

The Impact of *The Leader in Me* on Student Engagement and Social Emotional Skills

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Abstract

This study examined whether the implementation of *The Leader in Me* (TLIM) positively impacted grades 4-8 students' engagement and social emotional outcomes in 89 US schools participating in a Federal Race to the Top District (RTT-D) grant entitled kid•FRIENDLy (kids Focused, Responsible, Imaginative, Engaged, and Determined to Learn), and how varying levels of TLIM implementation fidelity affected student engagement and social emotional outcomes. After one year of TLIM implementation, students in the TLIM schools had greater school engagement than students in the non-TLIM schools after controlling for school demographics. No significant difference was found between TLIM schools and non-TLIM schools on social emotional constructs (responsibility and self-control/self-management skills, emotional and physical wellbeing) that were mapped to the *7 Habits* of TLIM. Students in the higher implementation fidelity TLIM schools had stronger school engagement than students in the lower fidelity TLIM and non-TLIM schools. Fidelity levels did not influence the student outcomes on other social emotional constructs.

Keywords: *7 habits, Social emotional learning, school engagement, program evaluation*

The Impact of *The Leader in Me* on Student Engagement and Social Emotional Skills

kid•FRIENDLy (kids Focused, Responsible, Imaginative, ENgaged , and Determined to Learn) is a 42 million-dollar Race to the Top District (RTT-D) grant (2013-2017) awarded to the Green River Regional Educational Cooperative (GRREC) and Ohio Valley Educational Cooperative (OVEC) in the United States. kid•FRIENDLy has four essential components: Students as Leaders, Leaders Developing Leadership, Competency-based Instruction, and Personalized Learning. One hundred and twelve schools in 22 districts have participated in the kid•FRIENDLy project since 2013.

The Leader in Me (TLIM) is a school-wide program, based on Covey's (2013) *The 7 Habits of Highly Effective People*, developed to improve student performance and behavior. In academic year 2013-14, FranklinCovey (FC) provided TLIM trainings to a selected cohort of 41 schools. As part of kid•FRIENDLy, TLIM was adopted to build a culture of student leadership and responsibility in participating schools. The TLIM *7 Habits* are 1) Be Proactive; 2) Begin with the End in Mind; 3) Put First Things; 4) Think Win-Win; 5) Seek First to Understand, Then to be Understood; 6) Synergize; and 7) Sharpen the Saw. This program does not merely teach the *7 Habits* to students, but requires school-wide efforts to integrate the *7 Habits* into the core values of the school. This program is described as “an innovative, schoolwide model that emphasizes a culture of student empowerment and helps unleash each child's full potential” (FranklinCovey, 2014).

The purpose of the current study was to examine whether the implementation of the TLIM program positively impacted student engagement and social emotional skills, as measured by a researcher-developed Student Engagement and Performance (STEP) survey, in kid•FRIENDLy schools. The study also aimed to investigate how varying levels of implementation fidelity affected these student non-academic outcomes.

Implementation of TLIM in Kid•FRIENDLy Schools

TLIM is an all-inclusive approach to school-wide cultural change. The ultimate goal is more than simply to have teachers learn the *7 Habits* well enough to teach them to their students, but to encourage all of the school members to practice the *7 Habits* and incorporate them into their personal and

professional lives. This process begins with the development of a vision statement for the school and the teachers, and it continues through the development of dedicated faculty, student, and staff teams to implement and guide the TLIM process (FranklinCovey, 2015). Schools attempt to integrate TLIM training into the school life and environment, partially by doing things such as placing critical signage and symbols of the *7 Habits* throughout the facility and by making frequent use of the TLIM language. Students are encouraged to develop personal models and goals, and they are encouraged to note and improve their performance through the use of Leadership Notebooks, Data Scoreboards, and Data Notebooks. The progress of a school within TLIM is monitored and evaluated by coaches and trainers from FranklinCovey, who work to improve staff dedication and problem-solving within the TLIM process.

FranklinCovey has developed a four-criterion procedure to evaluate schools engagement in TLIM. As part of this process, two TLIM coaches (trainers) made four-day site visits and observed each participating school in 2013. A four-criterion process (see Table 1) and engagement color formula was used by the FC coaches to determine the fidelity of the TLIM program implementation at these schools.

[Insert Table 1 here]

Each TLIM school was evaluated using the above 4-part rubric, with considerable emphasis being placed on the achievement of specific touchpoints (goals). Each school was labeled “Green,” “Yellow,” or “Red” status based on the coaching rubric results. “High Fidelity” (Green) is defined as meeting 3-4 of the criteria above. “Medium Fidelity” (Yellow) is defined as meeting 2 of the criteria. “Low Fidelity” is defined as meeting none or one of the criteria.

Previous Research on TLIM and the 7 Habits

Based on Stephen Covey’s *7 Habits* (2008, 2013), TLIM is, at least to a certain extent, derived from a self-help/self-improvement program that was first gained popularity in the business world. Skepticism towards these programs, both inside and outside of the academic community, is not uncommon. In the popular culture, films such as *Magnolia* (1999), *Donnie Darko* (2001), and *Little Miss Sunshine* (2006) portray motivational speakers and leaders as being oftentimes unsuited to their tasks of

promoting personal growth and development (Cullen, 2009, p. 1232), and it is worth considering the possibility that these views, if not first developed by the general public, have at least influenced the thinking of some of its members. On the academic front, sociologist Micki McGee suggests that personal development systems (such as those of Covey) are designed to make the individual participant more inclined to tolerating life within market-driven economies than encouraging them to address systemic societal problems (as cited in Cullen, 2009). More cynically, Kersten (2003) described *motivation* (a key part of any self-improvement initiative), as being “the phlogiston of productivity” (Chapter 1, Section 2). With this much skepticism, it would seem to be necessary to carefully examine the effects of any program of the sort, as it is quite possible that the teachers, students, and administrators for whom the program was designed share these negative attitudes towards personal development systems.

Jackson (1999) states that Covey’s *7 Habits* have undergone very little academic scrutiny, but since 1999 some research on the *7 Habits* has taken place. Carlone (2001) examined the effects of *7 Habits* training that was conducted within a section of the U.S. armed services, and noted that some of those who undertook that *7 Habits* training perceived it as being beneficial to themselves and their overall quality of life. Carlone divides the *7 Habits* into two broad categories—*public* (shared/cooperative) *victories* and *private* (individual) *victories* (p. 492).

As Carlone (2001) observed, the *7 Habits* are not implemented within in a cultural vacuum, and different habits appear to be easier to adopt for certain cultural groups than others. For example, U.S. citizens, with a more individualistic culture, appeared to have more trouble with achieving public victories (Habits 4-6) than they did achieving private victories (Habits 1-3 & 7) (p. 495), with one subject going so far as to describe Habit 4 (“Think win-win”) as being “un-American” (p. 495). On the contrary, Carlone speculates that the emphasis on private victories within the *7 Habits* might prove equally alien to those in collectivistic cultures. While Carlone (2001) may provide some interesting insight into participants’ perception of the *7 Habits* and training for their application, the actual study was quite small, and for that reason, it would be difficult to generalize its effectiveness, particularly to children.

Research on Other Social and Emotional Learning Programs

Several studies indicate that many students become less focused and connected to their school as they advance elementary to high school (Klem & Connell, 2004; Fredericks & McColskey, 2012; Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). The results of this phenomenon have influenced students' academic performance and social behavior. Therefore, today's teachers encounter numerous problems in schools. In addition, most schools seek a school reform in order to improve their curriculum, culture of learning, and student academic performance. In culturally diverse schools, the dynamics of diversity have the potential to contribute to tension, miscommunication, and an adversarial environment. Because of the demographic differences and issues that exist within culturally diverse school environments, various programs have been implemented to improve school engagement, academic performance, and social behavior.

One example of a successful initiative is the social and emotional learning (SEL) program introduced by Durlak et al. (2011). Their large scale meta-analysis study indicates that students who participated in the SEL program demonstrated improved social and emotional skills, behavior, and academic performance. Relative to the 270,034 students in the meta-analysis conducted by Durlak et al. (2011), students who participated in the SEL program made an 11 percentile gain in these domains. Its intervention was implementing the four recommended practices that are related to skill improvement for the participants. Correspondingly, the SEL program significantly boosts students' school engagement, behavior, and academic performance.

Rationale for Current Research

While the studies referenced above do provide some insight into the impact and perceptions of 7 *Habits* training and other SEL programs, there are several gaps in the body of research regarding the 7 *Habits* influenced TLIM program. Both of the previously-described studies related to TLIM constructs focus on the training of adults, rather than children (as is the focus of TLIM). Previous research provides predominately qualitative rather than quantitative data on the impact of TLIM. Although TLIM has been widely implemented, few studies have empirically investigated its impact on student non-academic

outcomes. The current large-scale quasi-experimental study aimed to fill these gaps. The evaluation team for kid•FRIENDLy developed the Student Engagement and Performance (STEP) survey to investigate TLIM impact on school engagement and social emotional skills.

Mapping 7 *Habits* to Research Constructs and Relevant Research

The 7 *Habits* are not directly referenced at length in the academic literature, so the evaluation team conducted extensive research into similar constructs within the academic literature. These constructs, and their relation to the 7 *Habits*, are summarized in Table 2. Additionally, according to a report from the Regional Educational Laboratory (2011), there are 21 instruments related to school engagement. Each instrument summary report is described and available for the upper elementary to secondary level. Those surveys are the main tools to measure students' engagement. The most common survey method was student self-report questionnaire. Table 2 also indicates connections the authors found between constructs related to TLIM and these various instruments.

[Insert Table 2 here]

Independence (Private Victories)

Within the framework of school, Rubin (2012) defined independence as “autonomy and appropriate risk-taking” (p. 44). The researchers divided the independence construct into several different sub-constructs, including responsibility/decision making, self control, self confidence, self management, physical and emotional well-being. The researchers also included mental and physical wellbeing as sub-constructs. The habits associated with these sub-constructs were Habit 1: Be Proactive, Habit 2: Begin with the End in Mind, Habit 3: Put First Things First, and Habit 7: Sharpen the Saw.

In the domain of independence, responsibility/decision making is a process of weighing a range of possible actions, making a decision, and executing or committing to that decision (Tierney, 2001); self-control is “the deliberate management of the self, enabling individuals to regulate and alter their inner responses in appropriate ways” (Grasmick, Tittle, Bursik, & Arneklev as cited in Moon & Alarid, 2014, p. 3). Without a certain amount of independence and self-determination, students are inclined to become disengaged from school and make TLIM efforts to succeed (Ryan & Deci, as cited on p. 42). This concept

closely aligns with those of *responsibility* and *decision making*.

LeBuffe, Shapiro, and Naglieri (2009) define personal responsibility as “A child’s tendency to be careful and reliable in her/his actions and in contributing to group efforts,” (p.64). Responsibility is essential for the development of productive members of society, and it is no less critical for the development of effective learners. Carpenter and Pease (2012) advocate that students have “more responsibility for their own learning,” (p. 37), with the underlying idea behind this being “not so that teachers can shirk work . . . [but] because students learn more when they’re active participants in the classroom and in their own learning” (Bonwell & Eison; Vygotsky, as cited on p. 37). Decision making connects to the idea of self-determination, which has already been noted as being important to student success. It has been defined by LeBuffe et al. (2009), as “a child’s approach to problem solving that involves learning from others and from previous experiences, using values to guide action, and accepting responsibility for decisions,” (p. 65).

To capture Habit 7, the researchers also included the concepts of mental and physical wellbeing. According to Ryff (1989), mental wellbeing has, at least since the time of Aristotle's *Nicomachean Ethics* been seen as being intertwined with *happiness* (p. 1070). Yet achieving perfect or complete happiness—by this definition, perfect mental wellbeing—seems a profoundly unreasonable goal. Fortunately, this is not the only existing model of mental or psychological wellbeing. Maslow tied the concept to *self-actualization*; Rogers developed the idea of the *fully functioning person*; Jung developed the concept of *individuation*; and Allport tied mental wellbeing to the idea of *maturity* (as cited in Ryff, 1989, p. 1070). The evaluation team placed more emphasis on adaptability and resilience of the individual than it did on the concept of *happiness*, as a key goal of the TLIM is to produce more resilient individuals, rather than those who are simply in a state of happiness without interruption. Physical wellbeing was defined by Cole (2006) as being “the ability to be fully engaged, on a regular basis, in all developmentally appropriate activities,” (p. 1). Thus, physical wellbeing is more than the *absence of illness*—it is the *presence of ability*.

Interdependence (Public Victories)

For the purpose of evaluation process, interdependence was defined as the mutual dependence between things or people (Interdependence, 2015). The evaluation team categorized Habits 4: Think Win-Win, Habit 5: Seek First to Understand, Then to be Understood, and Habit 6: Synergize as belonging to this construct, and further defined it as consisting of two sub-constructs—social competence and communications skills.

Interdependence is a concept first formally articulated in Western thought in the 19th century (Ollman, 2015), and it is a core element of the 7 *Habits* (Morella, 2014) and by extension, TLIM. Broadly stated, interdependence is “the quality or condition of being interdependent, or mutually reliant on each other,” (Interdependence, 2015). As this might be a difficult concept to measure directly, as well as for younger students to comprehend, the evaluation team divided it into related sub-constructs—*social competence, communication and relationship skills*.

Social competence. According to Taborsky and Oliveira (2012), social competence “refers to the ability of an individual to optimize its social behavior depending on available social information,” (p. 679). Thus, it indicates a certain level of flexibility within the individual. It is not inherently unique to humans. Rather, it is a trait shared by many social animals, and according to Bastian et al., several experiments have indicated that it is strongly influenced by events early in the development of social animals (as cited in Taborsky, Arnold, Junker, & Tschopp, 2012, p. 1067).

Communication skills. Communication skills may defined both verbally and non-verbally and in ways that are highly dependent on context. *Communication* is defined as “the imparting or interchange of thoughts, opinions, or information by speech, writing, or signs,” (Communication, 2015). Thus, *communication skills* are listening skills and the ability to effective convey information to others.

Relationship skills. LeBuffe et al. (2009) define relationship skills as “A child’s consistent performance of socially acceptable actions that promote and maintain positive connections with others,” (p. 65). Relationship skills have been found to be critical to the development of long-term relationships, with Amato and DeBoer (2001) finding that evidence of poor relationship skills—such as a having an “abrasive interpersonal style,” frequently criticizing one’s partner, or easily displaying anger—strongly

relating to an increased likelihood of divorce among adults (p. 1039). Unfortunately, these researchers also found that poor relationship skills appeared to be transmitted from parent to child (p. 1047), suggesting that any in-school program to improve these skills may have to contend with/counteract influences beyond the control of the educational system.

School Engagement Constructs of the STEP Instrument

The evaluation team began the process of developing an instrument to measure the impact of TLIM on student engagement by identifying key concepts within the larger body educational research. As mentioned earlier, two of these concepts—independence and interdependence—closely relate to Carlone’s (2001) concepts of public and private victories, and are thus a natural fit for an assessment of the *7 Habits*. Unfortunately, the authors were unable to find substantial references within the literature to evaluate strategies for TLIM or similar programs; however, the literature did point the authors in the direction of several meaningful concepts related to school engagement for measurement.

Martin (2007) produced a comprehensive model of non-cognitive factors relevant to student performance, including *mastery orientation, valuing of schooling, persistence, planning, and study [time] management*. He also listed a range of factors likely to have a negative impact on student performance, including *disengagement, self-handicapping, anxiety, failure avoidance, and uncertain control* (p. 414). Several of the factors, such as *valuing of schooling* and are quite similar to the concepts incorporated into the STEP instrument (in this case *purpose of schooling*). Others, such as *disengagement*, are worth noting in that Martin’s research suggests that the opposite should be cultivated. Table 2 lists each of these constructs and the sub-constructs that were related to them.

The term *engagement* may be defined many ways. Marks (2000) defines engagement as “a psychological process, specifically, the attention, interest, and investment and effort students expend in the work of learning” (as cited in National Center for School Engagement, 2006, p.1). Fredericks, Blumenfeld, and Paris (2004) include “the idea of commitment, or investment, which is central to the common understanding of the term engagement” (p. 61). They additionally proposed a four-dimensional engagement framework of cognitive engagement, emotional engagement, behavioral engagement, and

social engagement. Similar to Fredericks et al. (2004), Yazzie-Mintz and McCormick (2012) divided engagement into three (instead of four) categories: cognitive engagement, emotional engagement, and behavioral engagement.

Arguably, the types of engagement various authors describe can be explained separately and they are slightly different, but the sub-constructs under each idea are related and overlap. The Fredericks et al.'s (2004) four-dimensional engagement theory was used as the framework in the development of student engagement items for the STEP survey. The authors adapted the four-dimensional engagement idea because it was widely used and highly regarded in many research articles (Fredericks et al., 2004; Klem & Connell, 2004; Lawson & Lawson, 2013; National Center for School Engagement; Regional Educational Laboratory, 2011). A brief review of the literature concerning each dimension follows.

Cognitive Engagement

Cognitive engagement has been defined as “self-regulation, learning goals, and a measure of students’ investment in their learning” (Fredericks et al.; Jimerson, Campos, & Grief; Linnenbrink & Pintrich, as cited in Yazzie-Mintz & McCormick, 2012, p. 747). It can also be described, according to Yazzie-Mintz and McCormick (2012), as “students’ investment in the actual learning process—not just demonstration of involvement through external behaviors but internal investment, where the mind is engaged in classroom work,” (p. 746). This is similar to motivation, but distinct in that “cognitive engagement focuses more on self-regulation and strategy use,” (Fredericks et al., as cited in Chiu, Pong, Mori, & Chow, 2012, p. 1410).

This also relates to the concept of *purpose of learning/schooling*, which are the reasons why students attend academic institutions. Yazzie-Mintz (2009) listed several possibilities as being the ultimate goal of primary and secondary schooling, including allowing students to get their high school diplomas, job preparation, and general knowledge acquisition and learning (p. 24). Duckworth, Peterson, Matthews, and Kelly (2007) do not define purpose of learning/schooling directly, but they do consider the idea of *grit*, which is “as perseverance and passion for long-term goals” and note that their research indicates it has a strong relationship to success in a wide range of professional and creative fields (pp.

1087-1088).

Finally, cognitive engagement relates to the sub-construct of *learning effort*—the efforts that students make to learn. According to Hughes, Luo, Kwok, and Loyd (2008), *effortful engagement* is a similar concept. Effortful engagement refers to the “volitional, or effortful, aspect of involvement in instructional activities and includes trying hard, not giving up in the face of difficulty, and directing one’s attention to instructional activities” (Hughes et al., 2008, p. 3).

Emotional Engagement

Emotional engagement has been defined as “interest, identification with school, a sense of belonging, and a positive attitude about learning” (Finn; Marks; Newmann, Wehlage & Lanborn; Willms, as cited in Yazzie-Mintz & McCormick, 2012, p. 747). Thus, emotional engagement relates strongly to the concept of *sense of belonging* (at school), which Chiu et al. (2012) note as being as a *psychological* (rather than cognitive) state that “represents students’ feeling of being connected to the school” (p. 1410) and causes students to “view schooling as essential to their long-term well-being, as reflected in their participation in academic and non-academic pursuits,” (Willms, as cited in Chiu et al., 2012, p. 1410). Yazzie-Mintz (2009) acknowledges the importance of students’ feeling but reiterates the concept of connectedness by describing emotional engagement as students’ “feelings of connection to (or disconnection from) their school—how students feel about where they are in school, the ways and workings of the school, and the people within the school” (p. 2).

Behavioral Engagement

Behavioral engagement has been defined as “positive behavior, effort, and participation” (Yazzie-Mintz & McCormick, 2012, p. 747). Finn, Pannozzo, and Voelkl (as cited in Finlay, 2006, p. 2) include the components of positive conduct, such as following rules, adhering to classroom norms, and avoiding trouble within the classroom in their model of behavioral engagement. Finally, Yazzie-Mintz (2009) more broadly labels this category as “social/behavioral/participatory engagement” and describes it as “engagement in the life of the school” (p. 2). It also ties closely to the idea of students’ attitude towards school and teachers.

Beyond academic performance, Rubin et al. (as cited in Morgan, Shaw, and Forbes, 2013) observe that “association between low behavioral engagement and depressive symptoms appears to emerge as early as the preschool years, as less socially interactive preschoolers demonstrate an increased risk for internalizing problems” (p. 1118) and Morgan et al. note that this pattern continues through higher levels of schooling (p. 1118).

Social Engagement

Although not recognized by Yazzie-Mintz and McCormick (2012), social engagement can also play a role in determining a student’s success in school. It is similar to emotional engagement, but places more of an emphasis on connections to peers rather than a sense of connectedness to the school in a more general sense.

Research Questions

Using the researcher-developed instrument STEP, the current study aimed to answer two research questions:

1. Is there a significant difference in the student school engagement and social emotional skills between TLIM and non-TLIM schools?
2. Does the level of a school’s fidelity of TLIM implementation impact student engagement and social emotional outcomes?

Method

Data Sources

The current study is part of a larger evaluation study involving 112 Kid•FRIENDLY schools in 22 school districts in GRREC and OVEC regions in Kentucky. Due to constraints of personnel resources of FranklinCovey, all 112 participating schools were divided into 2 cohorts and TLIM was implemented at cohort 1 schools in Year 2013. Cohort 2 schools served as wait-list control until Year 2(2014-15) to implement TLIM. There were 44 cohort 1 schools (38 elementary, 6 middle) and 68 cohort 2 schools (28 elementary, 17 middle, 23 high). In addition to allowing teaching, training, and developmental resources to be used more effectively, this cohort strategy also allowed the evaluation team to evaluate the impact of

TLIM by comparing TLIM schools (Cohort 1) and Non-TLIM schools (Cohort 2) on student outcomes. Because all high schools were in cohort 2, they were removed from the current analyses. Only students in Grades 4-8 (N=20,241) from the 89 participating schools (44 Cohort 1 schools, and 45 Cohort 2 schools) were reported in the current study. By the time of student survey data collection, the cohort 1 schools had implemented TLIM for about ten months.

School demographics data (Free/reduced lunch rates, percentages of white student and special education student) and growth scores were obtained from the Kentucky School Report Card database and merged into student survey datasets. According to Kentucky's accountability system, the scale for growth is determined at equal intervals. For elementary and middle schools, the calculation is completed for reading and mathematics where annual testing occurs (grades 3-8). Schools receive one point for each percent of students that show typical or high growth.

STEP Instrument Development and Data Collection

STEP measured three domains: school engagement, independence, and interdependence. The engagement items and 7 *Habits* related items (independence and interdependence) were modeled after several existing instruments, including Devereux Student Strengths Assessment (DESSA) (LeBuffe, Shapiro, & Naglieri, 2008), Behavioral and Emotional Rating Scale—Second Edition (BERS-2; “BERS-2,” 2012), High School Survey of Student Engagement (HSSSE; “HSSSE: Home,” 2014), My Class Inventory (MCI; Prawat & Solomon, n.d., p. 3), Social Skills Improvement System (SSIS; “SSIS Rating Scales,” 2014), Child Self-Control Rating Scale (CSCRS; Rohrbeck, Azar, & Wagner, 1991, p. 179), Emotion Regulation Checklist (ERC), Learning and Study Strategies Inventory (LASSI; “Overview of LASSI,” 2014), Learning Environment Inventory (LEI; Fraser, Anderson, & Walberg, 1982, p. 6), and the National Center for School Engagement School Engagement Survey (SES; National Center for School Engagement, 2006, p. 2-3). The Motivated Strategies for Learning Questionnaire (MSLQ), Self-Control and Self-Management Scale (SCMS), Social-Emotional Wellbeing Survey (SEWB), and Self-Regulation Questionnaire (SRQ) were also used as resources for the development of the STEP instrument.

Item writing for the STEP instrument was conducted by the evaluation team. After a pool of

instruments covering the major concepts of interest was compiled, relevant items from each instrument were sorted and categorized as they related to the *7 Habits* and school engagement constructs. The items were rephrased from existing sources or new items were written for each subscale. Once the initial items were developed, they were informally piloted. Items that were found to be difficult to understand, of low validity, or redundant were eliminated. Two age versions of STEP survey were developed: a K-Grade 3 version and a Grade 4-12 version. Both had parallel constructs, but the younger aged version is shorter and uses Yes/No responses; the older version uses a 4-point Likert scale. Table 3 presents the sample items for each version of the STEP instrument. The survey was administered via Qualtrics (Qualtrics.com) online in spring 2014. Students were given a three-week window to complete the survey in their school computer labs.

[Insert Table 3 here]

Psychometrics Analysis of STEP Survey

Confirmatory factor analysis (CFA) was conducted using EQS 6.1. Separate analyses were conducted for each engagement construct, and an overall engagement model was also run. The standards of Bentler (1990) and Hu and Bentler (1999) were used to assess model fit. All models were robust. See Table 4 for more information about each analysis described below.

[Insert Table 4]

The Cognitive Engagement Scale included 13 items across two sub-constructs (“Purpose of Learning” and “Learning Efforts”). CFA results indicated that five items should be dropped (i.e., factor loadings were low; Matsunaga, 2010), and model fit improved when these items were removed. Consequently, the “Purpose of Learning” subscale was left with only two items, so more work on this subscale is necessary to ensure that at least three items represent this construct (Marsh, Hau, Balla, & Grayson, 1998). We also tested a one-factor Cognitive Engagement model, but fit for this model was poor.

The Emotional Engagement Scale included nine items across two sub-constructs (“Attitudes Towards School and Teachers” and “Feelings of Belonging”). CFA results indicated that one item should

be dropped, and model fit improved when this item was removed. The fit of the two-factor Emotional Engagement model was not significantly different from a one-factor model, indicating that the eight items represent a good measure of Emotional Engagement, but there are no sub-constructs within the scale.

The Behavioral Engagement Scale included six items. CFA results indicated that fit would not be improved by removing any items. The Social Engagement Scale consisted of seven items. CFA results indicated that two items should be dropped, and model fit improved when these items were removed.

Analysis of all modified engagement scales (including the two-factor Cognitive Engagement Scale, one-factor Emotional Engagement Scale, one-factor Behavioral Engagement Scale, and one-factor Social Engagement Scale) revealed that some items tended to cross-load, indicating that these items were likely multi-dimensional. Additional data collection is underway, and future data will be used to further examine these potentially problematic items.

The Independence scale, which contained three subscales (“Responsibility/Decision-making,” “Self-control, Self-confidence, Self-management/Organization,” and “Emotional/Physical Well-being”) was problematic, with CFA results indicating that 16 of the thirty original items should be removed due to low factor loadings, which resulted in the removal of the majority of the “Emotional/Physical Well-being” items. Fit improved when these items were removed. More “Emotional/Physical Well-being” items should be developed. We also tested a model that removed the items representing physical well-being, in order to determine whether an “Emotional Well-being” model fit the data better. However, the results did not support this revised model.

Analysis of the Interdependence Scale indicated that fit was good, but that two of the eight original items should be removed due to low factor loadings. Overall, the revised Student Step Survey consists of eight scales made up of 54 items. The fit of these scales could be improved by modifying scales with factor loadings below .6 or .7.

The internal consistency coefficients for the original STEP subscales ranged from .67 to .89. The internal consistency coefficients for the revised STEP scales were generally improved. See reliability information in Table 5.

[Insert Table 5]

Fidelity Measure

As discussed in the introduction, a four-criterion process was used by two FranklinCovey coaches to determine the fidelity of the TLIM program implementation. FranklinCovey coaches made four visits (two online and two face-to-face) to each participating school and determined the fidelity level of each school. For each school, high fidelity (Green) was defined as meeting 3-4 criteria, medium (Yellow) as meeting 2 criteria, and low (Red) as meeting 1-0 criterion. Among 44 Cohort 1 schools, 6 schools were Red, 5 schools were Yellow and 27 were Green, and 6 schools had missing fidelity information.

Analytic Approach

The multi-site quasi-experiment design of the current study entails the clustered data with student –level outcome nested within schools and schools nested within districts. The current study aimed to make inference about how TLIM program implemented at the school level affects individual student outcomes. Traditional analysis using ordinary least square (OLS) linear regression techniques, which regress the program implementation factors (e.g., treatment vs. control, fidelity levels) measured at the school level to make inference about outcomes at the individual student level, ignore the nested nature of the data and may produce misleading standard errors for estimating program effect. Multi-level modeling (also called Hierarchical Linear Modeling) is most appropriate for this type of evaluation because it allows a nuanced conceptualization of evaluation questions for clustered data (Newton & Llosa, 2011). Compared to the traditional OLS regression, HLM has three main advantages in multi-site program evaluation: a better and more appropriate estimate of average program outcome, an estimate of variation in program outcome and a framework for probing what factors are related to variation in program outcome (Newton & Llosa, 2011).

After deleting the problematic items based on the psychometric analysis, the composite (average) scores for each subscale was calculated at the student-level. Engagement scores represented the averages of cognitive engagement, social engagement, behavioral engagement and emotional engagement. Independence scores represented the average scores of responsibility/decision making, self-control and

emotional well-being items. Interdependence scores represented the averages of social competence and communication skill items. The student level survey data were aggregated into school level and merged with the school demographic data. The school level data were then aggregated into the district level data. HLM 7 software (Raudenbush, Bryk, & Congdon, 2010) was used for sub sequential data analysis.

Results

To investigate the impact of TLIM on student engagement and social emotional skills by comparing Cohort 1 and Cohort 2 schools, it is important to ensure that two cohorts of schools are equivalent in school demographics and achievement. Table 6 presents school demographics and achievement by cohort. The two cohorts had comparable free/reduced lunch rates, student achievement growth scores and percentages of special education students, but cohort 1 had a significantly higher percentage of white students than cohort 2 schools, $t(83)=2.31, p < .05$. When comparing the two cohorts on the student survey outcomes, these school demographic and achievement variables were used as covariates.

[Insert Table 6]

Table 7 displays descriptive statistics of STEP student survey results by cohort and grade. These student-level results are presented for the descriptive purpose, the actual hypothesis test for the observed school level treatment (cohort 1) vs. control (cohort 2) difference was analyzed in hierarchical linear models (HLM).

[Insert Table 7]

Specification of the Multi-level Model

The fully specified **level 1 model** at the student level is written as

$$Y_{ijk} = \pi_{0jk} + \pi_{1jk}*(GRADE_{ijk}) + e_{ijk}$$

Where Y_{ijk} is the outcome for student i in school j in district k ; π_{0jk} is the average outcome for school j in district k ; π_{1jk} is the regression coefficient that captures the relationship between Grade and student outcomes; e_{ijk} is the residual associated with an individual student outcome in school j in district k .

The fully specified **level 2 model** at the school level is written as

$$\pi_{0jk} = \beta_{00k} + \beta_{01k}*(COHORT_{jk}) + \beta_{02k}*(GROWTH_S_{jk}) + \beta_{03k}*(FR_LUNCH_{jk}) + \beta_{04k}*(WHITE_{jk}) + \beta_{05k}*(SPECIAL_{jk}) + r_{0jk}$$

$$\pi_{1jk} = \beta_{10k}$$

where π_{0jk} and π_{1jk} are the intercept and slope from Level 1 model; β_{00k} and β_{10k} represents the mean of intercept and slope, respectively; β_{01k} β_{02k} β_{03k} β_{04k} β_{05k} are regression coefficients that capture the effects of school-level variables (Cohort, Growth Scores, Free/Reduced Lunch, Percentages of White Students and Special Education Students) on student outcomes; r_{0jk} represents the residual or variability in π_{0jk} after taking school characteristics into consideration.

The **level 3 model** at the district level is written as

$$\begin{aligned}\beta_{00k} &= \gamma_{000} + u_{00k} \\ \beta_{01k} &= \gamma_{010} \\ \beta_{02k} &= \gamma_{020} \\ \beta_{03k} &= \gamma_{030} \\ \beta_{04k} &= \gamma_{040} \\ \beta_{05k} &= \gamma_{050} \\ \beta_{10k} &= \gamma_{100}\end{aligned}$$

where γ_{000} is the mean intercept from Level 2 model; γ_{010} - γ_{050} are the mean slopes from Level 2 model; u_{00k} represents the residual or variability in β_{00k} .

We began the multi-level analyses by specifying unconditional model with no predictors at any of the three levels presented. The composite scores of engagement, independence and interdependence scales were used as the outcome variables, respectively. The preliminary analysis partitioned the variance in the three student outcomes (engagement, independence and interdependence) across students, schools, and districts. Results revealed that about 95% of variance in the student outcomes was within schools, and 4-5% of variance was located between schools and only less than 1% of variability in student outcomes was across districts. We primary research interest was to see how school level predictors (cohort and demographic variables) predict student outcomes. So these variables were added to Level 2 predictors. From Table 7, it is clear student engagement and social emotional outcomes decrease with grade. Therefore Grade was introduced as a Level 1 predictor.

The results for the fully specified multi-level models predicting student engagement,

independence and interdependence are presented in Table 8. The estimated coefficients represented the influence of student level predictor (Grade) and school level predictors (Cohort, free/reduced lunch, percentages of white students and special education students, and achievement growth scores) on student engagement and social emotional outcomes. Cohort was dummy coded (Cohort 1 was coded as 1 and cohort 2 was coded as 0). The cohort effect was significant only for the engagement subscale, $p < .001$, but not for the 7 *Habits* related constructs, independence or interdependence. Free or reduced lunch rates significantly predicted student outcomes on all three domains. Student achievement growth scores also significantly predicted student engagement. Interestingly, grade significantly predicted student outcomes in all domains. Taken together, these results showed that after taking school demographics and achievement into consideration, Cohort 1 students are more engaged than Cohort 2 students, but Cohort 1 and Cohort 2 schools did not differ on 7 *Habits* related skills. Rather, students from the higher SES status tended to be more engaged and have stronger social emotional skills than students from the lower SES schools. Students from the higher performing schools are also more engaged than students from the lower performing schools. Overall, student self-reported engagement and social emotional skills decreased with increasing grades from 4 to 8.

[Insert Table 8]

The second purpose of the study was to investigate whether the level of a school's fidelity of TLIM implementation impacts student engagement and social emotional outcomes. Table 9 presents descriptive statistics of STEP survey results by fidelity level. It appears that students in higher level fidelity schools had more positive self-perceptions of engagement and social emotional skills than students in lower level fidelity schools. To determine which group works, the control group/cohort 2 schools served as the baseline and three dummy variables were created to represent three contrasts: Red vs. Control, Yellow vs. Control, and Green vs. Control. Similar 3-level HLM analyses were performed on three student outcomes: engagement, independence, and interdependence.

The results for the HLM models predicting student engagement, independence, and interdependence from fidelity contrasts are presented in Table 10. All three groups of Cohort 1 schools:

Green, Yellow, and Red showed significantly stronger engagement than the control schools. Similar to the results presented earlier, no significant difference between three fidelity groups and the control group was found on independence and interdependence. Free or reduced lunch rates significantly predicted student engagement and independence. Student achievement growth scores significantly predicted student engagement. Grade was negatively associated with student outcomes in all domains. All kid•FRIENDLY schools participated in the STEP survey, but only the grade level 4-8 results were reported in the present study. The analyses of K-Grade 3 survey results are in progress.

[Insert Tables 9 and 10]

Discussion

TLIM has been implemented in over 1,500 schools worldwide (see TLIM website, <http://www.theleaderinme.org/what-are-the-results/>, 2014); however, most research studies on TLIM have examined educators' perceptions of the program and have not addressed empirical impacts on student skills and dispositions (FranklinCovey, 2014). To the authors' knowledge, this study is the first to articulate a research-based conceptual framework for describing the specific constructs embedded within the *7 Habits* as they apply to school-age children and to measure the impact of TLIM implementation on these implicit non-academic outcomes. The large sample size of the current study enables psychometric analyses of the STEP survey designed to measure the impact of TLIM. Our results indicate satisfactory reliability and construct validity of the STEP survey overall.

Although Cohort 1 schools had only implemented TLIM for a single year at the time of this analysis, the results are promising. Results indicated that students in grades 4-8 in schools implementing TLIM score significantly higher on school engagement constructs than students in Non-TLIM schools. Likewise, schools at higher levels of fidelity of TLIM implementation had students with higher levels of behavioral and emotional engagement than schools with relatively lower implementation levels and non-TLIM schools. However, it is not entirely clear why Cohort 1 and Cohort 2 schools did not differ on the *7 Habits* related constructs of independence and interdependence. One reason could be that the construct validity of independence and interdependence was relatively poor compared to the engagement subscales.

Future work will involve refining the independence and interdependence scales to better measure the impacts of TLIM on student behavior. There is also a possible delay effect on the *7 Habits* related skills. A single year intervention may not be sufficient to yield positive impact on student independence and interdependence skills.

Consistent with the existing literature, we found that school SES status (free or reduced lunch rates) played a significant role in student engagement and social emotional outcomes in all three domains. Students from lower SES backgrounds are less engaged and have a higher likelihood of dropping out (Rumberger, 2001; Schoeneberger, 2012). Future analyses will determine whether TLIM appears to reduce dropout risk indicators.

Student achievement growth scores also significantly predicted student engagement, and engagement and social emotional skills decreased with grades. These results are consistent with the literature in that many students become less focused and connected to their school as they advance from elementary to high school (Klem & Connell, 2004; Fredericks & McColskey, 2012; Durlak et al., 2011). It should be also noted that TLIM program has not been systematically implemented in high schools in the GRREC/OVEC region. Rather, another program, Goal-driven, Resilient, Influential Teens (GRIT), was implemented at the high-school level beginning in the summer of 2014. This program incorporates Stephen Covey's *7 Habits*, but in a manner better suited to adolescent-oriented instruction. Whether there is a significant difference on student social emotional behavior between TLIM and non-TLIM schools for the younger or older students remains a question.

It should also be noted that the fidelity data were provided by the FranklinCovey coaches and the reliability and validity of the fidelity tool is unknown. To the authors' knowledge, the FranklinCovey research team is in the process of developing and validating a fidelity measurement tool and will implement the tool in all kid•FRIENDLY schools in 2015.

Our findings on the relationship between TLIM and student engagement, independence, and interdependence are limited, in part, by the fact that no baseline data existed to measure these TLIM constructs in schools prior to implementation. Findings could be explained by other variables existing in

the schools prior to TLIM introduction. Further research will utilize the current dataset and STEP to examine TLIM impact on students over time controlling for additional pre-existing student variables. The current study design is quasi-experimental in nature, but the researchers were not involved in the cohort determination process. Even though TLIM schools were roughly matched with non-implementing schools on school achievement and demographics, without random assignment of schools or careful matching, the results should be interpreted with caution.

This study makes a significant contribution to existing TLIM research because it offers the first large-scale empirical examination of the impact on the student skills and dispositions implicitly targeted by the program. The STEP instrument itself provides a valid tool for future evaluations of other programs targeting a wide variety of students' social and emotional skills. Results of this study and its implications will be of interest to researchers and practitioners seeking data about the efficacy and implementation of such programs and their impact on student outcomes.

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Table 1

The Leader in Me Fidelity Criteria

Criteria	Description
Fidelity to Process	Centerline facilitation days and coaching touchpoints (onsite and virtual) are on track.
Strength in Leadership	School principal, administrative team and Lighthouse Team understand the paradigm and purpose of The Leader in Me™ and are actively partnering with kid·FRIENDLY to achieve it.
Staff is Invested	80% of staff are invested in The Leader in Me™ as determined by coaching touchpoints and Lighthouse Team feedback.
Barriers to Process	Free of any external barriers to achieving Lighthouse in three years that are evident (for example: change in principal, state mandates, low trust in staff, other major initiative, etc.).

Table 2

Mapping The 7 Habits to Relevant Constructs

21 st Century Skills	The 7 Habits	Description	Relevant Constructs	Existing Instrument
HABITS 1-3 & 7 (INDEPENDENCE) <ul style="list-style-type: none"> - Responsibility - Decision Making - Self-confidence - Goal setting - Organization - Time management - Physical fitness - Hygiene - Emotional stability 	Habit 1: Be Proactive (you are in charge)	<p>This habit focuses on students' personal choices and how they have control over their own actions.</p> <p>Students are taught to take initiative by making statements of — I am a responsible person. I take initiative. I choose my actions, attitudes, and moods. I do not blame others for my wrong actions. I do the right thing without being asked, even when no one is looking (Covey S. R., 2008, p.21).</p>	Responsibility Leadership Emotional stability Engagement Competency Self-regulation Confidence	Social Skills Rating System (SSRS) (Communication, Cooperation, Assertion, Responsibility, Empathy, Engagement, and Self-Control) Student/teacher/parent versions Ages 3-18
	Habit 2: Begin with the end in mind (have a plan)	<p>This habit focuses on thinking about the end result. Students are encouraged to plan ahead and set goals. Personal statements include: —I am an important part of my classroom and contribute to my school's mission and vision, and look for ways to be a good citizen. (Covey S. R., 2008, p.21). <i>The Leader in Me</i> data notebooks are used to support this habit, as they allow students to track personal and academic goals, and provide them an opportunity to see where their current achievement is compared to their goals (Covey S. R., 2008).</p>	Goal setting and tracking skills Self-control/management Leadership Engagement Self-regulation Self-efficacy	Children's Perceived Self-Control Scale (CPSCS) Ages 9-14 School Engagement Scale/Questionnaire SEQ (feelings of belongings, school connecteness)

HABITS 4-6 (INTERDEPENDENCE) <ul style="list-style-type: none"> - Conflict management - Ethics/Manners - Listening skills - Speaking skills - Respect - Teamwork - Problem solving 	Habit 3: Put first things first (work first, then play)	<p>This habit encourages students to prioritize so that they may spend time on things that are most important first. Student statements would include: —I spend my time on things that are most important. This means I say no to things I know I should not do. I set priorities, make a schedule, and follow my plan. I am disciplined and organized (Covey S. R., 2008, p.21).</p>	<p>Time management</p> <p>Responsibility</p> <p>Leadership</p> <p>Competency</p> <p>Self-regulation</p> <p>Self-discipline</p> <p>Self-efficacy</p> <p>Emotional stability</p> <p>Physical Well-being</p> <p>Engagement</p> <p>Self-regulation and control</p> <p>Self-efficacy /Self-esteem</p> <p>Relationships with peers and adults</p> <p>Conflict management</p> <p>Emotional stability</p> <p>Engagement</p> <p>Responsibility</p> <p>Leadership</p>	<p>Devereux Student Strengths Assessment (DESSA) Ages 5-14 Teacher report [personal responsibility, self-management, goal directed behavior, decision making, optimistic thinking]</p> <p>Perceived Competence Scale for Children (PCSC) Ages 8-15</p> <p>Self-Description Questionnaire Ages 8&up</p> <p>Social-Emotional Wellbeing Survey (student/teacher) Ages 5-18</p> <p>High School Survey of Student Engagement(HSSSE)</p> <p>Behavioral and Emotional Rating Scale (BERS-2) Child/Parent/Teacher version Ages 5-18</p> <p>Emotion Regulation Checklist (ERC; Teacher/Parent Report): Ages 6-12</p>
	Habit 7: Sharpen the saw (balance feels best)	<p>This habit puts the focus back on the individual and the importance of taking care of oneself. Students say: —I learn in lots of ways and lots of places, not just at school. I take time to find meaningful ways to help others. (Covey S. R., 2008, p.22). This habit focuses on eating right, exercising, and spending time with friends and family.</p>		
	Habit 4: Think win-win (everyone can win)	<p>Students say, —I balance courage for getting what I want with consideration for what others want... When conflicts arise, I look for third alternatives (S.R., 2008, p.21). Through this process, students learn to recognize how they react can affect others.</p>		

<ul style="list-style-type: none"> - Creativity - Analytical skills - Valuing Diversity 		<p>Social Competency</p> <p>Self-regulation</p>	
<p>Habit 5: Seek first to understand, then to be understood (listen before you talk)</p>	<p>Students are encouraged to see things from another's point of view by listening to others' ideas and feelings. Students would say, —I try to see things from their viewpoints...I am confident in voicing my ideas (Covey S. R., 2008, p.21).</p>	<p>Confidence</p> <p>Communication skills</p> <p>Cooperation</p> <p>Leadership</p> <p>Self-confidence</p>	<p>Child Behavior Checklist(CBCL)- Parent report Ages 6-18</p>
<p>Habit 6: Synergize (together is better)</p>	<p>The goal of this habit is to focus on working well with groups and getting along with others. Students state: —I seek out other people's ideas to solve problems because I know that by teaming with others we can create better solutions than any one of us can alone (Covey S. R., 2008, p.22). By working in groups, students learn to value others' differences.</p>	<p>Interpersonal Relationships</p> <p>Collaboration</p> <p>Respect</p> <p>Problem-solving skills</p> <p>Valuing Diversity</p>	<p>Social Problem Solving Scale (interview)</p> <p>Perceived Racial Stress and Coping Test Ages 6-12</p>

Table 3

STEP Instrument Constructs and Sample Items for Two Versions

Construct/Domain	Sub-Construct	Example Items (K-3)	Example Items (4-12)
Cognitive Engagement	Purpose of schooling	I like to learn in school. I go to school because I like my friends.	I go to school because I love to learn. I go to school because I want to go to college.
	Learning efforts	I work hard in school. I learn everything I can in school.	I work hard on my schoolwork. I enjoy working on difficult tasks.
Emotional Engagement	Attitudes toward school & teachers Feelings of belonging	I am happy at school. My classroom is fun. My teachers listen to me. I can talk to teachers about my problems.	My classroom is a fun place to be. I think the teachers at my school treat students fairly. I feel like my opinions are respected in this school. I can talk to my teachers about my problems.
Behavioral Engagement		I follow the rules at school. I get in trouble at school.	I get in trouble at school. I fight with my classmates.
Social Engagement		I like to make new friends. I help my friends when they need help.	I help my friends when they are having problems. I care about how others feel.
Independence (Habits 1, 2, 3 & 7)	Responsibility/Decision Making Self-Control,	I keep my promises. I think before I make choices. I can deal with whatever happens to me. I can solve my problems.	I finish tasks when asked. I make decisions after thinking carefully. I can handle whatever comes my way. I can solve most problems if I work hard.
	Emotional/ Physical well-being	I don't get mad when my feelings get hurt. I eat healthy foods.	I stay calm when my feelings get hurt. I exercise every day.
Interdependence (Habits 4,5, & 6)	Social Competence/ Communication skills	I share things with other people. I am comfortable around people who are different from me.	I am comfortable around people who are different from me. I put myself in other people's shoes.

Table 4

Confirmatory Factor Analysis Results

Scale name	Original or final	Factors	Correlation between factors (<i>r</i>)	Range of factor loadings	Items dropped from original model	CFI	RMSEA	Satorra-Bentler Chi-square (χ^2 *)	df
Cognitive Engagement	Original	2	.79	.20-.80		.86	.08	13104.34	64
	Final	2	.62	.67-.81	5	.95	.07	2513.43	19
	Tested as 1 factor	1	n/a	.48-.80	5	.86	.11	7474.69	20
Emotional Engagement	Original	2	.94	.37-.77		.94	.09	5467.65	26
	Final	1	n/a	.57-.75	1	.94	.09	5186.44	20
Behavioral Engagement	Original	1	n/a	.61-.69		.90	.12	3643.27	9
Social Engagement	Original	1	n/a	.37-.71		.95	.06	1467.59	14
	Final	1	n/a	.53-.68	2	.98	.05	436.07	5
Behavioral and Social Engagement	Tested as 1 factor	1	n/a	.49-.77	2	.82	.12	8011.10	20
All modified engagement scales			.41-.75	See above	See above	.89	.06	15796.21	199
Independence	Original	3	.72-.89	.21-.75		.83	.06	40159.27	402
	Final	3	.57-.86	.57-.78	16	.96	.04	4161.32	74
Independence, physical items removed						.91	.06	10867.87	116
Interdependence	Original	1	n/a	.45-.78		.96	.06	1985.87	20
	Final	1	n/a	.62-.79	2	.97	.06	934.05	9
All modified scales						.91	.04	36934.16	1322

* All χ^2 *p*-values < .0001.

Table 5

Reliability Information of STEP Survey Oder Student Version

	Original		Revised	
	No. of Items	Cronbach's alpha	No. of Items	Cronbach's alpha
Behavioral Engagement	6	.81	5	.77
Social Engagement	7	.75	5	.77
Emotional Engagement	9	.87	8	.88
Cognitive Engagement	13	.82	11	.86
Responsibility	7	.76	5	.78
Self-Control	15	.86	9	.87
Emotional & Physical Well Being	8	.67	5	.63
Social Competence	8	.81	6	.84

Table 6

Descriptive Statistics of School Demographics by Cohort

	Cohort 1			Cohort 2			<i>t</i>
	M	SD	N of Schools	M	SD	N of Schools	
Growth Score	58.90	7.89	44	59.11	9.06	45	-.249
% FR Lunch	62.88	11.73	44	62.87	13.02	45	.176
% White Student	88.65	14.45	44	81.44	13.03	45	2.31*
% Special Ed Student	14.98	3.95	44	13.77	3.37	45	1.74

* $p < .05$

Table 7

Descriptive Statistics of STEP Survey Results by Cohort and Grade

	Cohort	Grade 4			Grade 5			Grade 6			Grade 7			Grade 8		
		N	M	SD	N	M	SD	N	M	SD	N	M	SD	N	M	SD
Cognitive Engagement	1.00	1909	3.43	0.40	1965	3.40	0.40	1149	3.33	0.43	1218	3.20	0.47	1213	3.16	0.47
	2.00	2193	3.41	0.41	2216	3.35	0.42	2797	3.30	0.42	2848	3.17	0.46	2313	3.10	0.44
Emotional Engagement	1.00	1910	3.25	0.55	1969	3.13	0.61	1149	2.98	0.63	1213	2.74	0.65	1207	2.67	0.68
	2.00	2195	3.17	0.57	2214	3.04	0.61	2798	2.92	0.62	2846	2.70	0.67	2313	2.55	0.63
Behavioral Engagement	1.00	1910	3.48	0.51	1969	3.43	0.54	1148	3.38	0.58	1215	3.20	0.63	1208	3.10	0.64
	2.00	2201	3.48	0.52	2220	3.38	0.57	2799	3.33	0.58	2852	3.15	0.65	2315	3.06	0.61
Social Engagement	1.00	1915	3.48	0.47	1967	3.43	0.48	1143	3.34	0.51	1211	3.27	0.51	1203	3.22	0.52
	2.00	2196	3.45	0.47	2221	3.37	0.49	2786	3.32	0.50	2853	3.23	0.52	2313	3.18	0.50
Engagement total	1.00	1900	3.41	0.39	1957	3.35	0.41	1136	3.26	0.45	1209	3.10	0.47	1201	3.04	0.46
	2.00	2183	3.38	0.40	2203	3.29	0.43	2772	3.22	0.43	2831	3.06	0.46	2304	2.97	0.43
Responsibility	1.00	1915	3.37	0.51	1966	3.34	0.51	1142	3.29	0.52	1213	3.18	0.54	1201	3.15	0.53
	2.00	2196	3.36	0.51	2221	3.27	0.53	2790	3.26	0.52	2850	3.14	0.56	2310	3.06	0.52
Self-Control	1.00	1902	3.35	0.51	1955	3.29	0.52	1136	3.20	0.54	1201	3.06	0.56	1199	3.00	0.54
	2.00	2185	3.35	0.51	2197	3.22	0.52	2763	3.17	0.52	2823	3.04	0.57	2302	2.95	0.53
Emotional Well Being	1.00	1902	3.06	0.62	1953	3.01	0.61	1135	3.00	0.62	1200	2.85	0.65	1196	2.80	0.67
	2.00	2187	3.09	0.59	2186	3.02	0.62	2766	2.98	0.63	2812	2.86	0.65	2297	2.78	0.63
Independence	1.00	1897	3.26	0.46	1946	3.21	0.45	1130	3.16	0.47	1196	3.03	0.48	1191	2.99	0.48
	2.00	2172	3.27	0.44	2181	3.17	0.46	2755	3.13	0.46	2801	3.02	0.49	2290	2.93	0.44
Interdependence /Social Competence	1.00	1902	3.44	0.51	1951	3.40	0.53	1135	3.35	0.53	1198	3.23	0.54	1197	3.20	0.56
	2.00	2184	3.42	0.51	2187	3.39	0.52	2755	3.34	0.52	2815	3.21	0.55	2292	3.13	0.54

Table 8

Summary of Multi-level Models Predicting Student Engagement and Social Emotional Outcomes from Cohort

<i>Fixed Effect</i>	Engagement			Independence			Interdependence		
	Coefficient	SE	<i>t</i>	Coefficient	SE	<i>t</i>	Coefficient	SE	<i>t</i>
Intercept	4.43	0.11	38.47***	4.19	0.09	43.16***	4.36	0.13	31.99***
Cohort (1 vs. 0)	0.04	0.01	3.12***	0.01	0.01	0.91	0.02	0.01	.98
Growth Score	0.001	<.001	2.10*	<.001	<.001	1.29	<.001	0.001	-0.64
% FR Lunch	-0.001	<.001	-2.40*	-0.002	<.001	-4.53***	-0.001	<.001	-2.49**
% White Student	-0.0004	<.001	-0.76	<.001	<.001	-1.20	-0.001	<.001	-1.96
% Special Ed									
Student	-0.001	<.001	-0.68	-0.002	0.001	-1.16	<.001	0.002	-0.11
Grade	-0.10	0.003	-27.71***	-0.08	0.004	-22.04***	-0.07	0.003	-19.61***
<i>Random Effect</i>	Estimate	<i>df</i>	χ^2	Estimate	<i>df</i>	χ^2	Estimate	<i>df</i>	χ^2
Student (Level 1)	0.18			0.20			0.27		
School (Level 2)	0.003	62	422.96***	0.003	62	336.71***	0.003	62	249.05***
District (Level 3)	<.001	21	14.34	<.001	21	15.08	<.001	21	20.67

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

Table 9

Descriptive Statistics of STEP Survey Student Level Results by Fidelity Level

	Cohort 2				Cohort 1			
	Control (n=12,099)		Red (n=1,175)		Yellow (n=1,400)		Green (n=4,047)	
	M	SD	M	SD	M	SD	M	SD
Cognitive Engagement	3.26	0.44	3.31	0.46	3.31	0.46	3.33	0.43
Emotional Engagement	2.86	0.66	3.01	0.65	2.93	0.66	3.00	0.66
Behavioral Engagement	3.28	0.61	3.33	0.59	3.33	0.59	3.35	0.59
Social Engagement	3.31	0.50	3.37	0.51	3.36	0.50	3.37	0.50
Engagement average	3.17	0.45	3.25	0.46	3.23	0.45	3.26	0.45
Responsibility	3.22	0.53	3.27	0.53	3.26	0.54	3.29	0.53
Self Control	3.14	0.55	3.18	0.55	3.19	0.56	3.21	0.55
Emotional Well Being	2.94	0.64	2.93	0.63	2.90	0.64	2.97	0.64
Independence	3.10	0.47	3.12	0.47	3.11	0.48	3.15	0.47
Interdependence /Social Competence	3.29	0.54	3.33	0.52	3.32	0.55	3.34	0.54

Table 10

Summary of Multi-level Models Predicting Student Engagement and Social Emotional Outcomes from Fidelity

<i>Fixed Effect</i>	Engagement			Independence			Interdependence		
	Coefficient	SE	<i>t</i>	Coefficient	SE	<i>t</i>	Coefficient	SE	<i>t</i>
Intercept	4.32	0.10	39.49***	4.134	0.09	45.67***	4.28	0.12	34.66***
Fidelity									
Red vs Ctrl	0.04	0.02	2.11*	0.008	0.02	0.37	0.01	0.02	0.70
Yellow vs. Ctrl	0.06	0.02	3.01**	0.02	0.02	0.92	0.01	0.03	0.33
Green vs. Ctrl	0.04	0.01	2.28*	0.01	0.01	0.84	0.01	0.01	0.98
Growth Score	0.001	<.00	2.09*	<.001	<.001	1.25	<.001	<.001	-0.46
% FR Lunch	-0.001	<.00	-2.15*	<.001	<.001	-3.40**	<.001	<.001	-1.87
% White Student	<.001	1	-0.67	<.001	<.001	-1.27	<.001	<.001	-1.70
% Special Ed									
Student	<.001	0.002	-0.07	-0.0017	0.002	-0.75	<.001	0.002	-0.28
Grade	-0.11	0.003	-27.631***	-0.08	0.004	-22.14***	-0.07	0.003	-19.47***
<i>Random Effect</i>	Estimate	<i>df</i>	χ^2	Estimate	<i>df</i>	χ^2	Estimate	<i>df</i>	χ^2
Student (Level 1)	0.18			0.21			0.27		
School (Level 2)	0.003	53	398.00***	0.002	53	318.57***	0.002	53	210.44***
District (Level 3)	<.001	21	11.79	<.001	21	14.48	<.001	21	28.14

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