Improving Student Academic and Non-Cognitive Outcomes through Personalization for

Academic and Social Emotional Learning

*** Highly Rated Pre-application ***

*** Competitive Preference Priority—Supporting Novice i3 Applicants ***

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Academic and Social Emotional Learning

The proposed five-year project will develop and expand Personalization for Academic and Social Emotional Learning (PASL), a systemic school-based intervention in which administrators, guidance counselors, and teachers intentionally and deliberately attend to students' academic, social emotional, and behavioral needs (Rutledge & Cannata, 2016; Rutledge, Cohen-Vogel, Osborne-Lampkin, & Roberts, 2015), into a replicable and scalable program. This project will build on the work of the National Center on Scaling Up Effective Schools (NCSU) that identified the use of PASL in two district high schools in Broward County, Florida and scaled it to 15 high schools. In the proposed project, the research team—Stacey Rutledge at Florida State University (FSU) and Marisa Cannata at Vanderbilt University—and RTI International will partner with Broward County Public Schools (BCPS) to implement PASL in 15 additional high schools and measure its impact on non-cognitive factors—including students' sense of belonging, self-efficacy, agency, goal setting, self-regulation—as well as examine PASL's impact on student attendance and dropout rates, behavior referrals, course grades, and student achievement as measured by state assessments. By the end of the project and through a process of continuous improvement in participating Broward high schools, we will have developed a comprehensive toolkit and professional development materials to provide schools and districts across the country with tested resources to implement PASL.

<div align="center">Significance</div>

The magnitude of the problem. Over the last 20 years, policymakers and school reformers have focused their attention on the academic side of schooling, turning to policies, programs, and practices aimed at leveraging curriculum and instruction. Increasingly, however,

studies suggest that this intense focus on curriculum and instruction has limitations and that it is necessary to also explicitly attend to the non-cognitive aspects of students' experiences in schools. High schools are complex, often large organizations that serve students of different ability levels and motivations and are often criticized for being impersonal and alienating places for students (Marks, 2000). While numerous studies have found that effective high schools work as coherent systems with visions, missions, organizational routines, and cultures that bridge the academic, non-cognitive, and behavioral elements of schooling (Bryk, Sebring, Allensworth, Luppescu, & Easton, 2010; Dolejs, 2006; Goldring, Porter, Murphy, Elliott, & Cravens, 2009; Lee, Bryk, & Smith, 1993), little attention has been paid to the ways in which high schools can build these linkages to best serve students.

One reason for the disconnect between academic activities and social emotional and behavioral activities is that adults in schools tend to be more comfortable in their instructional role and less clear on their role in providing social emotional support to students (Siskin & Little, 1995; Stodolsky & Grossman, 1995). Yet increasingly, it is clear that the non-cognitive skills of high school students are critical for their secondary and postsecondary success. During high school, students attain the knowledge, skills, and social competencies for college and the workforce. Studies show that high schools play an important role in helping students gain high levels of self-efficacy and personal agency and learn to self-regulate through direct methods such as explicit goal setting, and indirectly through building a culture of caring for students (Cervone & Cushman, 2015). These direct and indirect strategies are particularly important for more vulnerable populations of students who run the risk of low performance and dropping out. While graduation rates have increased over the last decade to 84% (DiPaoli, Balfanz & Bridgeland, 2016), low income and minority students and English Language Learners face higher dropout

rates than their white counterparts (Kaufman, Alt & Chapman, 2004; Snyder, Dillow, & Hoffman, 2009). The achievement gap persists, with African American and Latino students averaging two years behind white students (Rampey, Dion, and Donahue, 2008). Ninth grade is a particularly critical year for students: Success in ninth grade increases the likelihood they will graduate high school (Allensworth & Easton, 2005; Neild, Stoner-Eby, & Furstenberg, 2008).

It is in this larger context that we make the case for attending to students' non-cognitive and academic outcomes through a program of systemic personalization. PASL works by both developing structures to influence teachers, guidance counselors, and administrators as they track and guide students in need of support and intervention, and by building commitment among faculty that strengthens informal networks of communication when students and adults check in with each other regularly and teachers intentionally connect to students' interests and experiences. Social cognitive theory suggests that when adults show interest and caring toward students, they engage in practices that increase students' non-cognitive skills, including self-efficacy, self-regulation, and development of personal agency (Bandura, 1977, 2000, 2001; Pajares, 1996; Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998; Zimmerman, 2000). Further, personalization—in which adults show interest in students' experiences and learning needs—bolsters students' sense of belonging and their engagement in their own learning (Hallinan, 2008; Jenkins & Keefe, 2002; McLaughlin, Talbert, Kahne, & Powell, 1990).

A recent meta-analysis of 213 elementary and secondary school-based programs suggests the promise of social and emotional learning (SEL) interventions and activities generally. Specifically, Durlak, Weissberg, Dymnicki, Taylor, and Schellinger (2011) found that compared to controls, students who participated in an SEL program experienced an 11% increase in

achievement. This study also found that SEL programs improve students' skills and attitudes and have a positive impact on behavior management and student discipline.

Implementing practices that serve high-need students. In this project, we aim to (1) implement PASL in 15 BCPS high schools and (2) draw on the PASL implementation experiences of 30 BCPS high schools to develop a toolkit and professional development materials for other schools to use when they implement PASL. Broward County is the sixth largest school district in the nation, serving 70,000 high school students, 64% of whom qualify for free and reduced-price lunch. It is a diverse district: 41% of students classified as Black and 32% identified as ethnically Hispanic during the 2015–2016 school year, and 11% of students qualified for ELL services (BCPS, 2016). As a large urban district, BCPS faces many of the challenges of urban districts nationally, however with 76.5% of BCPS students graduating (Travis, 2016), it still lags behind the national average of 82% (DePaoli, Balfanz, & Bridgeland, 2016). While PASL is meant for all ninth grade students, it is particularly relevant for high-need students, who benefit from strong and caring relationships with teachers, particularly when teachers build a foundation of trust, set high expectations, and have a positive attitude toward learning (Farrington et al., 2012). We will, therefore, pay particular attention to students who have earned Ds and Fs in ninth grade; those students are specifically in danger of dropping out of high school. With 15 BCPS high schools already scaling in PASL, and the 15 additional high schools whose implementation will be supported by the proposed project, we estimate that at the conclusion of our five-year project, 45,000 students in BCPS will have experienced PASL. We expect that after the first year of implementation in the new schools, students will have improved their non-cognitive outcomes by .25 standard deviations on the New General Self-Efficacy Scale, the Self-Efficacy for Self-Regulated Learning Scale, and the Teacher-Student Relationships

Subscale of the Student Engagement. We expect that by the end of the second year of implementation, that the schools will report a 5% decrease in students on the D and F lists, 5% fewer behavior referrals, 5% increase in attendance rates, 5% increase in course passing rates, and .25 SD increase in student achievement.

Promising and innovative practice. PASL is built on an initial set of core components, grounded in extent research, that have been adapted and well received in BCPS high schools. The core elements of PASL are: (1) routine *rapid check ins* between adults and students—where adults intentionally and routinely check in with a targeted group of students, (2) goal setting activities that help students set short and long term goals, (3) intentional use of data to track student progress, (4) educator teams of administrators, guidance counselors, and teachers that meet to discuss student progress, and (5) a culture of personalization. Together, these practices provide a *system of personalization*. Our research team developed these practices in conjunction with a network of educators from BCPS high schools. In 2014–2015, PASL was piloted in three high schools. In 2015–2016, PASL was scaled to five additional high schools. This coming year (2016–2017), seven more schools will be implementing PASL. As of Fall 2016, then, 15 BCPS high schools will be implementing PASL, and it remains in ninth grade. In the proposed project, we will systematically draw on the experiences and expertise of those implementing PASL in BCPS to develop and streamline current PASL practices into a coherent and comprehensive toolkit and professional development materials that will allow PASL to be scalable and replicable. At the conclusion of the grant, after our comprehensive and iterative process of improvement that focuses on the strategic adaptation of PASL into schools, we will have developed a set of tested resources and materials to be shared with other schools and districts.

There are two promising and innovative elements of our project: (1) PASL as systemic personalization and (2) the process of improvement itself. PASL represents a systemic approach to school improvement predicated on strengthening and bridging academic and social emotional practices *already present* in high schools. Studies on effective schools repeatedly show how these schools work as a system of practices (Bryk et al., 2010; Dolejs, 2006; Goldring, Porter, Murphy, Elliott, & Cravens, 2009), yet few attempt to identify the core components of their system of practices that can be adapted to other school contexts. These studies as well as theories on the organization of effective schools (Rowan, 1990) and social cognitive theory (Bandura, 1989, 2001) provide theoretical grounding for PASL. Taken together, these studies and theories emphasize the importance of strengthening systems of academic, social emotional, and behavioral activities, with none working in isolation.

As a model, PASL builds on structures and practices that are familiar to administrators, guidance counselors, and teachers. In our qualitative study of the implementation of PASL over the last two years (2014-2016), adults have repeatedly described PASL as: "What most teachers do naturally, but [. . .] making sure we do it with intention" and "an opportunity to get to know [our] kids." We also found that by attending to students through Rapid Check Ins and Educator Teams, adults in PASL schools report greater collaboration with each other. To illustrate, one teacher said, "What was helpful was letting teachers know that we really do need to work together. Like there was, there really was a moment of bonding in the beginning of it…I am going to call other teachers more frequently. I can lean on them for support as an extra resource to help my students along. So the idea jelled that we're not alone in this fight."

Further, the collaborative continuous improvement approach (Bryk et al., 2015; Cohen-Vogel et al., 2015) that we have used to implement PASL over the last two years is also

innovative. Our process of improvement allows for a top-down/bottom-up approach to implementation (Tichnor-Wagner et al., 2016) that allows for co-construction of PASL as each school adapts its five practices to their particular context. Specifically, we employ the plan-do-study-act approach to achieving scale because it allows us to focus not on simply monitoring implementation but on building shared knowledge about the interaction between the innovation and the contexts in which it is implemented (Means & Penuel, 2005). Continuous improvement testing also focuses the local adaptation because each test provides knowledge about the implementation of specific adaptations in unique contexts, helping to make judgments about those adaptations (Langley, 2009). While using a continuous improvement process for implementation has advantages, the experiences of the first 15 BCPS high schools also suggest that the process includes challenges for school personnel as they learn about the core strategies in depth. To alleviate these challenges, in the proposed project we will develop a toolkit and revised continuous improvement supports that will (1) provide a more coherent introduction to PASL and more detailed core strategies for schools to implement and (2) help schools as they adapt practices to their context. Specifically, we will develop tools to help schools strategically adapt PASL strategies for their context and use plan-do-study-act as a way to test those adaptations.

Taken together, PASL strategies influence the development of non-cognitive factors through a systemic approach both in schools and in the implementation process. PASL builds on structures and practices already present in schools and resonates with administrators, guidance counselors, and teachers because it is consistent with their views of the scope of their work.

Theory of action. PASL as a system of personalization is predicated on the following theory of action (illustrated in Appendix D). With PASL, adults in schools intentionally and deliberately attend to students' interests and needs by engaging in organizational routines that

institutionalize personalization. By adapting PASL activities and practices to their school contexts, adults in schools will have the skills and organizational routines to personalize the learning experience for their students, leading to improved student success and outcomes. In the classroom, teachers intentionally and deliberately use routine *rapid check ins* with students and *goal setting* to cultivate caring and supportive adult-student relationships. Through these experiences, students build social emotional skills and greater self-efficacy beliefs and improve their academic and non-cognitive outcomes. When students are identified as needing additional support (i.e., high-need—particularly students earning Ds and Fs) their teachers refer them to the *educator Team* (ninth grade assistant principal, guidance counselor[s], and teacher[s]) for additional resources. Students' teachers and the educator team then *intentionally use data* to understand struggling students holistically. Through this process, high-need students are provided the support—for example, tutoring, social services, and/or parental notification—that helps them get focused and assures them that adults in their school care about them. Finally, the school provides a culture of personalization through clubs, extracurriculars, mentoring programs, and a language of personalization that reinforces other PASL practices.

The PASL implementation process has its own theory of action. Adoption of PASL in schools is a highly local activity nested in a district and state context. Local stakeholders must understand the implementation of PASL as a collaborative and iterative process in which they participate in their own planning, implementation, and analysis of their reform approaches. A collaborative process leads to greater buy-in by all stakeholders and therefore greater integrity. In the implementation process, more experienced schools serve as mentors and advisees to newer schools, thus supporting and facilitating scaling out and building district capacity.

Replicability. Our process of developing and implementing PASL attends explicitly to replicability. By having implementers use the collaborative continuous improvement approach and the plan-do-study-act process in developing the PASL toolkit and professional development materials and scaling PASL to other high schools, replicability is acknowledged as a central goal of this project. Moreover, PASL and its associated practices are uniquely positioned for replicability. PASL is predicated on harnessing and strengthening practices and routines already present in high schools, and therefore builds on what already exists by creating connections and organizational routines that lead to personalization.

Addressing Absolute Priority 4—Influencing the Development of Non-Cognitive Factors

Students' social emotional practices have significant effects on their academic outcomes (Durlak et al., 2011). Studies increasingly show the importance of attending to students' social emotional well-being and skills along with their academic behaviors—such as work habits, goal setting, and problem solving skills (Oberle, Domitrovich, Meyers, & Weissberg, 2016; Rutledge et al., 2015). By personalizing students' learning experiences from the very beginning of high school, adults establish a solid foundation for students' further success throughout high school. In particular, studies of personalization strategies in secondary schools find that when students feel supported and cared for by their teachers, they exhibit a greater sense of belonging and commitment to the school which, in turn, positively impacts their sense of personal agency (Hallinan, 2008; McLaughlin & Talbert, 1990). Further, classroom conditions shape student self-efficacy and sense of belonging in an academic community, which in turn influence academic behaviors (Farrington et al., 2012). In addition, researchers have long noted the importance of students' ability to set goals and regulate their own learning (Zimmerman, 1990). Through PASL's activities, students learn specific strategies to monitor their performance toward

achieving their academic goals—and the ability to evaluate their own learning is an important

metacognitive skill (Isaacson & Fujita, 2006).

After the initial implementation of PASL in three pilot schools (2014 –2015), we found

that administrators, guidance counselors, and teachers said that by engaging in rapid check ins as

well as goal setting activities, almost all students could identify an adult that cared about them.

Our survey data corroborate these positive outcomes. For example, ninth grade students in PASL

schools are more likely to say they had a teacher who checked in on their academic progress, and

they are more likely to say they discussed their goals and graduation requirements with teachers,

counselors, and administrators. Students in PASL schools reported a greater sense of belonging

at their school and that goal setting activities helped them set explicit goals and monitor their

own progress. Along with school support through educators meeting and talking about

students—particularly those in need of additional support and services—students increase their

sense of personal agency to meet their goals and also improve their self-efficacy beliefs. Further,

for students involved in PASL, schools report increased attendance, lower dropout rates, lower

discipline referral rates, and fewer students receiving Ds and Fs.

Project Design and Management Plan

We will implement PASL through a collaborative continuous improvement process involving

district and school stakeholders (Cohen-Vogel et al., 2015). Specifically, we aim to: (1) develop,

implement, and test a comprehensive PASL toolkit that will be a resource for administrators,

guidance counselors, and teachers; and (3) design a set of professional development materials

that can be used by schools implementing PASL. To meet these goals, we establish the following

objectives and outcomes for the ninth grade students who experience PASL: (1) improve non-

cognitive factors including sense of belonging, self-efficacy, personal agency, and goal setting;

(2) improve behavior as measured by attendance, dropout rates, and referrals; and (3) improve academic outcomes such as course grades, course passing rates, on-time grade promotion, and student achievement as measured by state assessments.

Project design. Participating schools include the 15 schools already scaling in PASL, and the new schools, phased in each year of the project. Each year of the project, participating schools will send an assistant principal, ninth grade guidance counselor(s), and several teacher leaders to fall and spring SIDT meetings and a Summer Institute. The DIDT, which will also meet each fall and spring, will be comprised of key district stakeholders (identified by the district), the principals and assistant principals of participating schools, and teacher leaders (identified by each school). The implementation of PASL and the development of the PASL toolkit and related professional development resources will occur during fall and spring SIDT and DIDT meetings, as well as the Summer Institutes. We will lead the SIDT meetings with support from the BCPS district administrators as well as the district coordinator and leaders from the SIDTs. As has been the practice for the last two years, we will work with district administrators who oversee the high schools in the planning and leading of the DIDT meetings.

At the daylong SIDT meetings in the first year, the early-adopter schools will build on their experiences to identify common PASL activities and strategies. In this process, they will provide both options that acknowledge adaptation, but also provide proven approaches. In the subsequent three years, the 15 high schools already scaling in PASL will serve as collaborative partners to the new high schools. In leading the PASL initiative, early-adopter administrators and teachers are in the unique position to share the successes and challenges they faced in implementation. Existing SIDT members will participate in two main activities: (1) They will first share how their school implemented the five components of PASL with the new schools,

and (2) they will engage in the continuous improvement process as they continue to refine and adapt PASL to their schools. New SIDT members will: (1) identify how they will adapt PASL to their school context, and (2) use plan-do-study-act to implement PASL.

During the two-hour DIDT meetings that occur immediately after the SIDT meeting days, district and school administrators will meet for two hours to learn about the progress of PASL and participate in its development and design at the administrative level. As it is critical to have the support of school and district leadership both for implementation and sustainability, district and school administrators will: (1) hear from SIDT leaders about the success and challenge on PASL and, (2) provide their feedback and perspective on moving forward.

We believe that much can be learned during the SIDT and DIDT meetings as to how schools are adapting PASL to their local contexts. Drawing from the experience and expertise of the implementers, we will begin to assemble and document the variety of ways in which schools adopt the PASL components to their unique school context. During the first year and a half, we will use time during the SIDT and DIDT meetings to break participants into groups to identify and develop the materials to be included in the toolkit that will be one product of the proposed project. The toolkit will be organized around the five practices of PASL and will include the logic of PASL; explanations of PASL as a systemic practice that bridges academic, social emotional, and behavioral activities; descriptions of the five practices and specific activities drawn from the schools; as well as extant research on how PASL will improve academic, non-cognitive, and behavioral outcomes. It will also describe the continuous improvement process used to develop and improve PASL. Concurrently, we will design the professional development materials for schools new to PASL.

In the later half of Year 2, we will begin piloting the toolkit and professional development materials during the SIDT and DIDT meetings, soliciting feedback and critique from members of these groups. We will refine the toolkit and professional development materials during Years 3 and 4 as new schools are phased into the project.

In addition to soliciting assistance with the development of the toolkit and design of the professional development, during the day-long fall and spring SIDT meetings, we will lead each school team in their continuous improvement process. Each school will identify specific goals in each of the five PASL practices, reflect on the implementation of these goals, evaluate the success of PASL, and, drawing from the results of their analyses, determine a new set of goals to be assessed at the next SIDT meeting.

Each summer, we will also convene the SIDT members for a two-day Summer Institute aimed at setting goals for the upcoming year as well as introducing new schools to PASL. The Summer Institute will have several general sessions aimed at building a PASL community across schools as well as several concurrent workshops staffed by the research team and leaders from more experienced PASL schools. The workshops will be differentiated by years of experience in PASL, with the new schools learning about PASL and the more experienced schools working at deepening and sharing their practices.

Finally, once a year, we will conduct site visits to each PASL school to monitor implementation and provide feedback to the schools. During these visits, we will interview key stakeholders including each school's principal, assistant principal, and ninth grade guidance counselor(s), as well as conduct a focus group with teachers and students at each school. After each visit, we will prepare a summary report of our findings for all of the schools.

Goals, objectives, and outcomes. Table 1 in Appendix J provides a timeline of activities

and outlines the goals, objectives, and outcomes to be achieved by the project. As explained in

Table 1, there are four phases of the project. The first phase of the project will be a planning

phase, and that will occur in Spring 2017. In the second phase, which occurs from Summer 2017

through Spring 2018, we will work with the 15 existing PASL schools to (1) share and document

the components of PASL for the PASL toolkit and professional development materials and (2)

assist in the continuing implementation of PASL. In the second phase, Summer 2018–Spring

2021, we will add five additional schools a year over three academic years. In this phase, we will

work with the schools to: (1) refine the toolkit and professional development materials and (2)

assist in the continuing implementation of PASL. By the end of first year of implementation, we

expect to see changes in students' non-cognitive outcomes (sense of belonging, self-efficacy,

personal agency, and goal setting), specifically an increase by .25 standard deviations on the

New General Self-Efficacy Scale, the Self-Efficacy for Self-Regulated Learning Scale, and the

Teacher-Student Relationships Subscale of the Student Engagement. By the end of second year

of implementation, we expect to see changes in students academic and behavior outcomes,

specifically, we expect schools to report a 5% decrease in students on the D and F lists, 5% fewer

behavior referrals, 5% increase in attendance rates, 5% increase in course passing rates, and .25

SD increase in student achievement. In the fourth phase, Summer 2021–Fall 2021, we will

finalize the toolkit and professional development materials for dissemination to other school

districts across the state and country.

Management plan. In our plan to implement and scale PASL to all 30 traditional high

schools, we will build and expand on the SIDT and DIDT structure already in place. In the first

year, we will draw on the experiences of the current PASL schools to identify the different

strategies they have employed in their construction of PASL at their schools. The fifteen schools

will continue to refine and iterate their PASL practices while sharing these practices with the

current group to build a draft toolkit and professional development practices. Between summer

2018 and spring 2021, we will test the toolkit and practices in 15 additional high schools.

Through this approach, we will build capacity for PASL and the continuous improvement

process in all thirty high schools. At the end of the grant, we will publish the toolkit and

professional development materials so that they are accessible to schools and districts across the

country.

The research team and the district coordinator will oversee all aspects of the project

including organizing the SIDT and DIDT meetings, providing training and technical assistance

to the SIDT and DIDT members, supporting the SIDT and DIDT members in the continuous

improvement process, conducting site visits, developing school reports containing findings and

feedback to help schools iterate on PASL, and coordinating with the independent evaluator. Dr.

Stacey Rutledge at FSU will serve as project lead. Dr. Rutledge is Associate Professor in the

department of Educational Leadership and Policy Studies at FSU. She has been the project

investigator at FSU for the NCSU. Dr. Marisa Cannata is the director of the NCSU at Vanderbilt

University. Through this work, both Drs. Rutledge and Cannata have overseen the initial

development of PASL and the DIDT/SIDT network processes. Drs. Rutledge and Cannata have

participated in the DIDT meetings, facilitating sessions and supporting the continuous

improvement process. Dan Traeger, a former BCPS high school principal, has served for the last

five years at the district liaison for NCSU in Broward County. He is well respected by

administrators and teachers in BCPS and serves as the local contact who can coordinate with

district and school administrators and teachers alike.

BCPS district and school staff will be responsible for implementing PASL, managing daily activities, and providing relevant data. BCPS will also recruit new PASL schools and encourage existing PASL schools to provide mentorship to the new schools. With the research team, they will co-organize the fall and spring DIDT meetings.

RTI International will conduct the independent evaluation and collaborate with us to develop conference presentations and articles to disseminate study results. RTI's evaluation will provide the principal investigators and officials in BCPS with actionable feedback throughout the study so that data driven refinement to PASL can be made prior to implementation in new schools. Prior to each Summer Institute, RTI will provide the Principal Investigators with interim reports on the prior academic year's data collections for use in planning content for the Summer Institutes. RTI has designed a rigorous evaluation designed to provide student level evidence that meets WWC standards. RTI is a well-respected research firm that has conducted evaluation studies for The U.S. Department of Education, The National Science Foundation and many other federal, state and local organizations. RTI's lead will be Dr. Jeffrey Rosen who will take responsibility for coordinating with the principal investigators and managing all evaluation tasks. As co-Investigator on NIH and Spencer Foundation funded grants, Dr. Rosen successfully completed many of the same management tasks he will be expected to complete on the proposed project. Dr. Rosen will be assisted by an RTI team with a broad range of scientific and management expertise (see Appendix F). Dr. Rosen (and other RTI staff as needed) will meet with Dr.'s Rutledge and Cannata biweekly by phone or email to discuss upcoming work and monitor progress and will be involved in all discussions between the research team and BCPS officials.

Procedures for ensuring feedback and continuous improvement. As we have described, our model of implementation is predicated on a collaborative continuous improvement model in which schools engage in continuous improvement as a strategy for implementation. Through the SIDT, DIDT, and Summer Institutes, we will calibrate professional development to the schools that is responsive to the challenges they report during implementation.

In addition to the collaborative continuous improvement model that we have described above, we have numerous other strategies for ensuring feedback. We will keep detailed field notes and audio record every SIDT and DIDT meeting so that we have a record of issues that arise. Further, we will conduct short online surveys at each SIDT and DIDT meeting to assess the progress of implementation as well as the process of building the toolkit and professional development materials. As discussed earlier, we will also conduct yearly site visits to Broward County in which we interview key stakeholders and visit PASL schools to assess the nature of implementation. During these visits, we will interview key stakeholders and conduct focus groups with teachers and students in the schools that are implementing PASL (five schools in 2018–2019; 10 schools in 2019–2020, and 15 schools in 2020–2021). Checking in on each school's implementation will afford us additional opportunities to calibrate our professional development to meet the needs of implementers. As discussed above, RTI will provide us with interim reports on each academic year's data collection, which we will share with participants at the Summer Institutes. We will also have monthly meetings with RTI to apprise them of the progress of the SIDTs, DIDT, and Summer Institutes, as well as on implementation.

Finally, we will employ direct strategies for feedback. As we have done in the past, we will have participants fill out feedback forms and/or conduct online surveys at the close of the SIDT and DIDT meetings as well as the Summer Institutes in order to capture areas of success as

well as areas for improvement. After each SIDT and DIDT meeting, we will prepare a memo that outlines successes and challenges and implications for the work. We will share and discuss the memos in our management meetings. Taken together, we believe that the continuous improvement process, the site visits, the fieldwork at the SIDT and DIDT meetings and the Summer Institutes, sharing the findings from RTI, and checking in regularly with RTI, as well as feedback forms and surveys will provide multiple mechanisms for ongoing feedback.

Dissemination plans. We will use multiple approaches to disseminate information on the project. First, we will continue to use the NCSU website as a resource for sharing our milestones, our biographies, and our conference papers and publications. We update the website regularly and believe it provides immediate information on our progress and products. In addition to the website, we will produce an annual report that we will share with the district prior to each Summer Institute in which we share the findings from our Spring site visits. We believe this report will provide important feedback to stakeholders and will apprise readers on the progress of our project. We will also present PASL as a strategy to improve academic, non-cognitive, and behavior outcomes regularly at both academic and practitioner-oriented conferences, and we will publish on PASL in academic and practitioner-oriented journals. Moreover, we will use FSU's, Vanderbilt's, and RTI's public relations offices to develop and disseminate press releases. Finally, we will publish the PASL toolkit and PASL professional development materials with a commercial publisher so that other districts and schools interested in this approach have a resource that provides the genesis and logic of PASL, the research supporting it, numerous strategies for implementing each of the core components, and an outline of the continuous improvement strategy to accompany implementation. Taken together, we will seek out both practitioner and research venues to ensure a wide distribution to all interested audiences.

Quality of Project Evaluation

The following sections outline RTI's comprehensive plan for evaluating the implementation of PASL in schools and student outcomes related to PASL participation. RTI has a long history of successfully completing complex evaluations that include collecting student records and developing and administering high quality teacher and student surveys. RTI proposes a quantitative evaluation of teacher implementation and multiple studies designed to assess the effectiveness of PASL practices on students' non-cognitive skills (i.e., self-efficacy, self-regulation, personal agency, and the sense of belonging in school) and behavioral and academic performance. Table 1 in Appendix J presents a timeline and sequence for all evaluation and data collection approaches and activities. RTI's evaluation approach includes (1) web-based surveys to assess ninth grade teachers' PASL classroom implementation and ninth grade students' non-cognitive skills, (2) difference-in-differences design to evaluate students' self-efficacy, self-regulation, and personal agency, (3) matched comparison of students' sense of belonging in school, and (4) a series of historical and cohort analyses using BCPS administrative records to assess academic and behavioral outcomes (e.g., grades, attendance, referrals).

Assessment of PASL implementation. As depicted in the logic model (see Appendix D) the PASL curriculum consists of numerous components delivered at different times throughout the year. The key research questions to be addressed in this implementation evaluation are: (1) To what extent was PASL implemented with fidelity by teachers? (2) Were any particular components more or less likely to be implemented well? PASL implementation will be assessed at the end of each school year through teacher surveys of their fidelity to core PASL activities throughout that year. Ninth grade teachers in participating schools will be asked to complete an electronic survey each spring. The 2017–2018 academic year will be devoted to survey item

creation and development in schools already exposed to PASL. Then, RTI will turn to actual

implementation evaluation in the following years in which five new schools receive PASL

annually. In these new schools, we estimate surveying 30 teachers per school each

implementation year (2018–2019, 2019–2020, and 2020–2021) for a total of 150 teacher surveys

annually. For this fidelity of implementation analysis, we will seek survey data from 450 ninth

grade teachers implementing PASL for the first time. The survey will be based on instruments

created for assessing teacher implementation during the pilot of PASL and will be designed

during the first year of the study in parallel with the development of the PASL toolkit and

professional development materials, allowing for strong alignment between what teachers are

instructed to do and measures of what they are supposed to have done. Survey items will be

based on those in the implementation instrument—for which we have data confirming reliability

and validity—with adaptations to account for the further development of the PASL toolkit and

professional development materials. Given that research evidence for the implementation of non-

cognitive curricula are lacking (Organisation for Economic Co-operation and Development,

2015), the creation and validation of this instrument will be a major contribution of this

evaluation study for both future implementation of PASL and empirical study of such curricula

in general. To this end, we will employ factor analysis to confirm that the items align with

factors representing fidelity to the major components of the PASL program. Validity will be

determined by consulting the program's creators, educators, and evaluators. Both reliability and

validity will continue to be assessed each year as we analyze teacher responses, and items will be

revised as necessary. In addition, while the core set of items will remain consistent throughout

the study, new items to assess any new indicators of fidelity that become apparent in the course

of implementation may be created. Each year, RTI will compile a summative report of

implementation in each school. The report will also include formative conclusions and recommendations for improving implementation, for example, suggesting the addition of implementation drivers like additional performance feedback for teachers. Ultimately, RTI will provide a descriptive analysis of implementation across three years of PASL classroom implementation, including whether implementation levels increased, decreased, or stayed the same across schools in each year of new PASL implementations. RTI will also (1) aim to produce a well-validated implementation instrument for use in future PASL implementations; and (2) conduct exploratory analyses of the association between implementation levels and outcomes, assuming there is sufficient variation in each.

Impact evaluation. RTI's impact evaluation will address the following four sets of questions: (1) *Overall effects*: Does PASL improve ninth graders' (a) self-efficacy, self-regulation, and personal agency; (b) sense of belonging and commitment to schools; (c) school behaviors including attendance, dropout rates, and referrals; and (d) academic performance? (2) *Effects on high-need students*: What are PASL's effects on ninth graders who received a high proportion of Ds and Fs (project definition of high-needs students) in eighth grade? Compared with other ninth graders, do high-need students benefit more from PASL? (3) *Long-term effects*: Does exposure to PASL in ninth grade continue to benefit students in later years? (4) *Continuous school improvement*: Do schools that participate in PASL see continued improvement in ninth graders' academic and non-cognitive outcomes over time as a result of PASL scaling? The research design examines PASL effects both within (using survey and administrative data) and across years (using administrative data).

Evaluation design. Guided by the What Works Clearinghouse Evidence Standards with Reservations, RTI proposes several quasi-experimental design studies with careful selection of

comparison groups and rigorous controls for selection bias and the threat of maturation. Please see Table 2, Appendix J for a timeline and sequence for all evaluation and data collection approaches and activities. Also, technical details are available in Appendix J, Figure 4.

The evaluation of students' self-efficacy, self-regulation, and personal agency will employ a pre- and posttest with a matched-group design and will use survey data to assess the immediate effects of PASL on students' ninth grade outcomes. RTI will assess changes in ninth graders' survey responses from the beginning to the end of the first implementation year in the 15 schools (five schools each year) that will implement PASL in 2018–2019, 2019–2020, and 2020–2021. To rule out natural maturation of students as a confounding factor, RTI will construct a comparison group using ninth grade survey respondents in the first year of the project (2017–2018), when none of the 15 schools will have implemented PASL. RTI then estimates administering pre- and posttest surveys to approximately 500 ninth graders (2,500 total ninth graders per year) in each school administering PASL for the first time. A propensity score-based weighting method, marginal mean weighting through stratification (Hong & Hong 2009; Hong, 2010), will be used to equate the composition of the treatment and comparison groups on the basis of students' demographic information and their behavior and academic performance in eighth grade. RTI assumes that the weighted groups have similar maturation rates over ninth grade and, thus, expects to obtain an unbiased estimate of PASL effects through a difference-in-differences approach that compares trends between the two groups.

The evaluation of sense of belonging in and commitment to school will use a posttest only with a matched group design in which ninth graders' survey responses at the end of year 2017–2018 serve as a counterfactual in the absence of PASL and will be contrasted against the responses of treated ninth graders at the end of the first PASL implementation year. The

exclusion of a pretest component in this part of the evaluation study is justified by students'

limited school experience at the beginning of ninth grade. Given that students' school-related

beliefs may be subject to the influences of other factors such as principal leadership, school

average academic performance, and student demographic composition, we will use adaptive

centering with random effects (Raudenbush, 2009) to restrict comparisons to within schools

only. To remove potential differences between students within schools, we will control for their

demographic characteristics and pre-ninth grade behavior and academic performance.

RTI's evaluation of student behavior and academic outcomes will use administrative data

from BCPS, the natural roll-out design in PASL scaling (i.e., only five schools will be rolled out

per evaluation study year), and will be informed by two sets of analyses. The first set of analyses

will focus on ninth grade outcome trends across 30 BCPS high schools (the 15 schools that

began implementing and scaling in PASL before the evaluation study and the 15 schools that

will implement and scale in PASL during this study). RTI expects to compare approximately 10

years of trends (2010–2021) in student outcomes before and after the introduction of PASL.

Schools that have not yet begun PASL scaling in a year when other schools start to adopt the

intervention will form the comparison group in that year. This approach, also known as

interrupted time-series with switching replications, is powerful in controlling most threats to

casual inference (Shadish, Cook, & Campbell, 2002).

The second set of analyses uses cohort design and will track the academic performance

and behaviors of students over time. RTI will compare student outcomes before and after

receiving PASL (i.e., performance during middle school versus during high school) in ninth

grade. Students who receive PASL in ninth grade from 2017 to 2021 will be considered the

treated group. Students from BCPS who are enrolled in ninth grade during the same period but

who have not yet been exposed to PASL will serve as the comparison group. In other words, students from the 10 high schools where PASL will be implemented in 2018–2019 and 2019–2020[1] will form the comparison group for this analysis. When the final five schools are exposed to PASL, no comparison group data will be available, and therefore these schools will be assessed using a pre- and post-intervention comparison (see Appendix J, Figure 4 for more specifics on this approach). Both sets of analyses will allow RTI to compare between the corresponding comparison and treated group deviations from academic performance or behavior trends before a given time of intervention introduction. Together, these analyses will provide robust estimates of PASL effects.

PASL is intended to be a systemic intervention with lasting effects through high school. As such, we will evaluate long-term outcomes to determine if the PASL intervention in the ninth grade effects students in subsequent years. Administrative data will be used in the cohort analysis to examine tenth, eleventh, and twelfth grade student outcomes after a student's ninth grade PASL intervention. Similarly, RTI will also be able to examine the continuous improvement of schools by extending the trend analysis beyond the first implementation year, thus providing evidence of PASL's ability to sustain outcomes over time. These long terms analyses, in conjunction with RTI's examination of the direct, ninth grade effects described above, will provide a comprehensive assessment of PSAL. Details on RTI's approach to assessing long term and continuous outcomes can be found in Appendix J, Figure 4.

To address questions related to effects on high-need students, RTI will use similar approaches as previously described to examine PASL effects within the subpopulation of high-need students and that of other students. RTI will contrast observed effects between the two subpopulations to assess the assumption that high-need students benefit more from PASL than

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[1] 10 comparison schools will be available in 2018–2019 and five in 2019–2020.

other ninth graders. Our statistical analytic approaches are detailed in Appendix J, Figure 4.

Student level data. To measure student self-efficacy and the related concept of personal agency, RTI will use the New General Self-Efficacy Scale developed by Chen and colleagues (2001) (see Appendix J, Figure 1). The scale exhibits strong psychometric properties, including internal consistency scores from .85 to .90, stability coefficients ranges from $r = .62$ to .65, and evidence of a unidimensional factor structure as confirmed using exploratory and confirmatory factor analysis (Chen et al., 2001; Chen, Gully, & Eden, 2004; Scherbaum et al., 2006). To measure self-regulation, RTI will use the Self-Efficacy for Self-Regulated Learning Scale (Zimmerman et al., 1992). This subscale exhibits an internal consistency score of .87 and a validated one-factor structure (Zimmerman et al., 1992; Zimmerman & Martinez-Pons, 1988) (see Appendix J, Figure 2). To measure school connectedness and student-teacher relationships, RTI will use the Teacher-Student Relationships subscale of the Student Engagement Instrument (Appleton et al., 2006) (see Appendix J, Figure 3). This subscale exhibits an internal consistency score of .88, and several studies have validated the factor structure and validity of the instrument and its subscales (Betts et al., 2010; Lovelace et al. 2014; Martin, 2007).

Administrative records collected from BCPS will be used to assess more traditional academic and behavioral outcomes such as disciplinary referrals, attendance, grades, and test score performance and will serve as (1) important outcomes in the assessment of PASL and (2) covariates in the models presented in Appendix J, Figure 4. The research team has a number of years of experience collecting administrative data from BCPS, and RTI will work within the existing processes to collect the data needed for the evaluation study.

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