to 1) fill the gap identified by scholars (Fredricks et al., 2004; Fredricks et al., 2017) that surveys have failed to measure all dimensions of engagement in this context; 2) draw on an explicit theoretical framework to ground the investigation of engagement in afterschool spaces; and 3) provide validity evidence for the four-factor engagement scale in an afterschool context. Thus, this study provides a broader understanding of how the dimensions of engagement function together and promote positive development in the context of high-quality afterschool programs.

Positive Youth Development

The Positive Youth Development (PYD) framework provides an alternative to the typical deficit perspective of adolescence as a period of “storm and stress” that must be overcome (Hall, 1916). In this view, the conceptualization of adolescents is transformed from “problems to be managed” to individuals with strengths and assets that can be beneficial to society (Bowers et al.,

2010, p. 721). Thus, the developmental study of youth moves from an emphasis on avoidance of behaviors and risk to an investigation of youths' assets and indicators of their thriving.

Though various models of positive youth development exist (for a review, see Lerner et al., 2009), this research will focus on the Five Cs model of PYD, as it is currently the most empirically supported framework (Heck & Subramaniam, 2009). The Five Cs of PYD include competence, confidence, connection, character, and caring. Competence is conceptualized as positive beliefs of one's ability in various specific domains (Lerner et al., 2005). These domains can include the individual's social, cognitive, academic, and vocational competence. The second of the 5 Cs is an individual's global sense of self-efficacy, termed confidence. Confidence is understood as a global construct as opposed to the domain specificity of competence. Connection, or an individual's positive bonds with people and institutions is the third C of this PYD model. This connection is bidirectional in which both the individual and the other contribute to the connection. Character is the fourth C of the model, conceptualized as an individual's morality, integrity, and respect for societal norms and standards. Finally, caring / compassion is the last of the Cs, and is understood as a basic level of empathy and sympathy for others (Lerner et al., 2005).

Some scholars suggest that if all of these 5 Cs of PYD are achieved, then a sixth C (contribution) emerges in the youth's life. Contribution is experienced when the individual engages in behaviors that are indicative of the Five Cs to contribute to the benefit of themselves, their family, their community, and their society (Lerner, 2004). Thus, contribution is experienced externally through an individual's behavior, but also internally in the youth as they begin to possess "an identity that specifies that such contributions are predicated on moral and civic duty" (Lerner et al., 2005, p. 23).

The Five Cs of PYD are common in the investigation of afterschool programs since many programs are designed to take a “whole child” approach to youth development, as opposed to focusing on a single issue (i.e. tutoring) or a risk avoidance approach (i.e. drug intervention). Therefore, in addition to their academic goals, many programs have larger goals of developing the social skills, critical thinking, self-concept, and citizenship of their participants. Thus, it is important that research of afterschool programs extends beyond just investigating measures of academic achievement. By employing this theoretical framework in combination with the full model of engagement, this research investigates the effects that afterschool programs have on participants’ positive developmental outcomes.

Engagement and Positive Youth Development

Given that afterschool programs are designed to support the whole student, positive youth developmental outcomes are expected to gradually increase over the course of an adolescent’s participation in a program. However, the limited literature base on youth engagement and PYD related outcomes suggests that this gradual increase may be more significant in youth who are regularly engaged in afterschool programs. Shernoff (2010) suggests that adolescents’ engagement in afterschool programs acts as a mediating variable between middle school students’ participation and social competence, accounting for a significant portion of the positive association between the two variables. Similarly, Sloper (2016) investigated middle school students’ engagement in afterschool programs, reporting that engagement was a significant predictor of positive identity even after controlling for pre-program measures. Zeldin and colleagues (2016) found a similar relationship between high school students’ engagement in extracurricular programs and their reported leadership competence. Thus, the few studies investigating positive developmental outcomes in relation to student engagement suggest that

there is a positive association between the two (Lester, under review). Given this, I hypothesize that higher engagement will predict higher PYD outcomes since these students not only experience more exposure to the program content but also are more active in their participation with program staff and other students. Specifically, I hypothesize that higher levels of global and social engagement will positively predict connection, character, and caring as these developmental outcomes are relational in nature.

Engagement and Academic Achievement

Academic achievement is an equally important outcome for many afterschool programs targeted at middle school youth. Many stakeholders of afterschool programs; including staff, parents, and funders, desire to see students experience achievement gains in addition to positive development. Due to this, many programs include tutoring, academic lessons, or enrichment lessons in their programming. Overall, evidence suggests that participation in afterschool programs is linked to gains in academic achievement (Lauer et al., 2006; Mahoney & Vest, 2012); but little is known about the role of engagement in this relationship (Lester, under review). While some scholars have found associations between engagement in afterschool programs and achievement gains (Kauh, 2011; Mahoney et al., 2005), others have reported a lack of significant relationships (Arbreton et al., 2008). Using a student report measure of engagement, Kauh (2011) found that middle school students' engagement in an afterschool program was positively correlated with higher Math and Science grades. However, Arbreton and colleagues (2008) found no significant relationship between student engagement and the reading gains of elementary students. These mixed results may be due to developmental or demographic differences across the student samples, or to the different ways in which the researchers decided

to measure emotional engagement. However, they do highlight that much more investigation into this potential relationship is needed.

In this study, it is expected that highly engaged youth will experience more achievement gains. In other words, I hypothesize that engagement will positively predict Math and Reading grades. Additionally, though the investigation of engagement type is exploratory in nature, it is hypothesized that global, cognitive, and behavioral engagement will predict higher achievement gains, particularly in Math given the STEM focus of many of the classes. Since the link between these two dimensions and increased academic achievement has been well documented in school-based studies (Fredricks et al., 2004), I hypothesize that these associations will extend into the afterschool engagement field as well.

The Present Study

In order to investigate the relationship between engagement and youth outcomes, I conduct a cross-sectional study of program engagement, academic achievement, and PYD. This study builds upon current work to address the limitations in literature around adolescent engagement in afterschool programs. The current literature base is sparse, as very few studies have explored program engagement (Bohnert et al., 2010; Lester et al., 2020; Lester, under review), much less in relation to program outcomes or specifically with middle school students. Thus, there is a need for a more thorough understanding of how engagement is experienced by program participants, how it is best modeled, and if engagement practices are associated with the potential outcomes of afterschool program participation.

To date, no study has investigated the four dimensions of engagement (affective, behavioral, cognitive, social) in an afterschool setting (Lester, under review). Thus, the study extends the way in which engagement has been investigated in afterschool programs, and

answers the call of Fredricks and colleagues (2014) for the use of a multifactorial measure of youth engagement in afterschool programs. As such, through this study I validate the four-factor engagement scale in an afterschool context and consider not only differential levels of engagement but also if these differences relate to student outcomes. The incorporation of a multi-dimensional view of engagement provides both researchers and program staff with an understanding of how students' experiences of engagement in afterschool programs may differ on more than just engagement level.

Using this non-experimental cross-sectional correlational research design, I investigate the following research questions:

1. To what extent are middle school students engaged in the afterschool programs they participate in?
2. What is the most appropriate factor structure for the Afterschool Engagement scale?
3. Does engagement in afterschool programs predict academic achievement?
4. Does engagement in afterschool programs predict PYD outcomes?

Method

Research Site

Study participants included a convenience sample of middle school students who participate in Starters, a district-wide out of school time system that provides students access to high-quality programs in a large Southeastern urban city. Starters partners with five middle schools, and serves over 600 predominantly low income and underrepresented minority (URM) students between the hours of three and six-thirty, providing them with dinner and transportation home as well as various activities including homework support, career and work readiness classes, and sports / health options. In the 2019-2020 school year, the partnering school district

served 63% Black students, 19% Latinx students, 14% White students, and 100% of students qualified for the federal Free/Reduced Priced Lunch Program (VDOE, 2020).

Starters students participate in two classes each session, and have the option to switch classes at the end of each of the three sessions. As such, students have the autonomy to select into classes that they are more interested in taking, and class sizes tend to be moderately small. Programmatically, classes are offered across four different domains: STEM, Sports & Wellness, Leadership & Work Readiness, and Arts & Humanities. Participation in Starters is open to all students enrolled in the middle school, and is optional, requiring parental and student support. Starters participates in the local Youth Program Quality Intervention (YPQI), engaging in a yearly process designed to ensure that youth serving programs are meeting quality standards. As such, Starters is considered a high-quality program in the region.

Participants

The study sample consisted of 197 Starters participants. The majority of students identified as male (54.48%), and reported a mean age of 12.27 years. Additionally, 81.38% identified as Black, 17.93% as White, and 0.69% as an Other race/ethnicity. Approximately 17.24% of students identified as Latinx. The majority of students reported being in 7th grade (38%), with 6th grade (37%), and 8th grade (23%) following closely behind.

Measures

The instrument consisted of two distinct survey pieces:

Afterschool Engagement Survey. Engagement items were drawn from Wang and colleagues' (2019) school engagement scale and adapted for use in the afterschool context (Appendix A). The scale consisted of 16 items that ask students to rate, on a 5 point Likert-scale (1 = not at all like me; 5 = very much like me) how behaviorally, cognitively, socially, and

affectively engaged they are their afterschool program. Sample items from this scale include: “I stay focused,” “I look forward to [program name],” and “I build on others’ ideas.” McDonald’s Omegas were .89, .74, .70, .79, and .82 for the global, cognitive, behavioral, affective, and social subscales, respectively. Evidence of concurrent validity was suggested by a positive correlation between the engagement scale and the number of days students attended Starters ($r = .19$). Coefficient H was found to be .84, .74, .76, .82, and .84 for the global, cognitive, behavioral, affective, and social subscales, respectively, suggesting good construct replicability.

Positive Youth Development Survey. Geldhof and colleagues’ (2014) Very Short Positive Youth Development Questionnaire for Younger Adolescents was used to measure participants’ developmental outcomes (Appendix B). This questionnaire is comprised of 17 items that are designed to measure the 5 Cs of PYD: competence, connection, confidence, character, and caring. The measure has been validated with early adolescents, and thus is appropriate for measuring middle school students’ development. The very short version of the PYD scale has been found to produce scores with moderate to high internal reliability ranging between $\alpha = 0.80$ and $\alpha = 0.93$, and evidence for face and criterion validity has also been suggested (Geldhof et al., 2014). In this sample, McDonald’s Omegas were .57, .79, .45, .77, and .25 for connection, care, character, confidence, and competence subscales respectively. Coefficient H ranged between .42 and .80, suggesting good construct replicability for most subscales.

Procedure

Potential participants were read an assent form and given the opportunity to ask any questions, prior to the start of the survey. Following all assent procedures, participants were read the instructions, and completed the instrument in a private room using paper and pencil. Secondary data was collected in collaboration with the Director of Evaluation at Starters.

Demographic data included student gender, grade, age, and race/ethnicity. I also obtained academic (Reading and Math grades) and attendance data.

Analytic Approach

Data sets were merged and cleaned using Stata 14, and all subsequent analyses were conducted in Mplus 8 (Muthén and Muthén, 1998-2017). I used the maximum likelihood with robust (MLR) estimator to account for non-normality of the data, as well as full information maximum likelihood (FIML) to account for data missing at random. First, I ran item descriptive statistics to explore the extent to which students are engaged in Starters. Next, in order to determine the most appropriate factor structure for the Afterschool Engagement Scale, I conducted a series of confirmatory factor analyses (CFAs) including a one-factor model, a four-factor model and a bifactor model. The four-factor model presented student engagement as a combination of affective, behavioral, cognitive, and social features whereas the bifactor model added in an additional global factor to see if engagement is experienced above and beyond these four specific factors. Each model was investigated in terms of model fit, using several fit statistics including the Confirmatory Fit Index ($CFI \geq .95$), the Tucker-Lewis Index ($TLI \geq .95$), the Root Mean Square Error Approximation ($RMSEA \leq .06$) and the Standardized Root Mean Square Residual ($SRMR \leq .08$; Hu & Bentler, 1999).

Using structural equation modeling (SEM), I then explored the extent to which engagement predicts students' Reading and Math achievement. In the first step, I used factor scores from the best fitting model to predict observed Reading and Math grades. Following this step, I included gender, grade, and race / ethnicity as covariates in the structural model. Similarly, I used SEM to explore the association between student engagement in afterschool

programs and youths' reports of PYD. PYD was modeled as a composite score. Again in this analysis, I included gender, grade, and race/ethnicity in the model to investigate if these models varied by student demographics.

Results

Descriptive Statistics

By and large, students reported being highly engaged in Starters during their afterschool hours. Item descriptive statistics are presented in Table 1 for the afterschool engagement items.

Table 1. Item Descriptive Statistics.

Item	M	SD	Min	Max
I look over my Starters work and make sure it is done well.	3.74	1.39	1	5
I keep trying even when I get stuck.	3.91	1.03	1	5
I work hard in the face of challenges / difficulties at Starters.	3.91	1.19	1	5
I figure out what I did wrong when I make mistakes at Starters.	3.80	1.37	1	5
I always try my best at Starters.	4.19	1.01	1	5
I contribute to what we are doing at Starters.	4.00	1.08	1	5
I get involved in Starters activities.	4.30	0.93	1	5
I ask questions when I don't understand.	3.80	1.59	1	5
I am happy at Starters.	4.20	1.13	1	5
I am proud to go to Starters.	4.19	1.06	1	5
I am interested in what we are learning at Starters.	3.97	1.32	1	5
I enjoy working with peers at Starters.	3.90	1.28	1	5
I am open to making new friends at Starters.	3.81	1.61	1	5
I enjoy spending time with peers at Starters.	3.94	1.44	1	5
I work with other students and we learn from each other.	3.68	1.50	1	5

Multi-dimensional Factor Structure of Engagement

Results from the CFAs demonstrated that a bifactor (cognitive, behavioral, affective, social, and global) measurement model most appropriately represented the data (Table 2). During these analyses, a single item (*I have fun at Starters*) was dropped from the afterschool engagement scale given that it presented a Heywood case, containing a large negative residual variance that prohibited a measurement model from converging. This item was more negatively skewed than others given the nature of an afterschool environment, and removing the item did not substantively change the meaning of the affective engagement factor (see Table 3 for items). Once this item was dropped, all CFAs were rerun and the hypothesis confirmed that afterschool

engagement was in fact best represented as a combination of a cognitive, behavioral, affective, social, and global understanding of engagement (Figure 1).

Table 2. Fit Statistics for CFA of One-factor, Four-factor, and Bifactor Models.

Measurement Model	χ^2	df	p Value	RMSEA	CFI	TLI	SRMR	Range of Stdyx. Factor Loadings
P* One-factor	2260.72	104	< .01	0.09	0.83	0.80	0.07	0.35 – 0.76
P* Four-factor	154.70	98	< .01	0.05	0.94	0.93	0.05	0.51 – 0.84
P* Bifactor	Did not converge due to large negative residual variance							
Final One-factor	237.23	90	< .01	0.09	0.82	0.79	0.07	0.35 – 0.74
Final Four-factor	143.53	84	< .01	0.06	0.93	0.91	0.05	0.52 – 0.84
Final Bifactor	117.73	75	< .01	0.05	0.95	0.93	0.05	-0.13 – 0.86

Note. Stdyx = Standardized; P* = Preliminary

In this final model, all standardized factor loadings for the global factor were 0.30 or above and statistically significant at the $p < .001$ level, providing strong evidence for the presence of a global factor of engagement. For the cognitive, behavioral, and social specific factors, loadings were generally lower than loading onto the global factor. Specifically, factor loadings for the cognitive factor ranged from 0.30 to 0.65, and from 0.12 to 0.50 and 0.36 to 0.51 for the behavioral and social factors respectively. However, factor loadings on the affective factor present a less direct story. In light of these low and negative factor loadings, I ran an additional CFA model in which the affective factor was removed as a specific factor, and only included in the global factor of engagement. However, the new model did not outperform the bifactor model in terms of fit ($\chi^2(78) = 123.81, p < .01$; CFI = .95; TLI = .93; RMSEA = .06; SRMR = .05). Given the lack of improvement in model fit, and the theoretical rationale that affective engagement is critical in an afterschool setting, the bifactor model was maintained as the most appropriate factor structure. Taken together, these results suggest that students' experiences of engagement in the afterschool context are comprised of cognitive, behavioral, affective, social, and a global facet of engagement.

Table 3. Standardized Factor Loadings of the Bifactor Measurement Model of the Afterschool Engagement Scale.

Item	Global	Cognitive	Behavioral	Affective	Social
I look over my Starters work and make sure it is done well.	0.60*	0.30*			
I keep trying even when I get stuck.	0.30*	0.65*			
I work hard in the face of challenges / difficulties at Starters.	0.41*	0.56*			
I figure out what I did wrong when I make mistakes at Starters.	0.59*	0.31*			
I always try my best at Starters.	0.58*		0.23		
I contribute to what we are doing at Starters.	0.64*		0.50*		
I get involved in Starters activities.	0.41*		0.46*		
I ask questions when I don't understand.	0.48*		0.12		
I am happy at Starters.	0.76*			0.56	
I am proud to go to Starters.	0.74*			0.17	
I am interested in what we are learning at Starters.	0.75*			-0.11	
I enjoy working with peers at Starters.	0.64*				0.36*
I am open to making new friends at Starters.	0.53*				0.51*
I enjoy spending time with peers at Starters.	0.68*				0.47*
I work with other students and we learn from each other.	0.52*				0.44*

Note. * $p < .05$

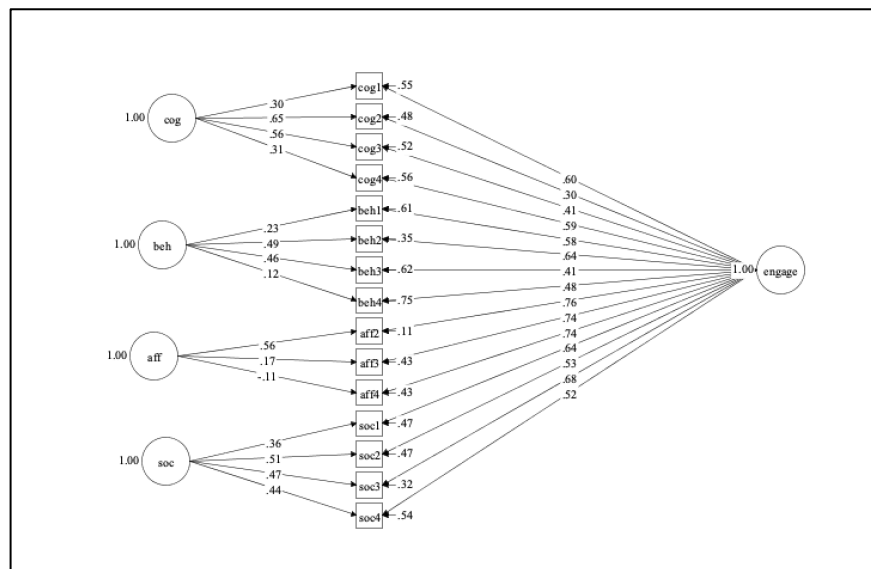


Figure 1. Factor Structure of the Afterschool Engagement Scale.

Engagement and Academic Achievement

In relation to academic achievement, the final structural model (Figure 2) provided good fit to the data: $\chi^2 = 133.70$ ($p < .01$), CFI = .96, TLI = .94, SRMR = .04, and RMSEA = .05.

Partially confirming the hypothesis, this model shows one positive and significant relationship between global engagement and Math achievement ($\beta = 3.67$, $p < .01$). More specifically, a one

standard deviation increase in global engagement was positively and significantly associated with a 3.67 point increase in Math grades. There were no other significant associations between specific factors of student engagement and Math achievement. With relation to English achievement, there were no significant associations between global engagement ($\beta = 0.04$, *ns*), cognitive engagement ($\beta = 1.81$, *ns*), behavioral engagement ($\beta = 1.02$, *ns*), affective engagement ($\beta = -0.60$, *ns*), social engagement ($\beta = -3.27$, *ns*) and English grades. Results of this model suggest that students' global experiences of engagement may contribute to students' Math achievement.

Grade level, as a covariate was significant and positively related to Math achievement ($\beta = 3.43$, $p < .01$), meaning that older students were predicted to have higher Math grades. Gender was also significantly related to Math grades ($\beta = -5.54$, $p < .01$). In other words, male students were predicted to have lower math grades than their female counterparts at similar levels of afterschool engagement. Race / ethnicity, the third covariate was not significantly associated with any other variable.

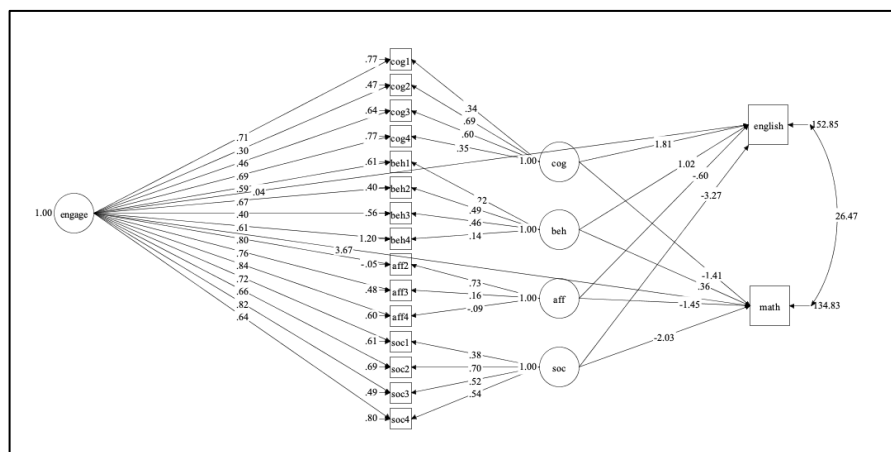


Figure 2. Final Structural Model of Academic Achievement

Engagement and Youth Development

The four factor model of PYD was first run in the SEM framework as it provided the best fit for the PYD data: CFI = .99, TLI = .99, SRMR = .06, and RMSEA = .01. In this factor structure, the competence factor was dropped as it was found to be unreliable ($\omega = .25$; $H = .42$). However, due likely to sample size limitations, this model did not converge in the SEM framework. Given this, I then ran the one factor model of PYD in the SEM framework to investigate the relationship between engagement and a composite score of PYD. Though this model does not demonstrate the best fit: $\chi^2 = 196.58$ ($p < .01$), CFI = .66, TLI = .60, SRMR = .10, and RMSEA = .09, it provides preliminary evidence to answer this research question. In contrast with the hypothesis, there were no significant relationships between global engagement ($\beta = 1.44$, *ns*), cognitive engagement ($\beta = 0.70$, *ns*), behavioral engagement ($\beta = 0.33$, *ns*), affective engagement ($\beta = 0.69$, *ns*), social engagement ($\beta = -0.47$, *ns*) and the composite score of PYD. Results suggest that students' experiences of afterschool engagement may not be related to their overall positive youth development in this sample.

Discussion

Engagement is theorized to be a critical factor related to afterschool outcomes (Ehrlich et al., 2017; Fredricks et al., 2014). However, the lack of consistency in the measurement of afterschool engagement creates confusion in the field around students' experiences of engagement as well as outcomes related to afterschool engagement (Fredricks et al., 2017; Lester, under review). This study addresses this gap by validating a measure of afterschool engagement that includes all four hypothesized dimensions of engagement, and exploring the relationship between engagement, academic achievement, and youth development.

Dimensions of Engagement

Middle school students in this sample report being highly engaged in their afterschool space, suggesting that afterschool programs can affectively, behaviorally, cognitively, and socially engage the students they serve. The presence of high levels of cognitive engagement highlights how the informal educational context of an afterschool program can support student learning and cognition (Kauh, 2011; Mahoney et al., 2005). Additionally it is possible, that given the curricular restraints of formal schooling, the afterschool space allows students to cognitively engage in content that they are not otherwise exposed to such as music mixing, coding, and the development of financial literacy. In this way, afterschool programs can serve as an addendum to school day instruction.

The addition of the social dimension of engagement is novel to the engagement literature at large, but particularly relevant to afterschool spaces where social ties to peers and staff have been reported as drivers to participation decisions (Akiva & Horner, 2016; Lester, paper 2). Further, the social and the affective dimensions of engagement are critical to understanding how programs can support adolescents given the importance of peers and increased autonomy in afterschool decision making during adolescence (Akiva & Horner, 2016; Denault & Poulin, 2009; Rodkin & Ryan, 2012). By investigating the presence of these two dimensions in tandem, we develop a more complete understanding of how adolescent social ties influence engagement and belonging in educational contexts.

Through this multi-dimensional framework, this study provides researchers and practitioners alike with an easy-to-administer and validated way to move beyond solely measuring students' behavioral engagement in afterschool spaces. However, it is important to note that students' experiences of engagement are best understood in a bifactor model, or as a

mixture of global engagement and the four specific dimensions: affective, behavioral, cognitive, and social. In other words, there is some experience of a global level of engagement that students have on top of the specific types of engagement. Statistically, this global factor illustrates the common variance shared across the four specific dimensions (Wang et al., 2016). Conceptually, the global factor allows us to account for the general level of engagement and more clearly investigate the four specific dimensions. This bifactor model resembles prior work around engagement in school settings (Wang et al., 2019), and in Math and Science contexts more specifically (Wang et al., 2016). This similarity in the modeling of engagement suggests that adolescent engagement experiences in afterschool spaces resemble those in more formal educational settings.

However, afterschool engagement experiences may differ from those in formal educational contexts in one critical way: affectively. In this study, the affective engagement factor did not perform as well as the other four factors, and differed from performance in other educational settings. This may, in part be due to the differences in the afterschool space at large such as the fact that students elect to participate in the program, and the activities are designed to be more engaging as they are not restricted by curricular mandates. Additionally, in this specific program, students are given the autonomy to select into classes of interest, and therefore are already inherently interested in the activities. This is important because interest is key feature of affective engagement, and the construct covered in the item that performed most poorly in the affective factor (factor score = -0.11). Taken these contextual differences into consideration, the items developed by Wang and colleagues (2019) to measure affective engagement may be limited in their ability to accurately do so in the out-of-school context as affective engagement may manifest differently in this setting. In order to further disentangle this affective factor of

engagement, future research should explore the affective experiences of engagement for middle school students participating in a variety of afterschool activities.

Outcomes Related to Afterschool Engagement

Results related to Math outcomes from this sample are in alignment with prior research, suggesting the presence of a relationship between student engagement and increases in Math grades (Kauh, 2011; Mahoney et al., 2005). Taken together, literature in the field is advancing the notion that afterschool engagement supports students' STEM achievement. Surprisingly, results suggest that older students are predicted to have higher Math achievement despite evidence suggesting adolescents have decreased motivation for STEM related fields (Morgan et al., 2016). This finding may be explained by the lack of curricular restraints in the afterschool context, which allows students to be exposed to novel and engaging STEM related content, supporting adolescent interests. For example, instead of focusing specifically on the development of coding skills, the afterschool space provides opportunities to implement these skills for video- and real life game design. Anecdotally, the Starters program included various STEM related activities of this type, which were highly sought after by the students. The presence and popularity of these STEM related programs might be related to the unexpected academic findings below.

In contrast with prior research, the hypothesized relationships with English grades and PYD were not found within this sample (Sloper, 2016; Zeldin et al., 2016). These results may be related to a few limitations within the study, as well as the design of this particular afterschool program, which provided more dynamic STEM programming. Depending on the design and intended outcomes of each program, afterschool programs can differentially impact a variety of student outcomes. As such, though most programs are developed to provide wrap-around

support to students, they may not all impact each desired outcome, or may do so incrementally throughout the year. To further investigate these findings, future research should consider if engagement over time is related to English grades or PYD.

Limitations and Future Directions

Results from these analyses should be interpreted with caution given that prior achievement and PYD were not accounted for in the structural equation model. As such, results suggest that there is a relationship between student engagement and Math achievement. Future research should approach investigating causality of this relationship by accounting for prior measures of student outcomes, or through randomized controlled trials. Additionally, the moderate size of this sample created limitations around most appropriate analyses, and limited the full investigation of the PYD scores. As such, this work should be replicated with a larger sample size to fully understand the relationship between engagement and PYD. Future research with a larger sample size should also investigate how students from different identity categories experience afterschool engagement across these five dimensions. Lastly, this research was conducted in a low-income community with a sample of mostly minority students. While this sample reflects the population that many afterschool programs serve, future research should investigate if this scale is psychometrically sound to be implemented with populations of youth who differ from this one.

Contributions

Despite these limitations, this research provides a validated and simple approach to understanding the facets of student engagement in afterschool programs. It extends previous afterschool literature by providing evidence of each of the four hypothesized dimensions of engagement, being the first time all four dimensions have been investigated in the afterschool

context (Lester, under review). Additionally, it extends engagement literature by confirming a bifactor model in the afterschool context, suggesting the presence of a global engagement factor in informal educational settings. Further, this work continues to reveal the potential benefits of engagement on student STEM achievement, and highlights future directions of the investigation of other adaptive student outcomes. Programmatically, results highlight the importance of developing programs that support each of these dimensions of engagement as well as measuring each dimension to provide a full understanding of adolescent engagement experiences.

Journal Selection

This article will be submitted to *Youth & Society*. *Youth & Society* is particularly interested in social and contextual factors that influence the healthy development of adolescents between 10 and 24 years of age. Given this research is focused on middle school students in the context of afterschool programs, it seems to fit nicely within their research interests.

Additionally, they publish both quantitative and qualitative articles, and have a history of interest in the afterschool setting. A recent publication (Córdova et al., 2019) used similar methodologies as I have here. The impact factor of the journal is 2.13, and this manuscript has been formatted to reflect their journal requirements.

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Manuscript 2

Afterschool Engagement:

A Mixed Methods Approach to Understanding Profiles of Youth Engagement

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Abstract

Student engagement in afterschool programs is a growing area of interest for both researchers and practitioners. Though there is an emerging body of research investigating this construct, we lack an understanding of how engagement differs by individual student characteristics, and little is known about the sources or barriers of engagement in this context. This mixed methods investigation used latent profile analysis and semi-structured focus groups to explore student level differences in engagement and sources and barriers of engagement for a sample of under-represented minority students who regularly participate in an afterschool program. Latent profile analyses revealed three engagement profiles: *moderately engaged*, *affectively engaged*, and *disengaged*. Reported sources (content, friends, etc.) and barriers (student behavior, boring content) differed by engagement profile. The results provide a comprehensive understanding of individual student engagement in afterschool programs, and are relevant to practitioners who desire to promote engagement in their programs.

Keywords: *engagement; afterschool; latent profiles; sources; barriers*

As a nation, we spend billions of public and private dollars on programs that serve our youth during afterschool hours (Parsad & Lewis, 2009). The goals of these afterschool programs are multifaceted; designed to provide safe afterschool spaces, reduce problem behavior, which spikes during afterschool hours (Riggs & Greenberg, 2004), and promote student development (Durlak et al., 2010). Evidence suggests that afterschool programs have in fact accomplished these goals as participation is associated with increases in student achievement (Durlak et al., 2010; Lauer et al., 2006), and decreases in problem behavior (Durlak et al., 2010). Given this, one could argue that our billions of dollars are well spent. However, research has suggested that the influence of afterschool programs on youth development is often dependent upon youths' active participation in a program (Vandell & Pierce, 1999), and some scholars have found programs to be minimally impactful on student outcomes (Kremer et al., 2015; Zief et al., 2006). This is concerning because evidence suggests that programs struggle to recruit and maintain youth participation (Anderson-Butcher 2005; Weiss et al., 2005) particularly with secondary students (Carver & Iruka, 2006) and students from low-income communities (Mahoney et al., 2009). Thus, afterschool programs across the nation are seeking answers to the question: How do we keep all youth engaged in high-quality programs?

Theoretical Background

Hypothesized as a necessary component to promoting student level outcomes (Ehrlich et al., 2017; Weiss et al., 2005), student engagement has increasingly been a variable of interest in out-of-school contexts for researchers and practitioners alike. At base level, engagement is defined as a student's active participation in an afterschool activity. More than just showing up daily, engagement necessitates consistent effort, attention, and persistence in program activities. However, there is no commonly accepted definition of student engagement.

As such, engagement has been conceptualized and measured in a variety of ways in afterschool program literature (Fredricks et al., 2017; Lester, under review). For example, some studies have conceptualized engagement as solely behavioral, using observational tools to report students' on-task behavior or effort (Pechman & Markze, 2003). Other studies have conceptualized engagement as a mix of behavioral, cognitive, and emotional dimensions, relying on student reports (Sloper, 2016). Thus, not only is there inconsistency in the overarching conceptualization of engagement, but also in the dimensionality of the construct.

This inconsistency makes it difficult for researchers to draw any comparisons across studies or make larger conclusions about student engagement in afterschool programs. As such, scholars have recently called for the adoption of a theoretical framework to ground investigations in common conceptualizations of engagement (Fredricks et al., 2004; Fredricks et al., 2014; Fredricks et al., 2017; Lester, under review). The underlying goal of this push is to measure student engagement in ways that are aligned, allowing new research to build off of the pre-existing knowledge base.

Dimensions of Engagement. One emerging theoretical framework of engagement is Fredricks and colleagues (2016) multi-dimensional framework which suggests engagement consists of affective, behavioral, cognitive, and social dimensions that comprise an individual's commitment or investment in an activity. Behavioral engagement is a student's active participation in an activity, including their attendance, effort, concentration, and on-task behavior (Bartko, 2005; Fredricks et al., 2004). Scholars have suggested that behavioral engagement is the first step youth must take to achieve positive outcomes such as academic achievement and retention (Finn 1989, 1993; Fredricks et al., 2004). Cognitive engagement, on the other hand, is similar to investment in an activity or learning, and involves exerting the necessary effort to

understand complex ideas and master challenging skills. In this way, cognitive engagement incorporates aspects of motivation, effort, and persistence. Finally, affective engagement is the positive and negative emotions experienced during an activity that have the potential to create a sense of belonging in an environment. Thus, affective engagement encompasses emotions as well as interest and values.

Recently, scholars have advocated for the inclusion of a fourth type of engagement into this framework: social engagement. Social engagement is commonly defined as the quality of student's interactions with peers and adults (Wang et al., 2016). Fredricks and colleagues (2016) advocate that our conceptualization of engagement should include this social dimension, as social interactions and group work are increasingly important in education. Additionally, they found that adolescents view this social aspect of engagement as an essential part of their learning. The inclusion of social engagement is particularly relevant for early adolescents as their social interactions with peers are becoming increasingly important to them (Rodkin & Ryan, 2012). Given this, students may be more likely to engage in afterschool spaces that foster these social interactions. Lester (study 1) was the first study to adopt this framework in its entirety, studying all four proposed dimensions of engagement in afterschool programs. This study expands upon that work by investigating individual differences in these four dimensions of engagement.

Individual Differences in Engagement. There is limited and mixed research that investigates the links between demographic factors and engagement in afterschool programs. A qualitative study conducted by Dawes and Larson (2011) reported finding no thematic differences in youth' engagement by gender, age, or race/ethnicity. Conversely, research by Akiva and colleagues provide some evidence of age and gender differences, suggesting that

younger youth and females may experience higher levels of engagement than their peers (Akiva et al., 2014; Akiva et al., 2011). It is important to also consider these mixed results in light of the inconsistent conceptualizations and operational definitions of engagement, which continue to complicate findings in the engagement literature. For example, if social engagement is included in the conceptualization of engagement; we may actually expect to see older youth reporting higher levels of social engagement given their proclivity towards the development of social ties (Rodkin & Ryan, 2012).

However, despite the limited and mixed results within engagement literature, broader participation literature investigating intensity and duration of involvement is useful in considering potential individual differences in program engagement. For example, evidence consistently demonstrates that attendance in programs decreases with age as youth have more autonomy in their decisions of how to spend their time afterschool (Akiva & Horner, 2016; Denault & Poulin, 2009). Additionally, ample evidence suggests that minority students tend to participate in afterschool programs at lower rates than their non-minority peers (Greene et al., 2013; Theokas & Bloch 2006; Wimer et al., 2006). As such, it is hypothesized that similar trends will surface in this investigation of engagement, given its close association with attendance and participation. The goal of this work is to provide evidence that begins to answer the calls of scholars for more research “that explores how the combination of individual characteristics and program characteristics jointly may impact engagement over time” (Greene et al., 2013, p. 1569). Additionally, by employing Fredricks and colleagues’ (2016) multi-dimensional framework of engagement this study provides initial evidence of individual differences in the four factors of engagement and adds to the field’s knowledge about the general level of engagement.

Profiles of Engagement. One emerging methodology used to investigate individual differences is latent profile analysis. Latent profile analysis takes a person centered approach to understanding differences as opposed to the typical variable centered approach that aggregates data. In other words, instead of using averages of individual variables, latent profile analysis allows each person to be classified in a profile based off of their individual scores, more clearly representing true sample characteristics. Though no prior work has been conducted using latent profile analysis with students' afterschool engagement, various studies have investigated early adolescents' engagement in this manner. For example, Bae and DeBusk-Lane (2019) explored middle school students' Science engagement using a series of latent profile analyses over time. They identified five engagement profiles, differentiating students' experiences in Science classrooms. Similarly, Wang and Peck (2013) conducted latent profile analysis to explore adolescents' behavioral, cognitive, and emotional engagement in school, finding that the five profiles of student engagement differentially predicted students' educational and psychological functioning. As such, person-centered approaches such as latent profile analysis can prove useful in providing a better understanding of individual differences particularly when exploring multi-dimensional motivational constructs such as engagement. For this reason, latent profile analysis is conducted to understand individual differences in afterschool engagement. This work extends the current knowledge base by providing the first glimpse into afterschool engagement profiles.

Experiential Differences in Engagement. An additional point of interest is how students' experiences in afterschool programs may relate to their engagement level or affect their decisions to continue engaging. Fredricks and colleagues (2004) point out that a limitation in engagement literature is that measures often fail to distinguish a source or target of engagement. Measures often provide a general understanding of engagement without providing evidence on

the root causes of these feelings of engagement. We therefore lack an understanding of why youth choose to engage in programs. However, the literature on participation can once again provide preliminary evidence on sources of engagement. Evidence suggests that youth choose to participate in afterschool programs mainly because of the program content and the relationships they build with individuals in the program (Greene et al., 2012). In fact, one of the most commonly reported reasons for participating or choosing to quit a program is youth interest in the content (Greene et al., 2013). Fredricks and colleagues (2010) provide evidence of the importance of the content in their qualitative work with youth participating in Boys and Girls clubs. Results of interview questions around attendance decisions highlight the importance that late elementary and middle school students place on fun program activities as a primary reason for continued attendance. Another study conducted with youth attending Boys & Girls Clubs suggested that program activity was reported as the primary motivating factor, followed by friends and relationships (Loder & Hirsch, 2003).

Relationships, whether with program staff or peers seem to be motivating factors for continued attendance in afterschool programs. Specifically, peers have the potential to contribute to adolescents' preliminary attendance choices as well as choices for continued attendance (Akiva & Horner, 2016); which is not surprising given the increased importance of peers during adolescence (Rodkin & Ryan, 2012). Similarly, relationships with program staff are reported as a critical factor to youth participation (Greene et al., 2013); as well as the effectiveness of afterschool programs (Deutsch & Jones, 2008; Hirsch, 2005). Thus, the relationships that program staff foster with youth, and help to facilitate between youth can be viewed as drivers to attendance decisions.

In their investigation of youth decision-making about attendance in afterschool programs,

Akiva and Horner (2016), in line with previous research, report content and relationships as important factors in youth decision-making processes. Their results also highlight the importance of two additional attendance drivers: personal growth and staying out of trouble. Given the emergence of these two new drivers, Akiva and Horner (2016) suggest that future work should further investigate these drivers, “particularly because previous studies about low-income and minority youth have found that participants attend to support their own personal growth and development.” (p. 290).

The Present Study

This study builds upon current work to address the gaps in literature around adolescent engagement in afterschool programs. For one, the study is designed to answer Greene and colleagues’ (2013) call for more clarity around the influence of individual differences on engagement and Akiva and Horner’s (2016) call for an investigation of their newly suggested drivers of youth participation. Additionally, this study extends beyond these calls to explore engagement profiles in afterschool programs and investigate youth reported barriers to engagement. Work by Fredricks and colleagues (2010) suggests that while elementary school students report not participating because “their parents did not have to work or they had other family obligations;” middle school students reported different barriers such as other programming, sports, babysitting, or helping siblings (p. 376). Thus, I anticipate that reported barriers between secondary students will also vary, especially considering that many secondary students are making their own decisions about attending programs (Akiva et al., 2014).

The goal of the current study is to understand youth engagement differences as well as to explain the sources of this engagement using adolescents’ voices and perspectives. To accomplish both of these goals I employ a mixed methods design. Mixed methods designs

emphasize the collection and integration of two forms of data (quantitative and qualitative) to provide a more thorough understanding of a research problem than possible by one approach alone (Creswell & Plano Clark, 2011). In this study, both the quantitative engagement survey as well as the qualitative focus groups are needed to understand students' experiences of engagement in their programs and identify perceived sources and barriers to engagement decisions. While the quantitative strand alone provides an understanding of student profiles of engagement in afterschool programs, the qualitative strand adds a pragmatic touch by seeking to illuminate student decision-making processes. Neither the quantitative nor the qualitative approach alone would be able to fully explain student engagement and decision-making in afterschool programing.

Specifically, an explanatory sequential mixed methods design is used, which involved collecting engagement survey data first and then further exploring the sources and barriers to engagement with in depth focus groups. In the first, quantitative phase of the study, the Afterschool Engagement Scale was collected from middle school participants in Starters, an afterschool program in a low income school district in a large Southeastern city to understand factors related to adolescent engagement in afterschool programs. The results of this quantitative phase were then used to purposefully select participants from each quantitative profile for the second qualitative phase. The goal of the qualitative focus groups was to explore how adolescents' perspectives on the sources and barriers to engagement in after school programs differed by engagement profiles. As such, the following four research questions were investigated:

1. (Quantitative) What afterschool engagement profiles exist for middle school students participating in an afterschool program?

2. (Quantitative) Do students' individual characteristics (gender, grade, race/ethnicity) predict profile membership into engagement profiles?
3. (Qualitative) What perceived sources and barriers are related to youth engagement in afterschool programs?
4. (Mixed) Do sources and barriers to engagement differ by students' engagement profile?

Research question one used latent profile analysis to investigate students' level and type of engagement and determine if engagement profiles emerge. Although no prior afterschool engagement profile work has been conducted, prior work with middle school students' Science engagement suggests that there is variability in students' engagement experiences, and profiles do emerge to differentiate youth (Bae & DeBusk-Lane, 2019). In investigating Science engagement profiles with middle school students, Bae and DeBusk-Lane (2019) reported five profiles for 6th, 7th, and 8th grade students. As such, I hypothesized that between three and five engagement profiles would emerge. Exploration of profile membership and average characteristics of each profile allowed me to answer research question two, exploring if profile membership was predicted by individual characteristics (i.e. gender, grade level, race/ ethnicity, etc.). I hypothesized that increased grade level would predict membership in profiles of lower and more social engagement (Akiva et al., 2011; Akiva et al., 2014). Additionally, I expected that being a girl would predict membership into a higher and more socially and behaviorally focused profile. Lastly, I hypothesized that being a minority student would predict membership into a lower engagement profile (Akiva et al., 2014; Mahoney et al., 2009). Unfortunately sample limitations prohibited me from exploring engagement differences across socio-economic status (SES), but I advocate that SES is an important demographic factor that future research should investigate.

Research question three was investigated through in-depth focus groups which sought to understand youth perspectives on the sources and barriers to engaging in afterschool programs. Focus groups were conducted with a group of students from each engagement profile developed from RQ1 analyses. I hypothesized that program content (Fredricks et al., 2010; Greene et al., 2012), relationships (Akiva & Horner, 2016; Loder & Hirsch, 2003), personal growth, and staying out of trouble (Akiva & Horner, 2016) would be reported as students' primary sources of continued engagement. Though my work exploring barriers was more exploratory in nature, I hypothesized that students may report that other programming and family obligations serve as potential barriers to continued engagement in their program (Fredricks et al., 2010). Finally, research question four integrated results from both the quantitative and qualitative phases to explore how student perspectives of sources and barriers differed by engagement profiles. This was investigated by exploring students' qualitative responses by their quantitative engagement profiles. Results from this pragmatic study can be used to inform programmatic supports designed to encourage higher levels of engagement from early adolescents.

Methods

Research Context

This study was conducted in partnership with Starters, an out-of-school time system that provides middle school students with high-quality afterschool programs. Starters is currently at five of the seven middle schools in one low-income school district in a large Southeastern urban city, and serves over 600 6th – 8th grade students. During the 2019-2020 school year in which this study was conducted, the Starters school district served predominantly Black (63%) and Latinx (19%) students, and all students qualified for the federal Free/Reduced Priced Lunch Program (VDOE, 2020). Additionally, Starters

Starters provides students with a variety of afterschool activities such as enrichment classes, sports and wellness classes, while also providing snacks and dinner for each student. The program meets Monday – Friday, is optional for all students enrolled in the middle school, and provides transportation for students at the end of the day. Most classes sizes are small, and the majority of classes are held on the school campus. This nature of the programming allows students to participate in Starters even if they also participate in school based sports teams or need to stay after for remediation. Starters is designed as a blocked program in which students are given the autonomy to select into 1 or 2 blocks / classes of their choice. In this way, Starters provides students with the option of selecting into courses that interest them. Additionally, Starters participates in the regional Youth Program Quality Assessment, and therefore is identified as a high-quality program engaging in continual quality improvement processes.

Design

The explanatory sequential mixed methods design of the current study consisted of two distinct phases (QUAN→qual; Creswell, Plano Clark, Gutmann, & Hanson, 2003). In this design, the quantitative measure was used to investigate levels and types of youth engagement in Starters, as well as the individual factors related to this engagement. The results of this quantitative analysis are engagement profiles, which were used to select participants for qualitative focus groups. Qualitative focus groups were conducted with a sample of students from each of the engagement profiles, and served to further explain the quantitative results. The two phases were integrated at data collection through the selection of participants and at data analysis. The rationale for this approach is that the quantitative phase provides an understanding of different types of engagement to allow for the purposeful selection of focus group samples. These qualitative focus groups then further refine and explain the statistical results by exploring

participants' views of engagement more in depth as well as the sources and barriers they face with engagement (Creswell, 2003; Rossman & Wilson, 1985; Tashakkori & Teddlie, 1998).

Participants

Participants for the quantitative phase included a large sample ($n = 197$) of middle school students who participated in Starters. The majority of students sampled identified as Black (81.38%), and the remaining students identified as either White (17.93%) or an Other race/ethnicity (0.69%). Further, approximately 17.24% of students identified as Latinx in terms of their ethnicity. Thirty-seven percent of students reported being in the 6th grade, 38% in the 7th grade, and 23% in the 8th grade, with a mean age of 12.27 years. Most of the students sampled identified as male (54.48%).

I selected participants for the qualitative phase of the study based on a typical case sampling strategy; targeting individuals with high likelihood (greater than 80%) of profile membership from each of the engagement profiles. I implemented a stratified sampling strategy to ensure that the sample included a demographically representative group of students. The qualitative sample included a small sample ($n = 18$) of students across the three profiles. Sample demographics are depicted in Table 1.

Table 1. Student Demographics in Qualitative Sample

Demographic	Total Qualitative Sample ($n = 18$)	Moderately Engaged ($n = 7$)	Affectively Engaged ($n = 6$)	Disengaged ($n = 5$)
Grade Level				
6th	33.3% (6)	42.9% (3)	16.7% (1)	40.0% (2)
7th	22.2% (4)	14.3% (1)	50.0% (3)	0.0% (0)
8th	44.4% (8)	42.9% (3)	33.3% (2)	60.0% (3)
Gender				
Female	44.4% (8)	42.9% (3)	50.0% (3)	40.0% (2)
Male	55.6% (10)	57.2% (4)	50.0% (3)	60.0% (3)
Race / Ethnicity				
Black	88.9% (16)	71.4% (5)	100% (6)	100% (5)
White	5.6% (1)	14.3% (1)	0.0% (0)	0.0% (0)
Other	5.6% (1)	14.3% (1)	0.0% (0)	0.0% (0)
Latinx	11.1% (2)	28.6% (2)	0.0% (0)	0.0% (0)

Measures

Engagement Data. The quantitative instrument is the Afterschool Engagement Survey (Lester, study 1). The scale consists of 15 items that ask students to rate, on a 5 point Likert-scale (1 = not at all like me; 5 = very much like me) how engaged they are at their afterschool program. Sample items from this scale include: “I keep trying even when I get stuck,” “I always try my best at [program name],” and “I am open to making new friends at [program name].” Good reliability and construct replicability evidence for the scale has been reported ($\omega = .70 - .89$; $H = .74 - .84$; Lester, study 1).

Demographic Data. The survey data was paired with pre-existing student demographic data such as student gender, grade, and race/ethnicity.

Focus Group Data. Multiple semi-structured focus groups were conducted in person with students from each engagement profile. Focus groups on average lasted about 20 minutes, and were conducted in a private room at one of the program sites to ensure confidentiality. Each focus group was recorded and subsequently transcribed. During transcription, pseudonyms were assigned to each participant as to mask the identity of each student and ensure confidentiality. The focus group protocol (See Appendix C), consisted of items targeting participants’ sources and barriers to engagement such as:

1. What led you to get involved in Starters?
2. What do you think is most engaging about Starters?
3. When you have decided not to participate in a session of Starters, why did you make that decision?

Procedures

Prior to data collection, students were read the assent form, and asked to verbally assent to participating in the research. Students then completed the survey as items were read aloud one at a time. Students completed the paper-pencil survey in a private room at the afterschool site during program hours. Following data entry and cleaning, participants were selected for the focus groups. Six focus groups were conducted (two per profile) during program hours in which I met with students in a private room at the program site.

Analytic Plan

Quantitative Analysis. Engagement data was merged with demographic data and cleaned using Stata 14, before being exported into Mplus 8 (Muthén and Muthén, 1998-2017) where all quantitative analyses were conducted using full information maximum likelihood (FIML) to account for missing data. Latent profile analysis was conducted using factor scores from the previously confirmed bifactor model of engagement (Lester, study 1). I estimated and inspected two through seven class models for statistical fit and theoretical interpretability (Marsh et al., 2009; Masyn, 2013; Nylund et al., 2007). Statistical fit was determined based on various fit indices including Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), and sample-size adjusted BIC (aBIC), where smaller values represented more parsimony across models (Collins & Lanza, 2013; Geiser, 2013). I also considered the Vuolto-Lo-Mendell-Rubin test (VLMR; Muthén & Asparouhov, 2012), which compares fit between the k class model and the $k-1$ model, with a significant p value suggesting that the k class model is significantly better fitting than the $k-1$ model. Finally, I examined model entropy, looking for values closer to 1, which indicate more accuracy in classifying participants into profiles. Combined with theoretical interpretability, these indicators were used to determine the most appropriate number of profiles.

Once the number of profiles was determined, each profile was examined to understand profile differences in type and level of engagement.

Following this step, RQ2 was investigated by exploring profile membership and how student demographic characteristics vary by profile. Using the R3STEP *Mplus* function, each of the demographic variables (gender, race/ethnicity, and grade) was assessed as predictors of profile membership (Morin & Litalien, 2017; Muthen & Muthen, 2017).

Qualitative Analysis. A multi-level coding process was used to analyze focus group data as a whole (Onwuegbuzie et al., 2012). This process began by generating a set of open codes through systematic readings of each transcript. I then developed a codebook using both the open codes as well as a priori codes from existing literature on drivers and barriers to student participation in afterschool programs such as content, friends, and program staff (Akiva & Horner, 2016; Greene et al., 2013; Loder & Hirsch, 2003). Following development of the codebook, I coded each of the transcripts, and wrote analytic memos throughout the coding process to allow for reflection on data and emerging interpretations. All qualitative coding was conducted using Dedoose.

Mixed Analysis. An additional level of mixed analysis was conducted in order to address the fourth research question: do sources and barriers to engagement differ by profile? During this level of analysis, I used Dedoose to quantitatively analyze the qualitative data by determining the counts and frequencies for each theme across the three engagement profiles (Onwuegbuzie & Teddlie, 2003). I then conducted ANOVA tests to investigate any potential differences in the relative salience of each theme between profiles. These analyses allowed me to draw comparisons between the profiles to highlight the essence of youth reported sources and barriers to engagement in afterschool programs (Miles & Huberman, 1994).

Results

Profiles of Afterschool Engagement

Results revealed a 3-class model most appropriately fit the engagement data according to the BIC. Fit indices for the 2 to 7 latent class solutions are presented in Table 2. Although the VLMR suggests a 4-class model, the size of the fourth profile ($n = 4$), and the strength of the BIC at the third profile provide strong statistical as well as theoretical justification for a 3-class model.

Table 2. Model fit indices for the 2-, 3-, 4-, 5-, 6-, and 7-class solutions.

Classes	AIC	BIC	aBIC	VLMR	<i>p</i> Value	Entropy
2-class model	2298.25	2350.78	2300.10	-1158.72	0.27	0.85
3-class model	2267.17	2339.40	2269.70	-1133.13	0.51	0.80
4-class model	2247.99	2339.92	2251.22	-1111.58	0.05	0.86
5-class model	2230.32	2341.95	2234.24	-1096.00	0.38	0.88
6-class model	2211.33	2342.66	2215.94	-1081.16	0.57	0.89
7-class model	2192.61	2343.64	2197.92	-1065.67	0.20	0.91

The three afterschool engagement profiles were labeled *disengaged*, *affectively engaged* and *moderately engaged* (Figure 1). The *moderately engaged* profile (all engagement factors approx. between the mean and 0.50 SD above the mean) represented the majority of the students ($n = 129$). These students were characterized with moderately high levels of global engagement, and moderate levels of all four specific types of engagement. In other words, these students were moderately engaged in the program, but not in one specific way that stood out from the others. Instead, their engagement experiences were comprised of a combination of all four specific factors. The remaining 34% of students were categorized into either the *disengaged* or the *affectively engaged* profiles. The *affectively engaged* profile (affective engagement approximately 1 SD above the mean and all other factors between the mean and 0.60 SD below the mean) represented students who experienced low levels of global, cognitive, behavioral and social engagement. However, these students were highly affectively engaged in the afterschool

space. Lastly, about 17% of the students sampled fell into the *disengaged* profile, which was characterized by moderate to low levels of engagement across all factors (affective and global engagement between 1 and 1.5 SD below the mean). These students were slightly cognitively engaged, but by and large did not report being engaged in the program across any other factor. As such, these engagement profiles varied both in level of engagement as well as the specific engagement factors. Figure 1 depicts the average factor scores across each engagement profile.

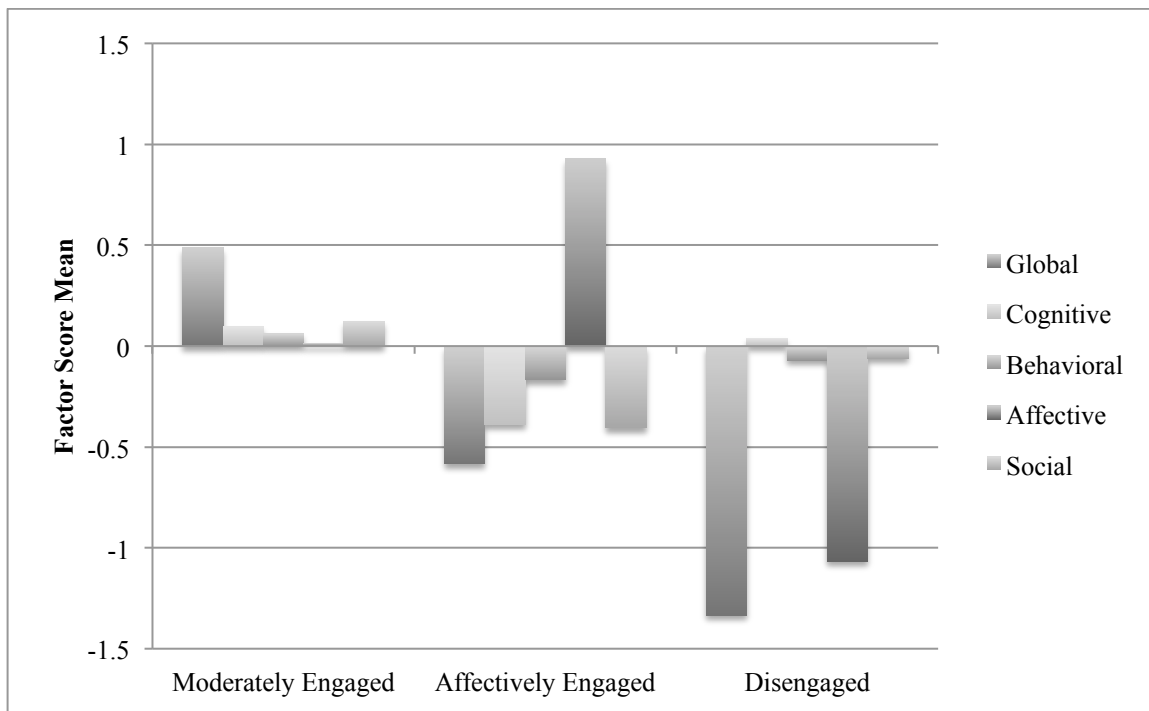


Figure 1. Three class profile solutions

Student Characteristics and Profile Membership

Student demographic characteristics by profile are presented in Table 3. None of student characteristics including grade level, gender, race, and ethnicity significantly predicted profile membership in this sample. As demonstrated in Table 3, student characteristics varied widely across profiles.

Table 3. Percent Demographics by Engagement Profiles

Demographic	Moderately Engaged	Affectively Engaged	Disengaged
Grade Level			
6th	40.0% (52)	25.8% (8)	36.1% (13)
7th	36.2% (47)	54.8% (17)	30.6% (11)
8th	22.3% (29)	19.4% (6)	27.8% (10)
Gender			
Female	31.5% (41)	45.2% (14)	30.6% (11)
Male	42.3% (55)	32.3% (10)	38.9% (14)
Race / Ethnicity			
Black	58.5% (76)	70.1% (22)	55.6% (20)
White	14.6% (19)	6.5% (2)	13.9% (5)
Other	0.8% (1)	0% (0)	0% (0)
Latinx	15.4% (20)	3.2% (1)	11.1% (4)

Perceived Sources of Engagement

Key sources of students’ engagement in Starters resembled the aforementioned drivers of participation such as content, friends, fun, and family. Below each of these four key sources is explained and examples provided.

Content. Content was highlighted as a key source of student engagement across all focus groups. Students explained the various courses that initially drew them to engage in Starters such as sports classes, cooking classes, jump rope, and drumming. Many students explained that Starters is “fun because you have activities you would be interested in that you can do, like gym kind of things.” In this way, students demonstrate how Starters allows them to develop skills in activities they are already interested in, supporting their individual interests outside of school. Additionally, students highlight how engaging in the Starters content and courses exposes them to new activities. For example, when asked about the most engaging part of Starters, one student responded, “...going to your classes and having fun, and learning new things.” Thus, content served as a source of engagement in that it allowed students to further develop their individual interests and learn new skills and activities.

Friends. Students across the focus groups also pointed to their friends as a key source of engagement. Friends both piqued students' interests in Starters, and were the reason many students reported continuing to engage. For example, when asked what led them to get involved in Starters, students responded that "my friend was telling me about it," or "my friend told me about it." Similarly, students suggested that seeing their friends was a contributing factor to their day-to-day engagement decisions given that they interact with friends at Starters whom they may not get to see in school. In this way, social connections with other students served as a rationale to not only begin engaging but also to persist.

Fun. Students consistently highlighted the fun environment as rationale for their continued engagement in Starters, explaining how it felt different than school. One student suggested it was different because "we do fun stuff" at Starters, and another stated that "there's fun things here to do and learn... because you're doing stuff that you love." Therefore, while students conceptualize this afterschool space as a learning environment, the fun nature of the activities and space keeps them engaged. This sentiment was echoed across students, and perhaps best exemplified in the following reflection: "they are fun. You have fun here. You get to learn new things. There's more friends you can make. You meet new people. You get to have a relationship with the counselors."

Family. Students' families served as the last key source of engagement, prompting initial engagement decisions. Students explained that their engagement in Starters was often prompted by a parental figure or sibling. For example, one student explained that his mother influenced his engagement: "She said I should get out and that I can't be at home every day." Similarly, other students reported that their siblings encouraged them to engage. When asked about their initial engagement decision, one student stated, "what led me to do it was my sister and because I really

had nothing to do at home except for watch TV. And that gets boring. So my sister, she was like, ‘You should do it,’ because my sister was here for middle school.” In this way, family members served as sources of initial engagement decisions.

Perceived Barriers of Engagement

Two key barriers emerged from student reflections on what makes it difficult for them to engage in Starters, or why they have previously taken a break from engaging. These two barriers are explained and examples provided below.

Boring Content. In direct contrast with the source of engagement, students expressed how the content of the programs could also serve as a barrier to their desire to actively engage. When asked about a time that they have intentionally decided not to engage in Starters, students stated that “it was kind of boring” suggesting that “it starts to get boring because you’re staying inside, not going outside or doing anything, and then you’re just here and doing nothing.” These responses demonstrate that while content may be an initial source of student engagement, over time students may begin to lose interest in the class, leading to a desire to disengage or even stop participating.

Student Behavior. Student behavior emerged as a barrier to engagement across almost all focus groups. When asked what makes it difficult to engage in Starters, students reported “some of the irritating people,” and “the kids... because they’re all over the place.” Thus, students point to their peers’ disruption as a barrier to their own personal engagement in activities. In a few cases, this barrier emerged as clear examples of bullying that made students uncomfortable with fully engaging in specific classes. For example, one student explained:

“I’m not very good at basketball because every time I attempt to try and make a basketball shot, people just straight-off say something like, ‘you don’t [know] how to play basketball, or do you know how to play basketball? Why can’t you make a three-point shot or a two-point shot?’”

In this example, this student highlights how he feels out of place in basketball class given the other students’ comments about his ability to play. He went on to discuss how these comments make him not want to engage in basketball, or Starters in general.

Sources and Barriers Across Engagement Profiles

Though none of the sources and barriers to engagement differed in statistically significant ways by profile, descriptive differences across profiles are evident in Figure 2 below. For example, students in the *moderately engaged* profile more frequently reported all of the sources to engagement than their peers across the other two profiles, highlighting their proclivity towards engagement in Starters. Additionally, students in the *disengaged* profile more frequently reported student behavior as a barrier than their peers, suggesting that student talking and misbehavior may differentially influence how students experience engagement in the afterschool context.

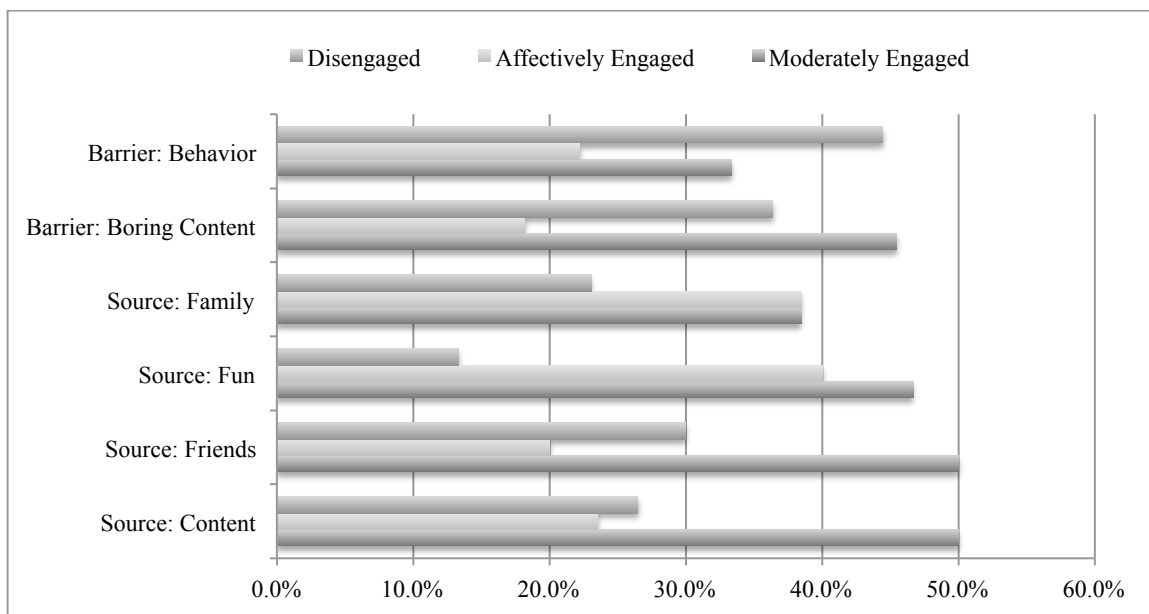


Figure 2. Sources and Barriers by Profile

New sources and barriers also became salient when qualitatively investigating each individual profile. For example, though students in the *moderately engaged* profile similarly reported content, friends, and fun as sources of engagement, they also highlighted their relationships with staff. When asked about their engagement decisions, students in this profile more commonly shared that “the teachers make it exciting.” Others echoed this sentiment stating that one of the enticing aspects of Starters is that “you get to have a relationship with the counselors,” and by highlighting their favorite staff members that support their desire to engage. These responses align with their more moderately positive levels of social engagement, suggesting that the social aspects of Starters may serve as an influential factor of their engagement experiences.

Discussion

Active participation and engagement in afterschool programs has been linked to positive academic and developmental outcomes for youth (Durlak et al., 2010; Lester, study 1). As such, it is important to consider students’ engagement experiences in afterschool spaces, and how to appropriately foster them. To date, no research has investigated profiles of student engagement in this context, and we know little about the sources of students’ engagement decisions (Fredricks et al., 2004). This research addresses these two gaps, providing an initial look at profiles of adolescents’ affective, behavioral, cognitive, social, and global engagement in out-of-school settings, and highlighting youth voices on what motivates them to engage.

Students’ Afterschool Engagement Profiles

Aligning with prior profiles of adolescent engagement (Bae & DeBusk-Lane, 2019), a three-profile solution emerged to best represent students’ engagement experiences in the afterschool context. These profiles varied in both engagement level as well as engagement type.

In other words, the engagement profiles differed in terms of the extent to which students engaged afterschool (high to low) as well as how they engaged (behaviorally, affectively, cognitively, and socially). For example, the *moderately engaged* profile represents the typical engagement experience of students, which is largely positive across all factors. The size of this profile aligns with other profile work with adolescents (Bae & DeBusk-Lane, 2019; Wang & Peck, 2013), suggesting that most students are moderately engaged in their formal or informal academic settings. Students in this profile report average levels of the four specific dimensions of engagement and above average levels of global engagement, suggesting that their engagement experiences are consistent across the different types of engagement.

The *affectively engaged* profile demonstrates a new profile that may be unique to the afterschool context. This profile represents students whose engagement experiences are largely negative, but affectively very positive. Given that the afterschool context is designed to be fun and cultivate a sense of belonging, it follows that students might experience higher levels of affective engagement in this context than in formal educational settings, which are restricted by curricular mandates. This affective engagement and sense of belonging are particularly relevant for adolescents, as school connectedness begins to decline (Loukas et al., 2017), and they gain more autonomy in their afterschool decision-making (Akiva & Horner, 2016; Denault & Poulin, 2009). In this way, school-based afterschool programs may support students' sense of belonging at school. Therefore, despite the lower levels of social engagement present in this profile, students still cultivate a sense of belonging in the environment that allows them to have fun, feel happy, and maintain their interest. As such, designing a program that affectively engages adolescents may be particularly important for programs seeking to engage more middle school

aged students. Youth reported sources of engagement could be particularly helpful in supporting these efforts.

Finally, the *disengaged profile* represents a small percentage of students who report low levels of afterschool engagement. These students report being particularly affectively and globally disengaged in the afterschool space. Similar profiles have emerged in adolescent engagement work (Wang & Peck, 2013), suggesting that a small percentage of youth are minimally engaged in their educational contexts. This profile is particularly interesting given that these students continue to participate in the program despite their low-levels of engagement. This differs from prior in-school engagement work because participation in afterschool programs is not mandatory, yet these students continue to not only show up, but also affectively engage. This trend suggests that some other factor is likely motivating their decision to participate. Understanding the sources and barriers to engagement for these specific students can support efforts towards continued participation and to more fully promote their engagement.

Somewhat unexpectedly, affective engagement and global engagement were the key latent constructs that differentiated the three profiles, while the expected prominence of the social engagement factor did not emerge. This may, in part be related to contextual factors related to engagement experiences in the out-of-school context. For example, social engagement may not have emerged as clearly due to the fact that Starters took place at the middle school site as opposed to a community building, and students were therefore limited to working and spending time with the same peers that they attend classes with. If conducted at a community based afterschool program, the social engagement factor may manifest differently as students may have more of an opportunity to make new friends and spend time with students they have not seen all day. Additionally, the importance of affective engagement is likely due to the

variability in the specific items used to measure engagement, and their relevance in the afterschool context. For example, using this scale, affective engagement encompasses fun, happiness, and interest; three engagement experiences that manifest differently in an afterschool setting than they do in formal educational settings. Given that students have the autonomy to 1) attend starters only if they are interested, and 2) elect into the programs/classes that most interest them, it follows that interest may be a particularly skewed indicator of affective engagement. In light of these contextually related discrepancies, future research should continue to disentangle affective and social engagement in other out-of-school contexts by measuring engagement across various afterschool activities and considering different items for the measurement of affective engagement.

Individual Differences Predicting Profile Membership

Contrary to the hypotheses, results did not reveal that any student level characteristics predicted profile membership in this sample. This finding is in contrast with prior engagement work suggesting that engagement levels differ by gender and age (Akiva et al., 2014; Akiva et al., 2011). These results may be partially due to the implementation of a new and more comprehensive framework of engagement, or due to the age restrictions of the particular sample of students. However, it is important for programs to consider if they are designed to engage students across demographic groups and differing intersectional identities. Future research should continue to investigate these individual differences through implementation of this specific framework of engagement. With this type of consistency in conceptualization, researchers will begin to clear up the current mixed findings.

Sources and Barriers of Engagement

In alignment with existing attendance drivers, class content, friends, fun programming, and family were all reported as sources of students' engagement (Akiva & Horner, 2016; Fredricks et al., 2010; Loder & Hirsch, 2003). These sources prevailed across engagement profiles and were widely reported by a multitude of students, providing some tangible ways that programs can promote increased engagement. For example, programs can implement family outreach to ensure that parents are aware and supportive of continued program engagement. Additionally, programs can provide students with leadership opportunities in which they develop and implement student engagement outreach to their peers. Through outreach efforts such as these, programs can build on family and friends as engagement sources, further promoting student engagement decisions. Additionally, programs should regularly garner student voices to inform them of what content they would like to see covered, what can make the program more fun, and how to sustain engagement over the school year.

Two key barriers emerged from student reports: boring content and student behavior. This investigation was largely exploratory in nature, but provides practical evidence of what keeps youth from actively engaging in their afterschool spaces. These findings are particularly important for programs that serve early adolescents who have more autonomy in their decisions to stay after school (Akiva & Horner, 2016; Denault & Poulin, 2009). In these instances, programs should rely more heavily on youth reports of what promotes and hinders their desire and ability to engage in programming. In light of these findings, programs should find ways to keep the content fresh and exciting throughout the school year, garnering youth perspectives to ensure buy-in. Additionally, they should implement effective behavior management systems,

particularly if they hope to sustain engagement in middle school where bullying increases (Pellegrini, 2002).

Sources and Barriers by Profile

Mixed findings provide a nuanced perspective on how programs can foster engagement for students with different afterschool experiences. For example, students in the *moderately engaged* profile reported that their relationships with staff served as an additional source of engagement. In alignment with prior research, this finding highlights the role that staff can play in student decision making, and also provides further evidence of the importance of student-staff relationships (Greene et al., 2013; Hirsch et al., 2011). However, the emergence of this source with the *moderately engaged* profile suggests that student-staff relationships may not be as impactful for students with other engagement experiences. Future work should investigate how this particular source of engagement manifests across profiles, and how staff can play a role in promoting engagement for all profiles, particularly those less inclined to engage.

Additionally, mixed analyses suggest that student behavior may be a particularly important barrier to address for students in the *disengaged profile*, or those with lower levels of engagement more generally. It is possible that students in this profile represent those who are more ostracized from their peers in the afterschool setting, and may be more impacted by disruptive student behaviors. To account for this potential, programs should not only implement quality behavior management systems, but also implement supports to regularly check in on students who may appear to be disengaged from programming.

Limitations

A particular limitation of this work is the moderate sample size, which is relatively small in light of prior latent profile work. Nevertheless, the study was sufficiently powered, and results

likely provide an accurate depiction of student engagement profiles. However, future work should replicate this study with a larger sample size to further investigate if student characteristics predict profile membership and if profiles are related to student outcomes. Additionally, given programmatic time restraints, the student focus groups were generally short, limiting the potential level of in-depth reflection. Future qualitative research should continue to investigate these sources and barriers in ways that allow students to expand on their experiences with each. Lastly, the findings of this research are relevant to the specific afterschool program and low-income mostly-minority community that the research was conducted in. As with all research, the level of generalizability to other samples and/ or programs is questionable. As such, future research should be conducted in new samples, including community based program sites, and in individual program classes to provide a more nuanced look at momentary engagement experiences.

Implications and Conclusions

Despite these limitations, this research extends the field by being the first to investigate profiles of students' afterschool engagement, specifically understanding differences in students' engagement experiences. These profiles generally align with prior engagement work suggesting that engagement experiences may look similar in formal and informal educational contexts. Further, this study is the first to explore student sources and barriers of engagement, as opposed to basic participation, providing youth-centric evidence of how to promote engagement. Additionally, this work extends our understanding of how the four dimensions of engagement manifest in informal educational settings, being the one of the first to consider the crucial role of social engagement in the out-of-school context. Finally, this work has explicit impacts on programs because it 1) provides a clear depiction of student engagement experiences that are

likely present at their sites, and 2) highlights youth voices, providing evidence on how to support early adolescents' engagement in afterschool spaces. Building from these findings, researchers can further disentangle student level differences in engagement while practitioners implement initiatives that maintain the continued engagement of early adolescents.

Journal Selection

Following completion and defense of this dissertation, this article will be submitted to *Applied Developmental Science*. Given its applied bend, this journal is focused on developmental research that has explicit impacts on what practitioners do. The nature of this study is to identify youth-driven rationale of engagement in programs, which will support programmatic decision making with middle school students in mind. Additionally, this journal publishes both rigorous quantitative and qualitative research, and has a history of publishing research on youth participation in programs (i.e., Akiva & Horner, 2016). Taken together, *Applied Developmental Science* seems to be an appropriate outlet for this work, and has recently published a similarly designed Latent Class Analysis (McDermott et al., 2018). The 5-year impact factor of the journal is 2.026.

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Appendix A
Afterschool Engagement Survey

Please respond to the following sentences based on your experiences at Starters.
Please circle the right number.

1 = Not at all like me 2 = Not like me 3 = Somewhat like me 4 = Like me 5=Very like me

I look over my Starters work and make sure it is done well.	1	2	3	4	5
I keep trying even when I get stuck.	1	2	3	4	5
I work hard in the face of challenges / difficulties at Starters.	1	2	3	4	5
I figure out what I did wrong when I make mistakes at Starters.	1	2	3	4	5
I always try my best at Starters.	1	2	3	4	5
I contribute to what we are doing at Starters.	1	2	3	4	5
I get involved in Starters activities.	1	2	3	4	5
I ask questions when I don't understand.	1	2	3	4	5
I have fun at Starters.	1	2	3	4	5
I am happy at Starters.	1	2	3	4	5
I am proud to go to Starters.	1	2	3	4	5
I am interested in what we are learning at Starters.	1	2	3	4	5
I enjoy working with peers at Starters.	1	2	3	4	5
I am open to making new friends at Starters.	1	2	3	4	5
I enjoy spending time with peers at Starters.	1	2	3	4	5
I work with other students and we learn from each other.	1	2	3	4	5

Appendix B

Positive Youth Development Survey

Please circle your current grade:

6th

7th

8th

FILL IN ONLY ONE CIRCLE FOR EACH PAIR OF SENTENCES.

	Really True for me	Sort of True for me		BUT		Sort of True for me	Really True for me
(a)	<input type="radio"/>	<input type="radio"/>	Some teenagers would rather play outdoors in their spare time.	BUT	Other teenagers would rather watch T.V.	<input type="radio"/>	<input type="radio"/>

	Really True for me	Sort of True for me		BUT		Sort of True for me	Really True for me
1.	<input type="radio"/>	<input type="radio"/>	Some teenagers have a lot of friends.	BUT	Other teenagers don't have very many friends.	<input type="radio"/>	<input type="radio"/>
2.	<input type="radio"/>	<input type="radio"/>	Some teenagers do very well at their class work.	BUT	Other teenagers don't do very well at their class work.	<input type="radio"/>	<input type="radio"/>
3.	<input type="radio"/>	<input type="radio"/>	Some teenagers feel that they are better than others their age at sports.	BUT	Other teenagers don't feel they can play as well.	<input type="radio"/>	<input type="radio"/>
4.	<input type="radio"/>	<input type="radio"/>	Some teenagers are happy with themselves most of the time.	BUT	Other teenagers are often not happy with themselves.	<input type="radio"/>	<input type="radio"/>
5.	<input type="radio"/>	<input type="radio"/>	Some teenagers do things they know they shouldn't do.	BUT	Other teenagers hardly ever do things they know they shouldn't do.	<input type="radio"/>	<input type="radio"/>
6.	<input type="radio"/>	<input type="radio"/>	Some teenagers really like their looks.	BUT	Other teenagers wished they looked different.	<input type="radio"/>	<input type="radio"/>

How much do you agree or disagree with the following?	Strongly agree [5]	Agree [4]	Not sure [3]	Disagree [2]	Strongly disagree [1]
7. All in all, I am glad I am me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How important is each of the following to you in your life?	Not important [1]	Somewhat important [2]	Not sure [3]	Quite important [4]	Extremely important [5]
8. Helping to make the world a better place to live in.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Accepting responsibility for my actions when I make a mistake or get in trouble.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Think about people who know you well. How do you think they would rate you on this question?	Not at all like me [1]	A little like me [2]	Somewhat like me [3]	Quite like me [4]	Very much like me [5]
10. Enjoying being with people who are of a different race than I am.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How well do each of these statements describe you?	Not well [1]	[2]	[3]	[4]	Very well [5]
11. When I see someone being taken advantage of, I want to help them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. When I see someone being picked on, I feel sorry for them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. When I see another person who is hurt or upset, I feel sorry for them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How much do you agree or disagree with the following?	Strongly agree [5]	Agree [4]	Not sure [3]	Disagree [2]	Strongly disagree [1]
14. I get lots of encouragement at my school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. In my family I feel useful and important.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Adults in my town or city make me feel important.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How true is the following statement of you?	Always true [5]	Usually true [4]	Sometimes true [3]	Seldom True [2]	Almost never true or never true [1]
17. I feel my friends are good friends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix C

Focus Group Protocol

The purpose of this discussion is to learn more about your experiences as a student involved in the Starters after school program. The opinions and ideas that you share with me will help the people leading this program make it better in the future. In this focus group, we are interested in hearing both the good things and the bad things about your experience. We want to note that we will not share your name with anyone when we use information from this discussion.

Afterschool

1. Pretend that I'm a new kid at your school and I'm looking for something to do Afterschool. What would you tell me about Starters? What would you tell me about other activities available in your school and community?
2. What led you to get involved in Starters?
3. Who influenced your decision to get involved in Starters?
 - Probe: Do your friends go to Starters? How much did your parent or guardian want you to participate in Starters?
4. What features of Starters were initially attractive to you?
5. What makes you excited about coming to Starters each week?
 - Probe: What are your favorite parts of Starters?

Starters Engagement

1. Who typically participates in Starters?
2. When looking at other students in Starters, what are the differences between a peer who is highly engaged and a peer who is less engaged?
3. Describe what it feels like when you are really engaged in an activity at Starters. What kinds of activities do you feel like that in? How often does that happen? Describe what it feels like when you are not engaged or are bored in an activity at Starters. What kinds of activities do you feel like that in? How often does that happen?
4. What do you think is most engaging about Starters?
 - Can you tell me more about your experience with this?
5. Thinking forward, how long do you plan to continue to participate in Starters?

Barriers to Starters

1. When you have decided not to participate in a session of Starters, why did you make that decision?
2. What makes it difficult for you to come to Starters?
3. What are the reasons some of your friends don't participate in Starters?
4. If you have had friends who stopped attending Starters, can you share some of their reasons?

Improving Starters

1. Is there anything you think could improve your desire to engage in Starters?

- Probe: Any resources? Any content? Any opportunities?
- 2. Do you feel like there are leadership opportunities for you?
 - If yes -- what type? Can you explain more?
 - If no -- would you like them? What might they look like?
- 3. Do you feel like you have the opportunity to engage in a variety of activities at Starters?
 - Do you think everyone has the same opportunities to engage in these activities?

Starters Quality

1. Please describe your relationship with the staff at Starters.
 - Are you close to anyone? Do they support you? Do they listen to you?
2. Is there a class that you are really interested in at Starters?
 - What skill are you most excited about?
3. How do staff support you in developing your interests?
4. Does Starters encourage you to give back to your school / community?
 - Connect you with events going on at school or in your community?