Connecting the Dots for Children in Afterschool Programs

Evaluation of the PAX Good Behavior Game in Afterschool Settings

FINAL REPORT TO

The Wallace Foundation

LEGACY Together

Five-Year Research Study 2008–2013

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The Pennsylvania State University
University Park, PA

Professor Emilie Smith, PI

January 31, 2014

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We acknowledge Dr. Dennis Embry, developer of PaxGBG, the Paxis Institute's version of the Good Behavior Game.

Dedication

This ambitious research project could not have taken place without the visionary support of The Wallace Foundation, and for that support we are extremely grateful.

We also received support from the William T. Grant Foundation and the National Institutes of Health/ National Institute on Drug Abuse.

The LEGACY Together research team would like to thank all of the afterschool programs directors, staff, children, and their parents for their cooperation and enthusiastic participation in this research effort. Their collaboration has enabled the team to gain important insights into ways to enhance the quality of the afterschool experience.

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Executive Summary

The LEGACY Together research team was created to investigate ways to help afterschool programs promote citizenship, skills, and positive youth behavior that might ultimately be associated with preventing delinquency and substance abuse. The acronym stands for **L**eading, **E**ducating, **G**uiding, **A C**ommunity of **Y**outh Together.

This interdisciplinary group of Penn State social scientists (including sociologists, psychologists, educators, and statisticians) has devoted five years of intense study to the effective implementation of a behavior management system in afterschool programs across central and southeastern Pennsylvania, with more than 1,200 individuals involved. Their efforts have revealed 1) the important practical aspects of the implementation process that impact overall success and 2) the clear benefits of this behavior management program for students and afterschool programs.

Since we began this study the role of afterschool programs has clearly become even more important to children and parents. The increased number of parents in the workforce has resulted in 8.4 million children in afterschool care. Recent studies reveal that more than twice as many children (18.5 million) would participate in afterschool care if it were available (Afterschool Alliance, 2008). Afterschool settings can range from public school facilities staffed by teachers and paraprofessionals, to private for-profits and nonprofit agencies and organizations staffed by caregivers with vastly different qualifications. Unlike school settings, afterschool care may not be focused primarily on academic support, but may also feature socialization, physical activities, crafts, music, and games.

Whatever the setting and programming, afterschool programs have tremendous opportunities to positively impact children's growth and development. Children who feel safe and comfortable in their afterschool programs may form new friendships, add to their social networks, form close relationships with adult mentors, learn new skills, and have additional opportunities for

academic learning and support in an informal setting. In addition, the long-term benefits of quality afterschool programs include reductions in problem behaviors (including drug usage) and increased academic performance (Durlak, Weissberg, & Pachan, 2010; Gottfredson, Gerstenblith, Soule, Womer, & Lu, 2004; Riggs, 2006; Tebes, Feinn, & Vanerploeg, 2007; Vandell, Bolt, & Piece, 2010). In addition, practitioners point to the long-term benefits to future employment such as acquiring "soft skills" such as cooperation, sharing, and good communication skills in high-quality afterschool settings (Weisburd, 2005).

> "Ultimately, LEGACY isn't just about winning a game: it's about connectedness. LEGACY enhances positive relationships with adults and peers, and these relationships really matter.""
>
> *— Emilie Smith, Principal Investigator*

Research has shown that the quality of afterschool programs matter in that programs with low levels of monitoring and supervision are not beneficial to youth (Mahoney, Strattin, & Lord, 2004). If supervision is not adequate, children can become engaged in inappropriate activities. Thus helping to "strengthen afterschool programs" so that they not only provide sufficient monitoring but also engaging and enriching activities (Institute of Medicine and National Research Council, 2002; Larson, 2000) is essential. In the early stages of this study, our researchers quickly learned that many elements must be incorporated to gain a complete understanding of the impact of quality on afterschool programs. We anticipated that these elements would also be related to the programs' ability to implement something entirely new into their regular habits and activities. While we did not select for high-quality programs, we did use several measurements to study how quality related to the implementation of our intervention.

Though substantial attention has been given to the importance of appropriate structure, supervision, supportive relationships, and engagement, much less prescriptive information has been provided on effective practices that could assist staff in helping children manage their behavior. It is difficult to provide engaging and supportive program elements if there is limited ability to manage the program and activities. Much more research has been conducted in school settings on supportive and effective approaches to managing behavior (Barrish, Saunders, & Wolfe, 1969; Bradshaw, Koth, Bevans, Ialongo, & Leaf, 2008; Kellam et al., 2008). Classroom teachers and afterschool staff alike agree that a behavior management system is crucial to maintaining order in any group setting involving children (Hudson, 2012). Many teachers and staff members are inadequately prepared to implement thoughtful strategies for behavior management.

One highly effective and well-researched behavior management method is the Good Behavior Game (GBG). GBG has been used by classroom teachers since its creation in 1967 by a fourth-grade teacher, in collaboration with a graduate student and professor at the University of Kansas (Barrish et al., 1969). The success of the GBG in both increasing on-task time in classrooms and reducing disruptions has made the 1969 paper a frequently cited reference for behavior change studies.

The goal of the present five-year study was to implement the Paxis Institute's version of the Good Behavior Game (PaxGBG) in afterschool programs in diverse settings to determine whether the intervention produced beneficial effects on children's behaviors (Embry et al., 2003; Embry et al., 2010).

Chapter 1 describes the conceptual background and rationale for the overarching project. Our conceptual logic model attends to the diversity of community and program characteristics and how we expect our approaches might affect both the afterschool program settings and the individual youth. We hope that our approach will not only

prevent problem behavior but also promote positive youth developmental outcomes. With that in mind, initially, we undertook a test of these premises by studying how children's positive attributes, namely children's collective efficacy, measured by their perceived connectedness and empowerment, aspects of our theoretical model, might be related to their problem behavior and adjustment. Collective efficacy has been widely studied among neighborhood adults (Sampson, Raudenbush, & Earls, 1997) and among teachers (Goddard, Hoy, & Hoy, 2004). The idea that children could feel connected and empowered has been less studied. We provide findings on the test of our idea that collective efficacy, that is connectedness and agency (concepts found to be important aspects of quality in afterschool), would be related to youth emotional adjustment and behavior.

Chapter 2 provides more information on our intervention approach. It details the research and practice model we developed for science migration of the behavioral management strategy, PaxGBG, from school settings to afterschool settings. The research design of our preliminary study is described as well as characteristics of the populations we studied, and what data were collected.

Chapter 3 gives our study design, characteristics of the research sample populations, measures, and methods used to assess outcomes.

Chapter 4 examines the interaction of organizational capacity and the ability to implement an evidence-based strategy, PaxGBG. We present the theoretical framework for our implementation of research-based strategies for providing an afterschool intervention to staff and children. We viewed our work from the Interactive Systems Framework model proposed by Wandersman and colleagues in planning, support, and delivery of the intervention (Flaspohler, Lesesne, Puddy, Smith, & Wandersman, 2012; Wandersman et al., 2008). Recognizing the differences between afterschool and in-school settings, we anticipated that the existence of some variations in afterschool programs, which we describe, would affect the successful implementation of PaxGBG. What has emerged is a story of types of capacity that serve to enhance the implementation of PaxGBG in afterschool settings.

Chapter 5 presents the effects of implementation of PaxGBG on both the afterschool settings and on children's behaviors. We present our model for the interaction of setting quality and implementation

fidelity, and how these relate to child behavioral outcomes.

Lastly, in the Conclusions, we discuss some of the strengths and limitations of the study. We also examine future directions for research, practice, and policy. In concluding this report, we summarize our findings on the migration of the PaxGBG behavioral strategy to diverse types of afterschool programs, serving children of various racial-ethnic and socioeconomic backgrounds located in a range of urban, suburban, and rural geographic locales. Some of our work is especially attuned to the role of how neighborhoods can impact youth, especially ethnic minority youth who face a challenge in maintaining a positive sense of self and identity. We also explore how connectedness to other settings, like school, might foster the positive development of children in terms of identity, social, and academic success.

How does successful implementation of PaxGBG in afterschool programs impact children's long-term ability to avoid violent behaviors, drug use, and teen pregnancy as these adolescents mature into their teens and early adulthood? Longitudinal studies similar to those used to document the long-range positive outcomes for school-based GBG will need to be done to determine the answer.

To connect the dots and complete the picture of afterschool-based PAXGBG as a method of strengthening afterschool program experiences for young children, these longitudinal studies are very important, and if research funding is obtained, will likely continue to link with our extensive foundational data.

Yet, in the short term, we are also very encouraged to be able to demonstrate in practical terms how in just one academic year, with intense training and coaching, this powerful behavioral tool can be put into practice on a daily basis to improve the atmosphere for afterschool programs by improving children's behavior. This suggests that widespread implementation of PaxGBG in afterschool programs may be significantly beneficial to staff, directors, children, and parents.

Encouraged by these findings, we wish to pursue the development of PaxGBG into a practical system for afterschool programs that may be implemented by practitioners across the country at a lower cost and with greater speed than has been possible thus far.

Chapter 1:

Background and Introduction: The Importance of Children's Connectedness and Empowerment

This chapter presents the background and introduction to our study. We explain the conceptual and theoretical approach to understanding and strengthening the afterschool programs that serve youth.

The Children at the Heart of This Research Study

With generous support from The Wallace Foundation, we explored the feelings, attitudes, and behaviors of elementary-age children in relation to their participation in afterschool programs. Our goals have been two-fold: to 1) prevent problem behavior, and 2) promote positive youth development with an attention to the ways in which their programs and communities might help or hinder this process. Our concern has been to find ways to help children develop self-control and beneficial habits of behavior that foster positive youth development and hopefully produce lasting results into these children's teens and early adulthood. Children's participation in high-quality afterschool programs is expected to contribute to positive attitudes and behaviors that predict a long-term positive trajectory for these children in the future.

Why Do Research in Afterschool Programs?

Afterschool programs are rapidly becoming a routine part of the day for many children in the United States. The need for afterschool programming is particularly high among minority children and children whose parents are holding down more than one job or are single parents (Hynes & Sanders, 2011). These children need a supervised, safe place to be after the school day, and in addition, can benefit from relationships with supportive adults. Safety concerns are valid. Research has shown that unsupervised elementary and middle school children have an increased likelihood of engaging in risky behaviors such as drug use, alcohol consumption, and sexual experimentation (Barber, Stone, Hunt, & Eccles, 2005; Osgood, Wilson, Bachman, O'Malley, & Hohnston, 1996; Snyder & Sickmund, 1995).

> "The students—you just see them blossom into little mini citizens of their world."
> *— ASP Staff*

Many studies have shown that the afterschool hours of 3–6 p.m. are a dangerous time for youth in two ways—youth committing crimes and youth being victims of crime by adults. Late afternoon to early evening are the prime times for youth crime (70% of all crimes committed by youth). During these hours, children are also most vulnerable to violent crimes perpetrated against them by adults. On school days juveniles are 90% more likely to be violently victimized in the four hours between 3–7 p.m. than in the four hours from 8 p.m.–12 midnight (Snyder & Sickmund, 1995).

The focus of The Wallace Foundation-funded project is the improvement of afterschool settings that serve youth, paying particular attention to how these settings reduce problem behaviors among youth and foster important social processes, including supportive relationships, belonging, and collective efficacy among youth and staff of diverse racial/ethnic and social backgrounds.

Despite these alarming statistics, it is becoming increasingly more difficult for many families in the United States to provide a safe and secure afterschool program for their children in elementary, middle school, and high school. As noted earlier, 8.4 million children are enrolled in afterschool programs—more than twice as many (18.5 million) would utilize afterschool care if it were available (Afterschool Alliance, 2008). The fact that 66% of all children have both parents in the workforce, and 77% of all single parents are in the workforce, is evidence of a great need for care and a great opportunity for providers to understand and provide high-quality afterschool care for children.

> "Pax is some good things that you do."
>
> "You work to get what you want."
>
> "From Pax I've learned how to be more nice to other people—even the people that you really don't like that much."
>
> — *Three children explain PaxGBG*

Visioning an Ideal Afterschool Program

As we review our research findings to date, it is clear to us that there is a valuable opportunity here to help improve the quality of afterschool settings. While safety is a primary consideration in afterschool programs, rather than simply safeguarding the children through adult supervision, we are interested in identifying ways to create an afterschool setting that is enjoyable for students and staff, where the atmosphere is friendly and warm, and where many types of learning (including social and personal) can take place (National Research Council and Institute of Medicine, 2002).

From a number of recent studies seeking to identify the elements of high-quality afterschool programs it is clear that in addition to safety, other features such as structure, organization, relationships, and the types of learning activities available are critical (Rhodes, 2005; Vandell et al., 2004; Yohalem, Devaney, Smith, & Wilson-Ahlstrom, 2012). Eight features were identified by Vandell in high-quality programs: 1) physical and psychological safety, 2) appropriate structure, 3) supportive relationships, 4) opportunities to belong, 5) positive social norms, 6) support for efficacy and mattering, 7) opportunities for skill-building, and 8) integration of family, school, and community.

Research focused on the types and delivery of learning activities that contribute to quality examined programs that included personal growth and social skills development in their mission statements. Research showed that these programs shared important characteristics, including practices that build youth skills that were sequenced, active, focused, and explicit (or S.A.F.E.) (Durlak, Weissberg, & Pachan, 2010).

A closer look at these practices, abbreviated "S.A.F.E.", highlighted the qualities in more detail. Activities designed to build social and/or personal skills that were "sequenced" would use developmentally appropriate language and activities to engage children of different ages and at different stages of development. Activities that were "active" would allow children to be both physically and mentally active during scheduled activities. Further, children were involved in planning and preparing certain activities to engage their sequential and long-range planning skills. Activities that were "focused" would have a particular purpose or end result in mind. Finally, "explicit" activities would be up-front about explaining to children the purpose of the activities and how they are designed to build certain skills.

Eco-developmental Model

Many of the influences on young children continually shape their attitudes and behaviors (Dishion & Andrews, 1995; Gorman-Smith, Tolan & Henry, 2006). From the earliest stages of infancy and childhood these influences expand outward in ever-widening spheres from family and home, to extended family, neighborhood, school, afterschool, and community. The Eco-development model shows

these spheres, and includes even wider social forces, media, and economic factors (Bronfenbrenner, 1977; Ogbu, 1981).

Approaches for preventing youth problem behavior have been developed in other settings that serve youth. Effective prevention and intervention approaches with families have been around for decades (Brody et al., 2004; Coatsworth, Pantin, & Szapocznik, 2002; Dishion & Andrews, 1995; Henggeler, Melton & Smith, 1992; Kumpfer, Alvarado, & Whiteside, 2003; Patterson, DeBaryshe, & Ramsey, 1989; Sanders, Markie-Dadds, Tully, & Bor, 2000; Smith, Gorman-Smith, Quinn, Rabiner, Tolan, & Winn, 2004). Approaches to supporting youth by supporting their families have demonstrated strong effects upon both the youth and families. Sustainability and broader implementation is the next frontier for family approaches that involve substantial personnel commitments and resources (Spoth & Redmond, 2002). The school is another setting that can have an impact upon youth and again, a number of approaches have been identified for schools (see, for example, Bradshaw et al., 2008; Greenberg, Kusche, Cook & Quamma, 1995; Kellam et al., 2008; Lochman & Wells, 2002; Shure & Spivack, 1982). In the past decade, the issue for schools is that they are charged with accountability and high-stakes testing that reduces the time and affinity for some schools and staff to be involved in prevention progamming (Mahoney & Zigler, 2006).

The time during the out-of-school hours presents another opportunity for working to prevent problem behavior, delinquency, and substance abuse among youth. First, the hours between 3 to 6 pm represent the time in which 60–70% of all youth crime is committed (Snyder & Sickmund, 2006). Secondly, a body of research in afterschool is beginning to

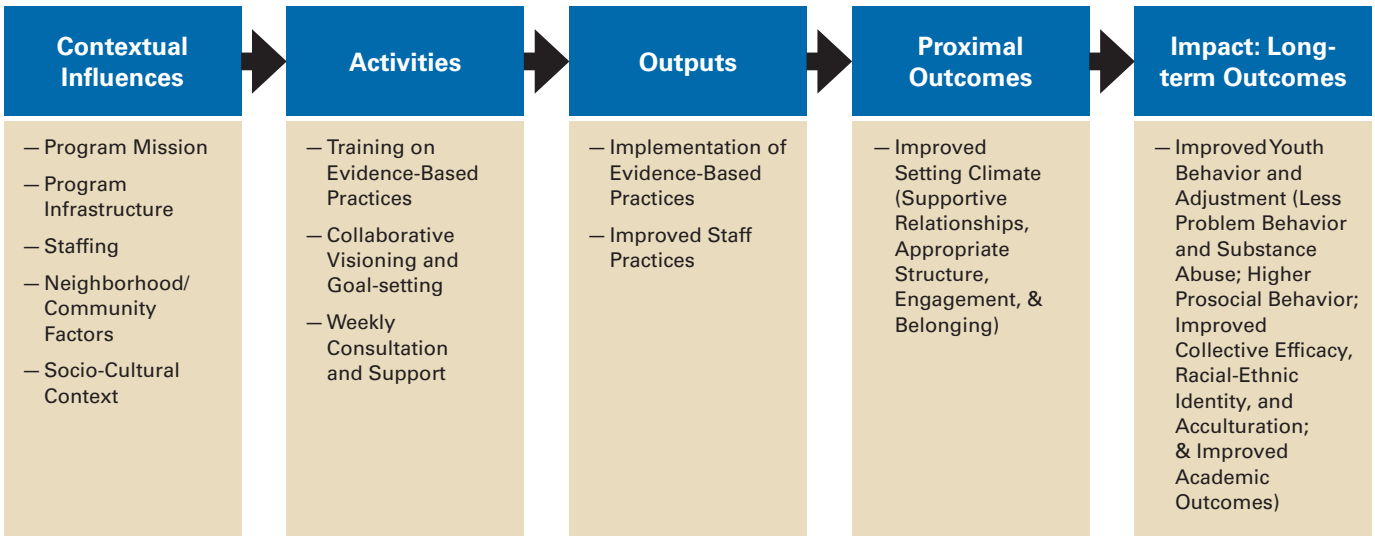
show that this setting can not only prevent problem behavior, but offers youth the opportunity to develop supportive relationships with adults and their peers, and to develop important academic and social skills that can prepare them for future academic and career opportunities (Alexander & Hirsch, 2012; Grossman et al., 2002; Hirsch, 2005).

How Afterschool Programs May Impact Child Outcomes

Afterschool programs are a more recent setting in which approaches to preventing youth problem behavior and promoting positive youth development are being developed and tested. The goal of the LEGACY Together project was to use research to strengthen the use of empirically-based practices in afterschool. We theorized that in considering how best to support programs, it is important to consider the program mission, staffing models, children served, the neighborhoods and communities in which the programs are located, the socio-economic status, as well as the race, ethnicity, and cultural values and norms of the staff, children, and families being served by these programs. We thought that this information would help us deliver support in ways that maintained fidelity in implementation, but also would allow us to make it more acceptable and feasible for the programs and participants to utilize research results to strengthen their programs. (In later chapters, we'll discuss in further detail how we attended to issues of race, ethnicity, and cultural and geographical diversity in our project.)

We expected that providing a training model, sensitive to the afterschool program setting and participants, would help to build ownership by engaging the staff and youth in developing a collaborative vision and goals for their program. This process would be augmented with periodic trainings (every 4–6 weeks) and weekly visits and support from a coach who could model, problem-solve, and support the afterschool staff. This process was expected to increase clear shared norms for youth and staff behavior, and to enhance collective efficacy, that is, a sense of empowerment that they could positively influence and encourage good behavior in the afterschool programs. We expected that with more collective efficacy, that is, encouragement from staff and peers to behave well, that youth would exhibit less problem behaviors, and the programs would have less chaos and misbehavior. The next section describes a test of a portion of our theoretical model that focuses upon collective efficacy and its role in youth behavior (Figure 1.1).

Figure 1.1: *Theory of Change Logic Model*



Testing Our Theoretical Model: Collective Efficacy and Behavior

Collective efficacy is a term developed in recent years to express the degree to which a group of individuals feel connected and are confident in their mutual willingness and ability to act on behalf of group members (Sampson, Raudenbush, & Earls, 1997; Smith et al., 2013). This is a construct that in essence means that the individuals in the group possess a sense of closeness and willingness to help each other. This feeling of belonging or "connectedness" is often seen in families, in neighborhoods, and in schools.

The theoretical underpinnings of this concept are based on the ideas of social cohesion and informal social control. When people feel connected to one another and share ideas about how to behave, less deviant and delinquent behavior are likely (Hirschi, 1969). Studies of collective efficacy conducted with adults in neighborhoods have shown that feelings of collective efficacy predicted lower levels of crime and violence (Sampson et al., 1997).

The "sense of a caring community" has also been examined in educational settings, exploring the degree to which youth feel close to one another and how this is related to children's academic achievement and behavior (Battistich, Schaps, & Wilson, 2004). One of this study's goals has been to determine whether youth collective efficacy is relevant for youth development and can be measured with reliability and validity. Positive findings would provide an important intermediary step for observing children's development of positive attitudes and behaviors over time. If this can be gauged accurately, our research team would have a short-term measure that relates to and predicts children's long-term behaviors.

Components of Collective Efficacy

In this research study the concept of collective efficacy is viewed as an individual child's perception of his/her group's connectedness and its willingness to intervene as a group to reduce problem behaviors. Connectedness can be equated with "group belonging" and efficacy can be equated with a sense of "group empowerment". This definition suggests two components to collective efficacy (Figure 1.2).

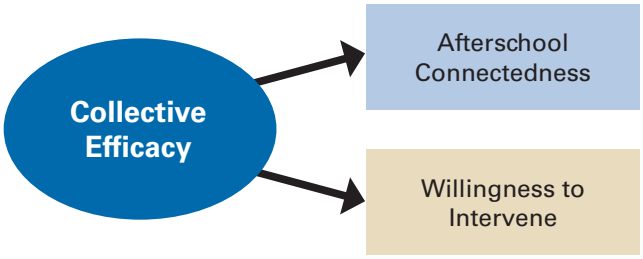
The Importance of Children's Connectedness and Empowerment

Two lines of research point to the importance of collective efficacy as a moderator of behavior among adults. Adult collective efficacy assessed at the neighborhood level was found to predict lower levels of crime and violence (Sampson et al., 1997). When groups of teachers exhibited collective efficacy, this was found to be a strong predicator of higher student achievement—more than race, ethnicity, or socioeconomic level (Goddard et al., 2000).

When teachers are considered as individuals to be strong in feelings of self-efficacy, this also impacted their students. Research on the social-cognitive theory of human agency has revealed the components of self-efficacy (Bandura, 2000). Contributors to the development of self-efficacy include gradual increases in challenges, observing the success of role models with whom one identifies, and realization and awareness of one's own success. When teachers as a group exhibit efficacy, children benefit from teacher confidence, structure, and guidance (Goddard et al., 2000).

In studies to determine whether children experience a sense of collective efficacy, results have suggested a relationship with children's attitudes, but did not address effects upon behavior (Johnson et al.,

Figure 1.2: *Conceptual Model of Children's Collective Efficacy*



2011). One concern is the lack of a reliable and valid measure of collective efficacy in children that relates to lower levels of youth problem behavior. It was important at the start of our research to develop a reliable measure of children's collective efficacy. We were interested in learning more about whether children's sense of collective efficacy was an important component of their afterschool program.

Measuring Collective Efficacy

We were intrigued by earlier research showing that adolescents who tested as having a sense of collective efficacy also had negative attitudes toward the use of violence (Johnson et al., 2011). In another study youth collective efficacy was correlated with assertive parenting behaviors by these children's parents (Simons et al., 2005). However, in neither case was the youth measure of collective efficacy sufficiently internally consistent. In addition, in neither study was the collective efficacy of the youth in the studies linked to their behaviors.

Because children are not merely the products of their families or other environments, but also agents of their own developing attitudes, ideas, and behaviors, we wanted to take a closer look at collective efficacy as it may exist in young (elementary-age) children, and how this sense of collective efficacy (or lack of collective efficacy) may relate to their behaviors in their afterschool programs.

We first needed a reliable and appropriate measure of collective efficacy in young children. Our studies led to the development of a new measure, the Collective Efficacy Among Children Scale (CEACS) (Table 1.1). Based on theories of social control and social cohesion (Hirschi, 1969; Sampson et al., 1997) we hypothesized that both connectedness and willingness to intervene would be inversely related to problem behavior and adjustment difficulties among children and youth.

Our newly developed Collective Efficacy Among Children Scale (CEACS) was rigorously tested for internal consistency reliability by exploring its factor structure and relationships to children's adjustment and behavior in hypothesized directions congruent with social control theory and the research that links adult collective efficacy to youth problem behavior.

Table 1.1: *The Collective Efficacy Among Children Scale (CEACS)*

*Collective Efficacy—Afterschool Connectedness Scale
I feel close to people at my afterschool program.
I feel like I am a part of my afterschool program.
I am happy to be at my afterschool program.
The staff in my afterschool program treat children fairly.
I have trouble getting along with the staff at my afterschool program. (recoded)
I feel that my afterschool program staff cares about me.
I feel safe in my afterschool program.
I like the children in my afterschool program.
**Collective Efficacy—Willingness to Intervene
If children are misbehaving, other children remind them to act their best.
If children say bad things to each other, other children remind them to say good things.
If we see one child hurting another child, we would tell them to stop.
We can be leaders and help other children do well in our program.
I feel like other children listen to me when I have something to say.
Children know how to stick up for a child who is being hurt or treated badly.
Children know how to do our work and not let others get us in trouble.

*Internal consistency relilability (Cronbach's α) is .82.
**Internal consistency reliability (Cronbach's α) is .90.

For the first part of the CEACS, a 12-item subscale was developed based on analyses of previous scales used to assess adult willingness to intervene, and reworded in more child-appropriate language. Findings from a small focus group of elementary school-aged children suggested further revisions to the wording. A subsequent pilot study of 100 students enabled us to examine the items psychometrically.

For the second part of the CEACS an 8-item subscale was developed to assess children's feeling of connectedness. Finally, for the third part of the new CEACS, the Strengths and Difficulties Scale was given to 2nd- to- 5th-grade students and used to assess children's emotional symptoms, hyperactivity, and problem behaviors.

These three measures were incorporated into a pre-test administered in a group setting to a total of 300 children in grades 2 through 5 in a variety of afterschool programs. Three distinct providers of afterschool programs were selected—these differed significantly in race-ethnicity, socio-economic level, and urban/suburban areas. Our goal was to test our collective efficacy scale in different settings to determine the validity of our measures across these variables.

Evaluated statistically, our data with children suggested that collective efficacy is indeed comprised of two related dimensions: willingness to intervene and connectedness. These results led us to look further at the relation of collective efficacy to children's behavior.

Relating Collective Efficacy with Behavior

We were able to analyze more fully the two dimensions of collective efficacy—connectedness and willingness to intervene—with measures of emotional symptoms, hyperactivity, and problem behaviors (Smith, Osgood, Caldwell, Hynes, & Perkins, 2013). The problem behaviors measured were vandalism; stealing; trying alcohol, wine, or beer; trying smoking; and trying marijuana. While most of the children (77%) had not engaged in any of these problem behaviors, there was obviously some overlap with a small number of children engaging in multiple problem behaviors (Figure 1.3).

When viewing the data for emotional adjustment among the children we can see low but significantly measurable levels of prosocial behavior, emotional symptoms, conduct problems, and hyperactivity among the data set (Figure 1.4).

In examining the collective efficacy relationship, the two dimensions—willingness to intervene and connectedness—related to youth behaviors in somewhat different ways (Figure 1.5). There was a

Figure 1.3: *Prevalence of Problem Behaviors in Children at Pre-test*

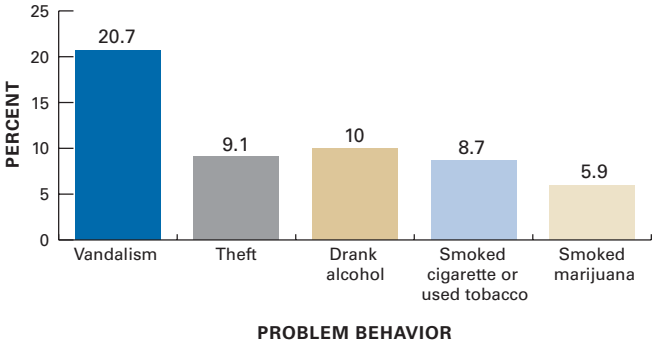


Figure 1.4: *Prevalence of Emotional Adjustment Measures in Children at Pre-test*

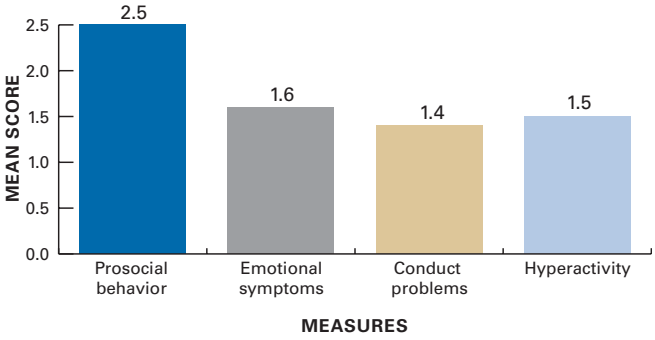
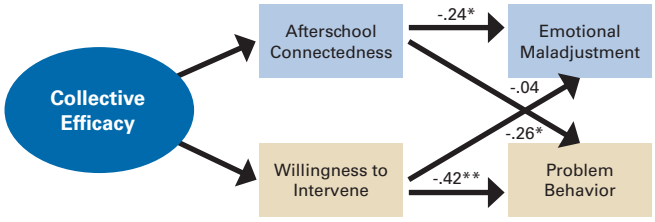


Figure 1.5: *Results of Hierarchical Linear Model of Two Components of Collective Efficacy in Relation to Children's Behavior and Adjustment*



Statistical significance: *p <.05 **p < .01

strong inverse relationship of connectedness with emotional maladjustment, such that children who felt more connected were less likely to report feeling sad, mad, or hyperactive. Connected youth also reported less misbehavior. However, having peers who they felt would speak up and intervene is more related to having less problem behavior (such as stealing, substance abuse, and vandalism).

Thus the dimension of willingness to intervene was strongly related to youth reporting fewer misbehaviors. Children who rated high on willingness to intervene rated lower on behavioral problems. Thus the data support the validity of the measure of collective efficacy with its two components of willingness to intervene and connectedness in their anticipated association with behavioral adjustment.

Moving From Theory to Practice in Afterschool Programs.

Our new scale is a significant contribution to the measurement of collective efficacy in children and a test of the degree to which not only adult, but also youth, collective efficacy might be a factor in youth behavior. Our theory of change logic model posits that a training and support model that is attuned to the youth, programs and communities served could strengthen afterschool programs by affecting the staff and the program, and ultimately the children. Our intervention approach, a behavioral management strategy that will be detailed in the following chapter, contains many elements that foster a feeling of group cohesion through the formation of teams, and group pressure to maintain self-control and good behavior so that one's team can win the game.

Chapter 2:

Science Migration of the Good Behavior Game: Connecting Research to Practice in a New Setting

Five-Year Research Goal

Our goal for this five-year research endeavor was to test the ability of a school-based behavioral intervention system that has been empirically supported by more than 40 years of research and found to produce similar positive behavioral outcomes for youth in afterschool programs. The behavioral strategy, known as the Good Behavior Game (GBG), has risen through rigorous testing to be a "promising program" in the Colorado Blueprint Program registry of Effective Behavioral Intervention Strategies (www.blueprintsprograms.com). GBG has also been recognized by the Coalition for Evidence-Based Policy as a "near top tier" intervention for school-age children (http://evidencebasedprograms.org/1366-2/good-behavior-game).

Rationale for Introducing GBG

Since our long-term goal is to strengthen positive youth development through engagement in afterschool programs and help children to avoid problem behaviors such as tobacco and drug usage, violent behavior, and delinquency in adulthood, we sought a behavioral strategy that already contained many key psychological and sociological elements that point to successful outcomes.

This program's successful effects in elementary schools appeared well suited to afterschool settings. Indeed, one of the greatest needs of teachers and afterschool staff is access to strategies that help children develop self-control and manage their behaviors. Since GBG helps the adults-in-charge to fill this need, it seemed likely that staff members would readily engage in learning and practicing this behavioral game in afterschool programs.

History of GBG

The Good Behavior Game (GBG) was developed over 45 years ago by a 4th-grade teacher along with a graduate student and her professor at the University of Kansas (Barrish et al., 1969). During the 1960s behavioral strategies like earning rewards based on behavior were just becoming popular; the University of Kansas faculty member, Montrose Wolfe, was one of the leading behaviorists in the field and the co-founder of applied-behavior analysis. The researchers and the teacher were surprised and pleased to observe the GBG's effectiveness in the classroom.

> "It's not a game with a board and pieces, but rather a way for children to learn and develop into leaders who will be able to impact the future of their afterschool programs, schools, and communities."
>
> *— Danielle Caton, ASP coach*

It's also important to note that this program's development occurred through a truly collaborative relationship between a classroom practitioner and researchers—both research and practice were developed and informed by these respective team members. This type of arrangement is precisely what we had in mind when we undertook this study on the migration of the GBG from school to afterschool settings.

More recently, the John Hopkins Prevention Research Center have conducted experimental trials in which first-grade classrooms in urban Baltimore, Maryland were randomly assigned to experimental

and control conditions. In these trials, positive effects of GBG were found with the most aggressive boys. Further, the effects were detected from the first- and second-grade curriculum in a follow-up of the students in middle school and early version of the 40+ -year-old game for classroom teachers complete with the manual and the necessary adulthood (Kellam & Anthony, 1998; Ialongo et al., 1999; Kellam, Rebok, Ialongo, & Mayer, 1994; Kellam et al., 2008). This trial has been found to demonstrate this level of efficacy in urban and often impoverished ethnic minority communities. Recently, Embry and colleagues have developed pre-packaged materials (posters, timer, etc.), a package that we have adapted for use with afterschool staff in collaboration with Dr. Embry (Embry, Straatemeier, Richardson, Lauger, & Mitich, 2003).

"I think over time their enjoyment shifts from the prizes to the personal satisfaction that they get from being more mature, for being able to focus and concentrate, and know that they're producing those changes themselves."

— Howard Rosen, Hempfield Behavioral Health, Community Research Partner

How to Play the GBG

Prior to playing the GBG, children in the classroom are divided into teams. GBG is played for specified lengths of time, signaled by the teacher, during which children on each team try to win by having low numbers of disruptions. What counts as disruptive behavior is specified and clarified ahead of time. As disruptions occur, the teacher unemotionally marks a disruption for the team on the board. At the end of the game, teams with the lowest number of disruptions win. Any or all the teams can be winners. Winners may choose among a set of tangible and intangible prizes. The prizes should have strong appeal to the children and must be acceptable to the teacher.

Another critical feature of the game is that it is not used as a separate activity, but is integrated with other academic or social activities in which the students are already engaged, such as during reading or math lessons, or special enrichment classes, or at lunch. This aspect of the game is particularly appealing to teachers because they do not have to take time away from academic work to play it. Gradually, the teacher may increase the duration of the game to strengthen students' abilities to exert self-control and influence their peers to do the same.

To continue to build self-control and generalization among the students such that they behave well in multiple places and times, teachers hold a Secret Game in which he/she does not signal the students, but simply begins timing the game and marking disruptions on the board. At the end of the game he/she announces the winning teams. This strategy subtly "sneaks up on the children", helping to stimulate their best behavior at all times since they do not know when the teacher might be playing a Secret Game.

Key Elements of GBG

Some of the GBG elements conform to known psychological principles that are developmentally appropriate to elementary-aged children. These include the use of positive peer pressure, i.e., collective efficacy, to reinforce desired behaviors and discourage disruptions, reduced attention to the individual who acts out in favor of acknowledging and praising students who are on task, the teacher's lack of emotion toward misbehaviors, the competitiveness of the game, and the fun and suspenseful elements of the prizes and the Secret Game. A powerful element of GBG is the low emotion with which the teacher notes and marks disruptions, and the lack of direct attention to the disrupting child(ren). This is one way in which children who seek and gain undue attention when exhibiting negative behaviors can be subtly redirected to more positive activities when they see other children praised for their constructive, engaged, and on-task behavior.

GBG's Evolution into PaxGBG

Over the years several elements have been added to the original GBG, developed by the Paxis Institute in Tucson, Arizona by Dr. Dennis Embry and colleagues (Embry et al., 2010; Embry, 2014). Named "kernels", these additional elements combined with the game comprise the Paxis Good Behavior Game, or "PaxGBG". PaxGBG begins with a visioning process in which students and teachers engage, called "My Wonderful Afterschool", in which they cooperatively describe Pax behaviors and "spleems," and the list of possible prizes (called "Granny's Wacky Prizes"). This process helps to create a shared list of behavioral guidelines and norms that are posted in the sites. The collaborative visioning process contributes to essential "buy-in" by students and adults. The kernels are particularly appealing to students in the elementary grades (K–6). Some examples include the use of made-up words for desirable behaviors (Pax [for "peace"]), "spleems" for disruptive behaviors, and hand signals and verbal cues for desired postures (Pax Hands, Feet), and vocal levels (Pax Voices). These strategies allow afterschool staff to manage behavior in fun, supportive ways. Other kernels include other more advanced elements like Team Leaders and Team Jobs to keep everyone interested and engaged.

The added kernels from Embry and colleagues make the game even more engaging by promoting a feeling of camaraderie and connectedness among the students, and between students and staff. The verbal and visual cues enable transitions to occur more smoothly. Perhaps most importantly, elementary students are developmentally sensitive to being part of a "club". The teams and the made-up words and cues are particularly appealing to children in this stage of development. We used the PaxGBG in this study, and detail the various project goals and developmental needs of youth potentially addressed by the various elements (Table 2.1).

> "Use of the Pax kernels also teaches children how to be good leaders, how to care for one another, and how to create that sense of community that we want to see in our afterschool programs."
>
> *— Alison Rosen, PaxGBG Instructor*

Table 2.1: *Developmentally Appropriate Quality Features of GBG and PaxGBG*

Developmental Needs of Elementary Students	Basic GBG Elements	Added PaxGBG Elements
Need for belonging	Children divided into teams	**Team cohesion enhanced by:** —Made-up words for good behaviors (Pax), disruptive behaviors (spleems), prizes (Granny's Wacky Prizes) —Addition of visual and auditory cues to aid transitions between activities —Identifying elements for teams (color-coded bracelets, names, etc.)
Need for agency, engagement	Children told ahead of time what behaviors acceptable and not acceptable during Game	**Instead of being specified by teacher,** —Children go through visioning process to describe "My Wonderful Afterschool" —Children decide on rules and acceptable and non-acceptable behaviors —Children earn and decide on group-based prizes —Children can earn special jobs on teams
Need for appropriate structure	—Attention is shifted to the team rather than the individual —Disruptions scored calmly and with neutral affect by teacher —Clear rules and guidelines —Self-control during game	**Additional appropriate structure is given by:** —Use of "kernels" including cues, Secret Game and Beat-the-Timer —Participating in activity rewards (line-dancing, etc.)
Need for supportive adults	—Adults use a fun cooperative game to help children manage their behavior —Adults praise and reward children for positive behaviors	**Additional support given by adults:** —Adults give compliments in form of "tootle notes" —Adults allow children to choose possible prizes and participate in prizes —School-wide competitions held for additional prizes with parents, principals participating
Need for supportive peers	—Cooperative mixed-age, mixed-gender, mixed-race/ethnicity teams —Group rewards	**Additional peer support created by:** —Group visioning process —Group decisions on rules —Group agreement on prizes —Positive peer pressure

Purpose of Our Research

The purpose of this research study was to explore ways to strengthen afterschool environments by using a cooperative game, played among teams of students and facilitated by afterschool program staff. The PaxGBG has been found to be effective in promoting positive behaviors and reducing negative behaviors in school. In this study PaxGBG was adapted for afterschool environments to address these research questions:

1. Does intervening with PaxGBG increase supportive behavioral management strategies and the quality of adult-child interactions?
2. Does intervening with PaxGBG foster shared social norms, supportive relationships, and collective efficacy?
3. What is the role of community resources and infrastructure on the quality of PaxGBG implementation?
4. Can PaxGBG delivered in an afterschool setting for mixed-age (K–6th grades) programs over the course of one academic year increase positive behaviors and decrease disruptions?

We anticipated that implementing PaxGBG would be different in afterschool than in schools for several reasons:

1. School classrooms include 1 teacher versus afterschool programs staffed by multiple adults ranging in age, educational background, and expertise.
2. Afterschool programs include a wider range of mixed-age elementary school children.
3. Afterschool programs are often conducted in more flexible spaces, often moving among cafeterias, gymnasiums, and cafetoriums.
4. There are higher rates of both staff and child turnover in afterschool programs than would be expected in schools (Granger, 2010).

Our prime aim was to examine the implementation of PaxGBG in afterschool programs as a way of fostering important features of program quality in an effort to ultimately prevent youth substance abuse, violence and delinquency, and to explore its promise in fostering youth skills and positive development.

Chapter 3:
Research Sites, Measures, and Methods

The goal of our applied research project was to examine the impact of PaxGBG in terms of improving afterschool programs and student data. The following section describes our research approach.

Site Selection and Demographics

The LEGACY Together Research Project is based on the University Park campus of The Pennsylvania State University (located centrally within the State of Pennsylvania in the college town of State College [population approximately 100,000]) where the LEGACY Together Project leader, Professor Emilie P. Smith, and many of the key collaborators are situated. Our community partner, Harrisburg-based Hempfield Behavioral Health (Dr. Howard Rosen, Director), was integrally involved in providing training and technical assistance. This research project was conducted in Central and Southeastern Pennsylvania, an area containing a variety of communities within a 60- to 90-mile radius, including urban, suburban, and rural.

The goal for the site selection was to include a variety of afterschool sites in different geographic locales, as well as a mix of socioeconomic levels and racial/ethnic origins among participating families, and by gender and grade level. The rationale was based on our hypothesis that the potential beneficial effects of PaxGBG implementation should be seen in all programs, and to be able to examine the impact of these elements in both implementation and in the overall impact of PaxGBG. Data were collected on these elements in all participating afterschool programs.

We recruited a total of 76 afterschool sites (approximately 25 each year for three years). Another advantage of maintaining trustful, two-way communications was that input from afterschool staff members enabled us to continuously improve the quality of the project. Demographic data were collected on socioeconomic status, race/ethnicity, diverse geographic locales, types of providers (private, YMCA, Parks and Recreation) (Table 3.1).

Research Design

The overall design of our five-year research study was a randomized controlled trial using a total of 76 afterschool programs, half of which received training and coaching on PaxGBG. The control sites conducted "business as usual" in their afterschool programs during the study, but were given the advantage of receiving PaxGBG training at the end of the research period. Programs to be used in the study were matched closely on race-ethnicity, size of program, and socioeconomic status. Matched programs were randomly selected to become the control or experimental sites (Figure 3.1).

Conducting the Research

This study was conducted over a five-year period. The 76 program sites were divided into three Cohorts. Cohort 1 (2009–2010) included 24

Figure 3.1: *Study Design*

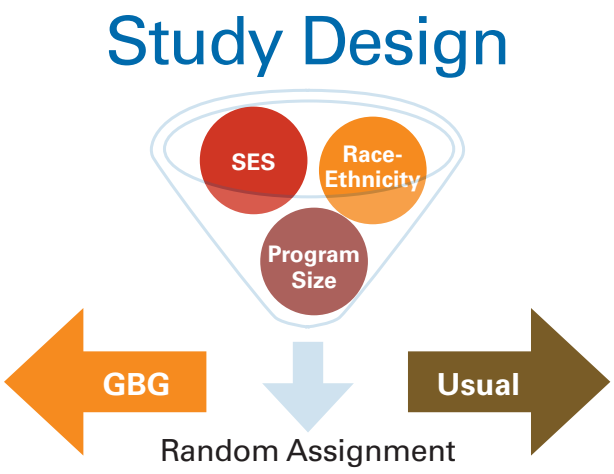


Table 3.1: *Afterschool Program Demographics*

COHORT 1: Provider Number, Geographic Locale, Provider Type	Average # of children	Econ Disadv (%)	White (%)	Black (%)	Hispanic (%)	Asian/ Pacific Islander (%)
Provider 1 (suburban) YMCA/YWCA	18	29	60	25	9	6
Provider 2 (urban) 21st Century	48	98	5	63	27	7
Provider 3 (urban) Parks & Rec	26	78	25	24	48	2
COHORT 2: Provider Number, Geographic Locale, Provider Type	**Average # of children**	**Econ Disadv (%)**	**White (%)**	**Black (%)**	**Hispanic (%)**	**Asian/ Pacific Islander (%)**
Provider 4 (rural) YMCA/YWCA	28	17	93	3	4	2
Provider 5 (urban) YMCA/YWCA	15	54	48	25	3	1
Provider 6 (rural) Private	22	25	81	5	9	5
COHORT 3: Provider Number, Geographic Locale, Provider Type	**Average # of children**	**Econ Disadv (%)**	**White (%)**	**Black (%)**	**Hispanic (%)**	**Asian/ Pacific Islander (%)**
Provider 7 (suburban) School District	63	13	48	39	4	11
Provider 8 (suburban) Private	21	60	25	50	22	4
Provider 9 (suburban)	26	78	25	24	48	2
YMCA/YWCA	29	11	77	14	3	6
Provider 10 (semi-rural) YMCA/YWCA	50	16	82	4	12	0
Provider 11 (semi-rural) YMCA/YWCA	37	35	68	20	11	1
Provider 12 (urban) Parks & Rec.	19	100	0	68	32	0

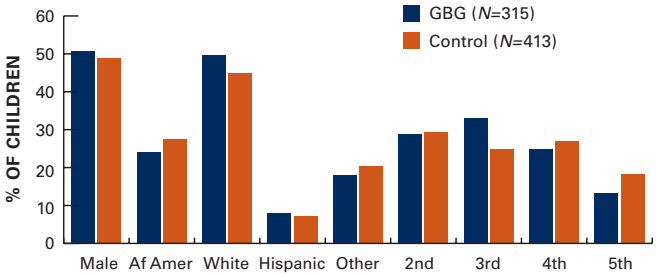
program sites. Cohort 2 (2010–2011) had 20 program sites. Cohort 3 (2011–2012) had a total of 32 program sites (Figure 3.2).

In each cohort the sites were matched by number of children served as well as children's SES, race/ethnicity, and geographic locale (Figure 3.3). They were randomly assigned to either receive the PaxGBG intervention or "business as usual". (Sites not receiving the PaxGBG intervention during the research study period were scheduled to receive the training at the end of the research study.) Before any PaxGBG training or instruction, children, staff members, and directors (in both treatment and control sets) took pre-treatment surveys about their feelings, attitudes, and behaviors.

Figure 3.2: *Afterschool Program 3-Year Cohorts*

Cohort 1	Cohort 2	Cohort 3
PaxGBG 12 Programs	PaxGBG 10 Programs	PaxGBG 15 Programs
Usual 12 Programs	Usual 10 Programs	Usual 17 Programs

Figure 3.3: *Baseline Equivalence of Groups at Pre-test*



Note: Total *N*=728. There was no significant difference in baseline characteristics between children in control sites and those in GBG sites, except the proportion of the 3rd graders, t=-2.39, p<.05

The intervention treatment group received an initial training of four hours. Staff members attending each training received a gift card of $50 for each training attended. We provided control group staff who were not included in the trainings a $50 gift certificate to address issues of attention bias. The trainings included information on the purpose of the study and the layered strategies (kernels). At the second training, the staff and directors learned how to play the game, including the Secret Game. In the third four-hour training session, advanced strategies were introduced to keep the game interesting and to more deeply engage the children. Advanced strategies include team job assignments, encouragement via notes of praise (called "tootle notes" as opposed to "tattling"), game play across longer time frames, and novel prizes.

During the 20–24 weeks of treatment, staff members were asked to play the game each day and note number of times per day and number of minutes played. The frequency, duration, and advanced elements of the game played at each site were recorded and used by the coaching team to assess and improve its implementation. Coaches visited and observed each program site (treatment and control) once a week during the experiment for a 1- to 2-hour period. Coaches used a web-based data entry system to measure and record their observations, and noting the number of games and strategies used by staff members.

At the end of the experimental period, children, staff members, and program directors completed post-treatment surveys on their individual feelings, attitudes, and behaviors, as well as their perceptions of their group's feelings, attitudes, and behaviors.

All in all, this applied research project gathered a wealth of valuable information from multiple sources, including observations by independent trained social science raters, and surveys with program directors, staff, and children. The multi-level data collection scheme is shown in Table 3.2. Great care was taken to validate measurement instruments used to train and test the reliability of observers and to determine the statistical validity of all our surveys and measures. The sections below describe the various sources of data.

Independent Observers

Trained observers from the Survey Research Center (SRC) at The Pennsylvania State University were contracted to conduct independent observations at each of the treatment and control afterschool sites at five times during the experimental period: twice in fall, once in winter, and twice in spring. To assess the quality of afterschool settings, observational data were collected five times across the academic year—twice in the fall with 4–6 weeks between observations, once in January–February, and twice in the spring in 4- to 6-week intervals. Approximately half of the observations in fall, winter, and spring were conducted with two observers per site. Given the variability of activities and staff in afterschool we thought that multiple measurements on varying days with varying observers would necessary to characterize the nature of these afterschool programs accurately (Raudenbush, Martinez, Bloom, Zhu, & Lin, 2011).

To promote and sustain high levels of interrater agreement among our observers, we utilized a Gold Standard Video Process, similar to techniques used by other observational research (Hamre, Pianta & Chomat-Mooney, 2009; Pianta & Hamre, 2009;

Table 3.2: *Multilevel Data Collection*

	Item Collected	Responsible Person	Frequency
Fall	Director Survey Staff Survey Student Survey (PDA) Site Observation (2ce)	Site Director Staff Students Project Field Staff Coaches	Once Once Once Twice Weekly
Winter	Site Observation	Project Field Staff Coaches	Once Weekly
Spring	Director Survey Staff Survey Student Survey (PDA) Site Observation (2ce)	Site Director Staff Students Project Field Staff Coaches	Once Once Once Twice Weekly
Ongoing	Attendance School-related Data	Staff Project Field Staff	Daily Once at the end of school year

Stuhlman, Hamre, Downer & Pianta, 2010; Yohalem & Wilson-Ahlstrom, 2010). A group of scientific experts in education and developmental science viewed videos of actual afterschool programs and established definitions and "gold standard" scoring via a consensus process reaching rates of 80 and most often 90 percent agreement among the scientific experts. Observers received 2 8-hour trainings at the beginning of the academic year and again in winter and spring. Before being deployed, they viewed sample videos of afterschool and had to match the GSV scores at 80 percent or higher before deployment. Those few who were at or less than criteria received additional training, and all reached this criteria before each wave of data collection.

Observers used a number of tools to rate the programs, including the Afterschool Climate Assessment (ACA), the Caregiver Interaction Scale (CIS), the Promising Practices Rating Scale (PPRS), and the Youth Program Quality Assessment (YPQA).

The Afterschool Climate Assessment (ACA). The ACA is a binary checklist of 20 items (yes/no) developed specifically for this project to assess the use of evidence-based practices in both the experimental and control conditions. The items assessed the degree to which experimental and control sites specified and displayed posted, clear behavioral guidelines, and engaged in active supervision, contingent rewards, specific praise, and redirection to name a few. Because afterschool sites might be using a range of these strategies, high internal consistency reliability was not expected in that a site might be using some of the methods but not others. The Cronbach's α of internal consistency reliability was .62. The interrater reliability across the 3 cohorts and 5 waves for each cohort was .77 (percent of agreement), and the Intraclass Correlation, which accounted for the extent of observers' variance within the observations of binary settings was .63. Thus this measure of observed implementation exhibited a moderate amount of reliability as assessed by various approaches.

Arnett's Caretaker Interaction Scale (CIS). The CIS was used to measure the quality of staff-child interactions in our afterschool programs. Developed by Arnett (1989), the original CIS consisted of 26 items examining the interactions of caregiving staff with preschool children in the following four areas: a) harshness and more authoritarian manner, expecting children to rigidly conform to adult rules and behavior; b) sensitivity, which is defined as not only communication with young people but the provision of appropriate levels of guidance, redirection, praise, and contingent rewards; c) detachment, uninterested in children and involved in more adult-oriented activities that exclude interaction with children; and d) permissiveness, the degree to which staff fail to appropriately provide guidance and redirection when necessary. Based upon our pilot work, we adapted some of the items to make them more observable and as unambiguous as possible, resulting in 23 items. Trained field observers rated up to 3 permanent, non-volunteer staff in each afterschool program on a 4-point response scale indicating the extent to which they engaged in a particular behavior or practice : 1=never (0%); 2=few instances (1~30%); 3=many instances (31~60%); and 4=consistently (>61%).

> "The uniqueness of PaxGBG is that it's not implemented with a mock group in a lab. These are actual programs with real needs that we are fulfilling."
>
> *— Megan Leathers, Research Project Manager*

Promising Practices Rating Scale (PPRS). The PPRS is an observational tool developed for a study of the relationship between afterschool program quality and youth outcomes (Vandell et al., 2004). The PPRS was designed to collect information on types of activities offered in afterschool programs, materials and resources available for those activities, and extent to which various dimensions of program quality and practices were observed during those activities. These dimensions included: supportive relations with adults, supportive relations with peers, level of engagement, appropriate program structure, over-control, and chaos. (Opportunities for cognitive growth, over-control, and mastery orientation are additional dimensions of the PPRS but we did not have hypotheses regarding how these dimensions might be affected by our intervention approach.) For our study, we modified the original version of the instrument in several ways. In the original PPRS, each dimension of program quality was assessed by a single global item with a 4-point scale indicating the extent to which a given construct is characteristic of the program (1=highly uncharacteristic; 2=somewhat uncharacteristic; 3=somewhat characteristic; and 4=highly characteristic). Single-item measures, however, may have limited reliability (Nunnally & Berstein, 1994). In order to address this concern, we developed multi-item subscales representing each dimension of program quality by treating specific exemplars for each dimension provided in the PPRS as separate items that could serve as subscale components. Another modification involved focusing on domains that were most relevant to our conceptual framework. Our revision of the PPRS scale consisted of 17 items, with the following five subscales: supportive relations with adults, supportive relations with peers, level of engagement, appropriate structure and chaos. Our data collectors observed 3 successive activities in afterschool for 15-minute intervals each and rated each PPRS item on a 4-point scale. The ratings on a set of items in each dimension were then averaged to obtain a subscale score.

The Youth Program Quality Assessment (YPQA). The YPQA has measures that rate important aspects of quality of afterschool programs germane to our conceptual logic model, namely measures of belonging and engagement, and also includes two subscales that were used in this study: Supportive Environment and Interaction. (There are other subscales of the YPQA but we could not use them all in the interest of time and economic use of resources; we used the concepts most germane to our approach.) Original psychometric information

for the YPQA were determined from a validation study in which 356 YPQA ratings were completed in youth-serving programs (i.e., afterschool programs, school-based organizations, community-based organizations, and camps) in Detroit and Grand Rapids, Michigan (Smith, 2005). In the original High Scope measurement study, the Supportive Environment subscale internal consistency reliabilities ranged from .84–.85 (Waves 1 and 2) and inter-rater agreement was .69. The Interaction subscale exhibited internal consistency reliabilities of .64–.72 and inter-rater reliability of .83.

Program Directors

Director Surveys. The directors' surveys were gathered from the onsite (preferred) or overall afterschool program directors. Directors or coordinators of afterschool programs were given pre- and post-treatment surveys designed to assess the quality of the afterschool program. Directors answered questions on staff educational levels, staff pay scales, program structure, frequency of staff professional development and staff meetings, and specific details about physical space and equipment. In addition, levels of community support from outside agencies and organizations were assessed. These surveys were valuable sources of information about the mission of the program (child care, academic enrichment, etc.), the facilities and space, staffing models, staff training and development, staff-child ratios, and many other organizational aspects, including the frequency of staff meetings, communication, and connections to the families, schools, and community resources of the youth being served. Program Directors received a $25 gift certificate for each director survey completed.

Afterschool Staff Members

Staff Surveys. Each participating staff completed surveys at pre (fall) and post (following spring). Demographic information on staff members was collected directly through the staff member survey. Information included gender, age, race/ethnicity, as well as educational level and job experience (Figures 3.4a–3.4e). Staff members also were asked to respond to questions on their attitudes toward

and interactions with other staff and children as well as the attitudes of other staff members within their program. Other questions explored facts related to program quality, such as rate of pay, supervision of staff, professional development opportunities, and frequency with which staff members met to plan activities and solve problems. Staff members received a $25 gift certificate for completing pre- and post-surveys.

Children

Basic demographic information about each participating child (in grades 2–5) was collected through a survey (Figure 3.5a–3.5c). Children's attitudes and feelings were very important to the entire research project. After all, how the children are thinking and feeling about their afterschool program determines their experience in their afterschool program. On the student survey, many questions also related to their self-concepts, beliefs, and thoughts about the future. Children received a small token—a water bottle or string bag for participating in pre- and post-surveys.

Figure 3.4a: *Staff Demographics at Pre-test: Gender*

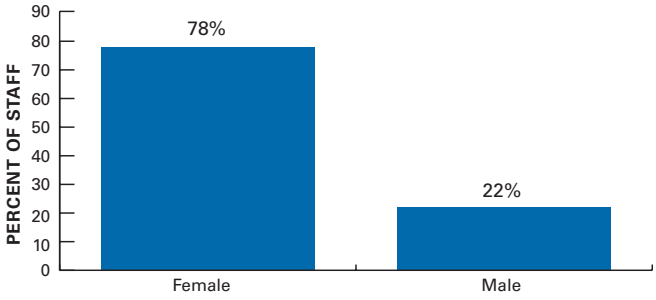
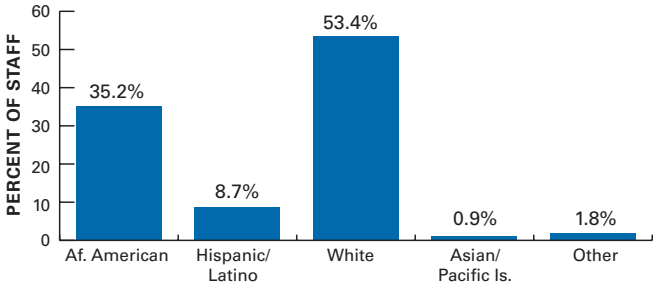


Figure 3.4b: *Staff Demographics at Pre-test: Race/Ethnicity*



Child Surveys. Children's behavioral outcomes were assessed using child and teacher reports from the Strengths, Difficulties, Questionnaire (SDQ) (Goodman, Meltzer, & Bailey, 2003; Mellor, 2004). The SDQ is comprised of 27 items to which participants respond on a 3-point scale indicating the degree to which each item is "not true, sometimes true, or very true". The SDQ sums and averages the scores on the items, resulting in a total score and subscale scores on hyperactivity (I have a hard time being still, α= .79), conduct problems (I get angry and often lose my temper, α= .65), emotional symptoms (I get a lot of headaches, α= .76) and

Figure 3.4c: *Staff Demographics at Pre-test: Age*

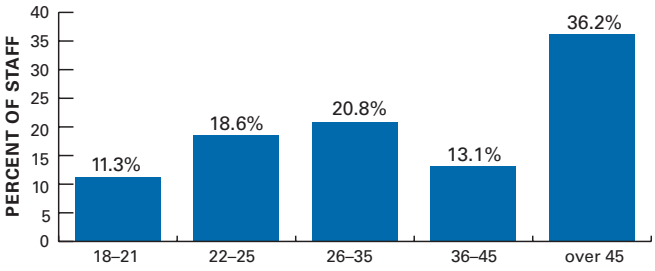


Figure 3.4d: *Staff Demographics at Pre-test: Educational Attainment*

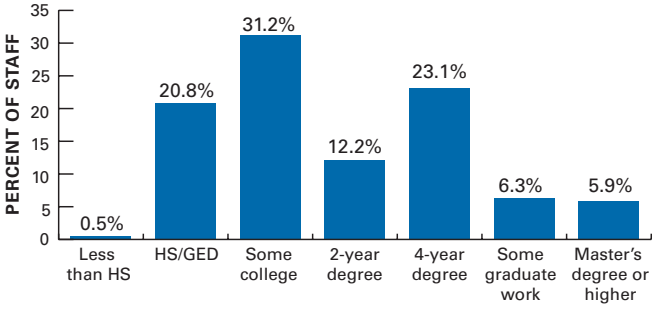
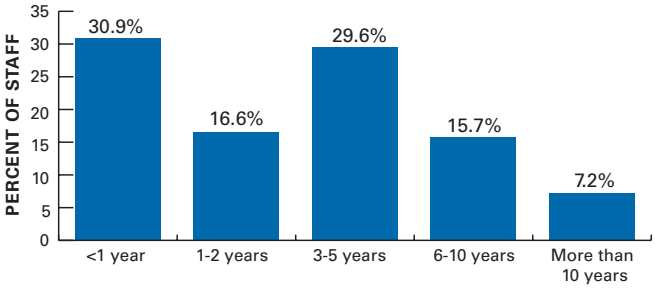


Figure 3.4e: *Staff Demographics at Pre-test: Job Experience*



prosocial behavior (I try to be nice to other people, I care about their feelings, α= .73). The range of internal consistency reliability for the teacher report of the SDQ scales ranged from .70 to .90. Problem behaviors and substance use was assessed by a developmentally-appropriate self-report measure obtained from Loeber and colleagues in the Pittsburgh longitudinal study of delinquency (Russo et al., 1993). These five items assess involvement (yes/no) and frequency (once, twice, more often) of involvement in child-reported activities including theft, vandalism, smoking cigarettes, drinking alcohol, and experimenting with marijuana with a moderately high internal consistency, α of .71. Over the years, there has been an abundance of discussion about the use of self-reported problem and delinquent behavior with the conclusion that child- and adult-reported activities are most often different sources and often official reports of problem behavior lag behind self-reports. However, social desirability can also be an issue in self-report in that it can downwardly bias reporting of undesirable behaviors but can also be an upward bias if the behavioral norms endorse the sort of bravado inherent in problem and delinquent behaviors. Thus, we have multiple sources of report of children's behavior.

Figure 3.5a: *Child Demographics at Pre-test: Gender*

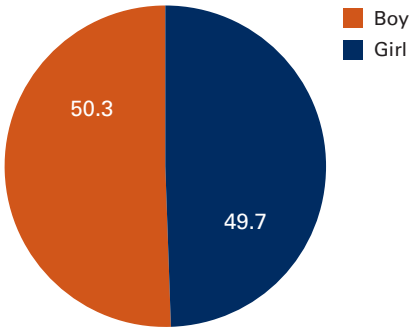


Figure 3.5b: *Child Demographics at Pre-test: Race/Ethnicity*

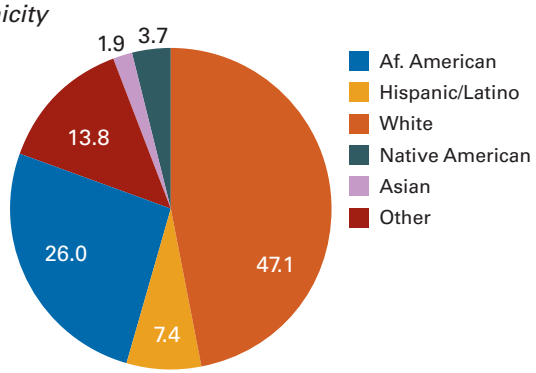
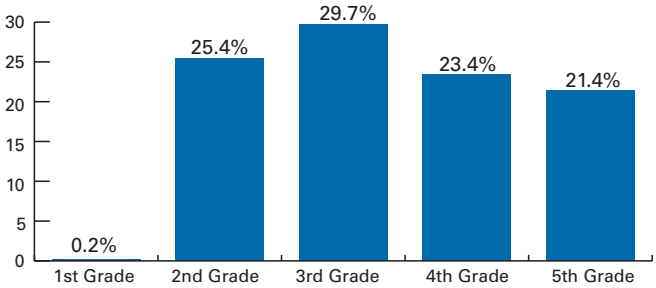


Figure 3.5c: *Child Demographics at Pre-test: Grade Level*



Implementation Measures

Implementation was assessed through five observations over the course of each academic year by trained observers using the Afterschool Climate Assessment (ACA). This 20-item binary check list was specifically developed for this research project. The observers were recruited from a pool of scientific experts in education and developmental science. They received two 8-hour training sessions at the beginning of the academic year and again in winter and spring. They also viewed videos of actual afterschool programs and established definitions and "gold standard" scoring via a consensus process reaching rates of 80 and often 90 percent or higher before deployment to afterschool sites.

Coaches visited PaxGBG sites weekly, and after observing and recording what they saw, provided positive feedback and support to afterschool program staff. Coaches used a weekly web-based observation to report the length and frequency of game play, the number of PaxGBG strategies being used, and observation about staff attitudes and behaviors.

They used a list of 17 strategies and PaxGBG elements to check off what they observed during their 1-to 2-hour observation and coaching sessions each week with afterschool sites. The 17 elements consisted of 10 elements that are part of the basic

GBG and seven elements that are considered Pax "kernels". Examples of the GBG elements are number of times played, number of minutes each time, number of wins, rewards given, etc. Examples of PaxGBG kernels are use of Pax Hands, use of voice signals, use of harmonica to signal start of game, etc.

The third measurement of implementation was recorded by afterschool staff members themselves. They used a chart posted on the wall that listed the same 17 PaxGBG elements, and noted each time each element was used during that week. Using these three distinct sources of data we were able to gain a broad perspective on how the different groups rated PaxGBG implementation at the different afterschool programs.

In summary, this study used a multi-level, multi-modal approach to compile observational and survey data from program directors, staff, and youth to describe the afterschool programs and their participants.

Chapter 4:

Advancing Implementation Science and Practice: The Importance of Connecting to Community Capacity in Implementing Evidence-Based Practices

Our overarching goal was to recruit and engage a wide variety of programs and engage them in utilizing evidence-based prevention practices (EBP) into their normal routines (Smith, Childs, McManus, Rosen, & Rosen, under review).

Recruitment of Afterschool Sites

Site engagement was used to recruit schools—researchers took great care to openly and honestly disclose the goals of the research project, how much work the sites would be expected to do, and what possible benefits could accrue to sites, personnel, and children as a result of their participation. Combined with full disclosure, we made strong efforts to build and maintain trusting and consistent two-way communications at multiple levels, including among researchers, directors, and staff members.

Trust is a crucial element in working with multiple programs, sites, and personnel; the effort involved in building and maintaining trust is invaluable to the fidelity of sociological/psychological research studies. Our experience shows that the importance of building and maintaining trust with our research partners and practitioners cannot be overestimated (Smith et al., under review).

Using the Ecological-Exchange Framework approach (Emerson, 1976), we began by working with key decision-makers (either multi-site or single-site administrators). Once these individuals indicated their willingness to participate, we began to include staff members and research personnel from the LEGACY Together Project in our frequent communications. In fact, we learned that including afterschool staff members with the directors was critical to effective buy-in. Consensus-building was a core part of our strategy of staff member engagement (Figure 4.1).

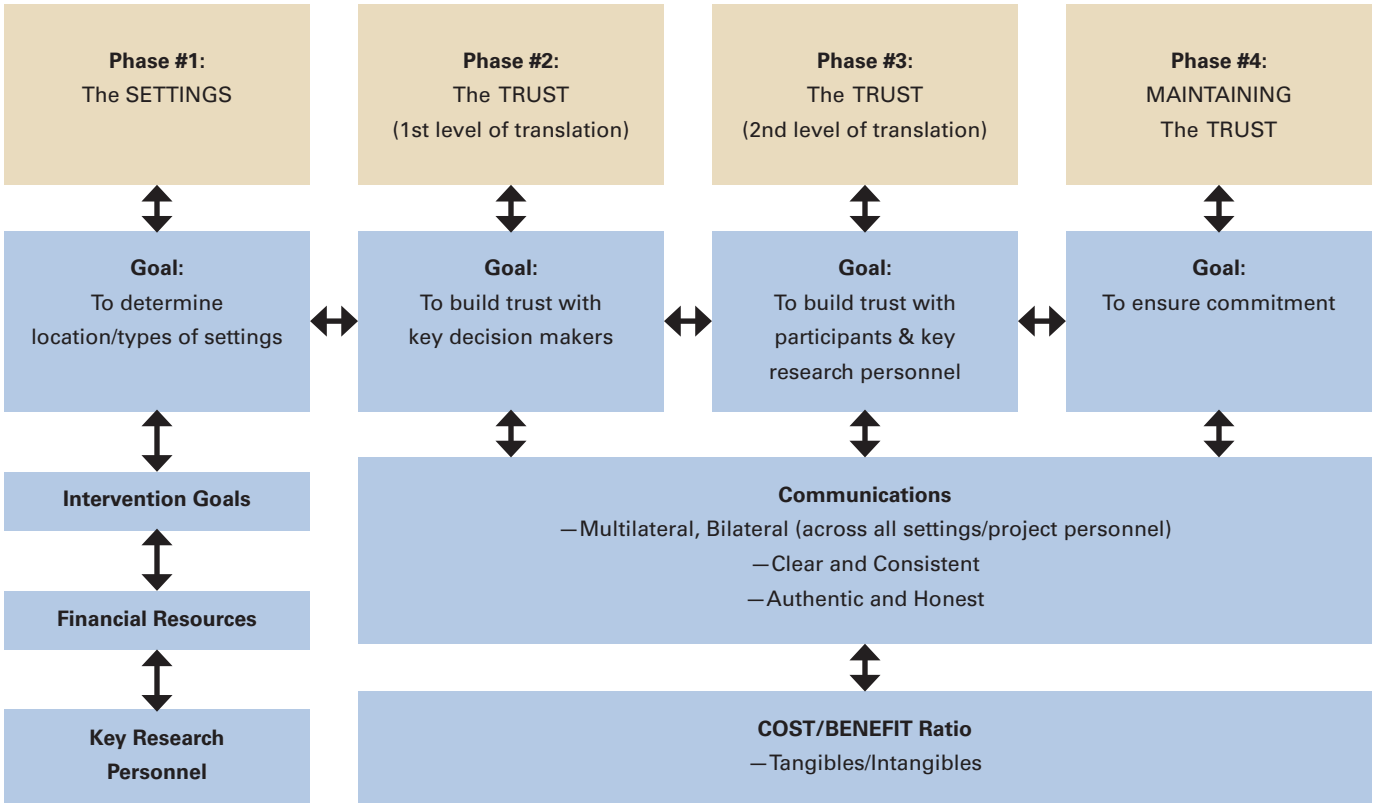
Definition of Program Capacity

Afterschool program capacity refers to a range of knowledge, skills, and abilities that exist within the program (Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005; Flaspohler, Duffy, Wandersman, Stillman, & Maras, 2008). It can be likened to program quality, but quality is actually thought to be the result of capacity. We know that many factors contribute to program capacity, including funding, leadership, training and enthusiasm of staff, and parent and community support.

> "Good things happen when researchers and practitioners play together!"
>
> *— Emilie Smith, Principal Investigator*

Thinking about the elements of program capacity that may impact a program's ability to function normally is one important issue. However, a program's capacity to try something entirely new and

Figure 4.1: *Social Exchange Model of Engaging Afterschool Programs*



experimental and to incorporate the innovation into its normal routine is quite another matter. In point of fact, program capacity may be a crucial factor in whether programs may use research to improve their practices and offer the best possible quality to the children and families they serve during those critical afterschool hours of 3–6 pm.

In this extensive research project we sought to identify and implement ways to strengthen afterschool programs. We predicted that our intervention using PaxGBG to improve behaviors and foster greater connections between students and staff members might be strongly impacted by the quality of implementation. For that reason we approached the issue of program capacity using the Interactive Systems Framework (ISF) as a guide.

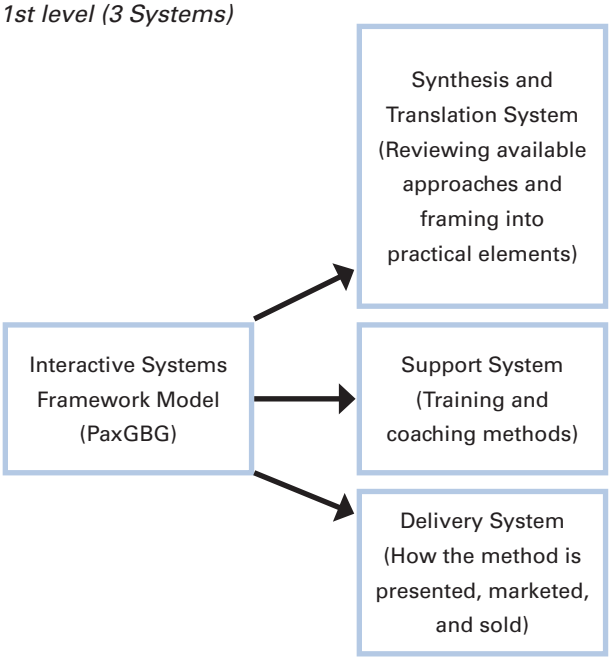
Components of Program Capacity—The Interactive Systems Framework

Recent research on the problems of translating research findings into practice in real-world settings has yielded a useful model that is being applied to many evidence-based prevention strategies and programs. The Interactive Systems Framework (ISF) was proposed in 2008 by a team of researchers at the University of South Carolina and at the Centers for Disease Control in Atlanta. The ISF outlines three systems that must work effectively together if innovations are to find their way from research into practice (Figure 4.2) (Wandersman et al., 2008).

The first system is the Synthesis and Translation System, which summarizes and synthesizes original research findings for an empirically-based prevention strategy or program, and translates the scientific jargon and measurements into an accessible and user-friendly form. This translation must explain the reasons why the strategy will work in order to motivate the "customer" considering adoption of the strategy or program for an intervention. In this system, researchers must have the expertise needed to "market" the new program to decision-makers who will adapt it.

The second system is the System of Support. Though PaxGBG is relatively simple and adaptable, some prevention strategies and programs being developed by researchers are relatively complex and involve significant behavior change by the user. The prevention programs propose that specific (and often intensive) training take place in order to implement the innovation. A training plan is normally developed as part of the specific intervention. Some strategies may require more training and individualized technical assistance. The ISF argues that training and often ongoing support via coaching should be developed and standardized so that practitioners have ample time to learn, absorb, and practice the new strategy.

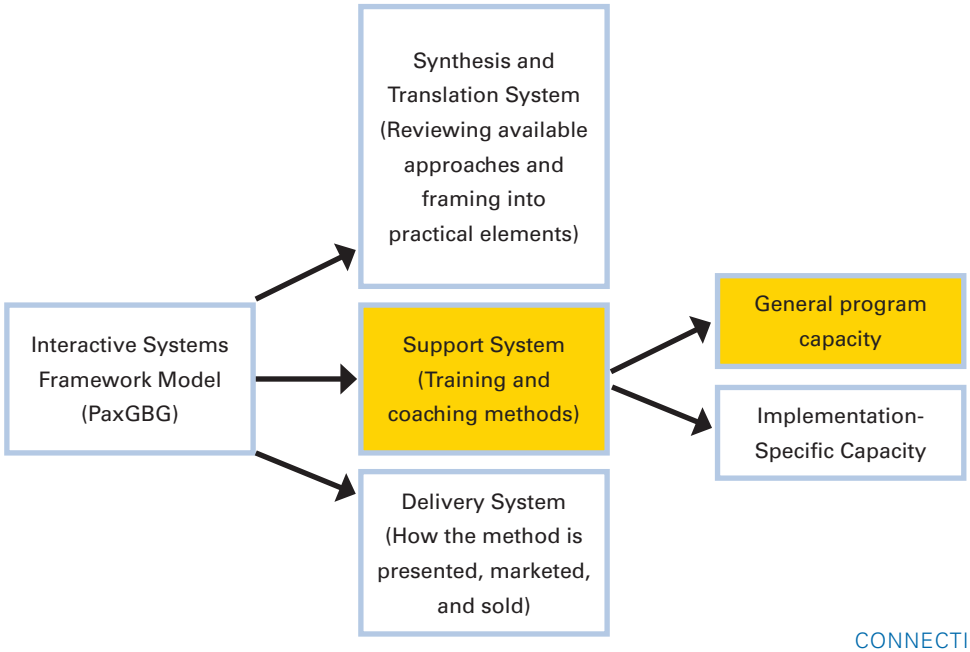
Figure 4.2: *Interactive Systems Framework Model – 1st level (3 Systems)*



The third is the System of Delivery, or the specific plan of action for introducing a new intervention to the end-user, includes activities, materials, and possibly "how-to" manuals or directions. Effective delivery necessitates easy-to-use materials; researchers developing prevention strategies are learning to create pre-set "packages" for purchase and use.

In thinking about these three systems—synthesis and translation, support, and delivery, we can also break each system down into two parts: how well the program is structured for normal operations (referred to in the model as General Capacity) and how well the program is prepared and resourced to take on a new program or strategy (referred to in the model as Implementation-Specific Capacity) (Figure 4.3).

Figure 4.3: *Interactive Systems Framework – Level 2 Focus of Research Efforts to Improve General Capacity (Quality) of Afterschool Programs in Relation to Implementation of PaxGBG*



And at the third level of the model, at least three factors can influence how well the programs function normally and whether they are resourced to take on a new project. These three factors are the Individual Level, the Organization Level, and the Community Level (Figure 4.4). Moreover, these interactions are bi-directional, such that individuals, organizations, and the community have influence and are influenced by the General and Implementation-Specific Capacity.

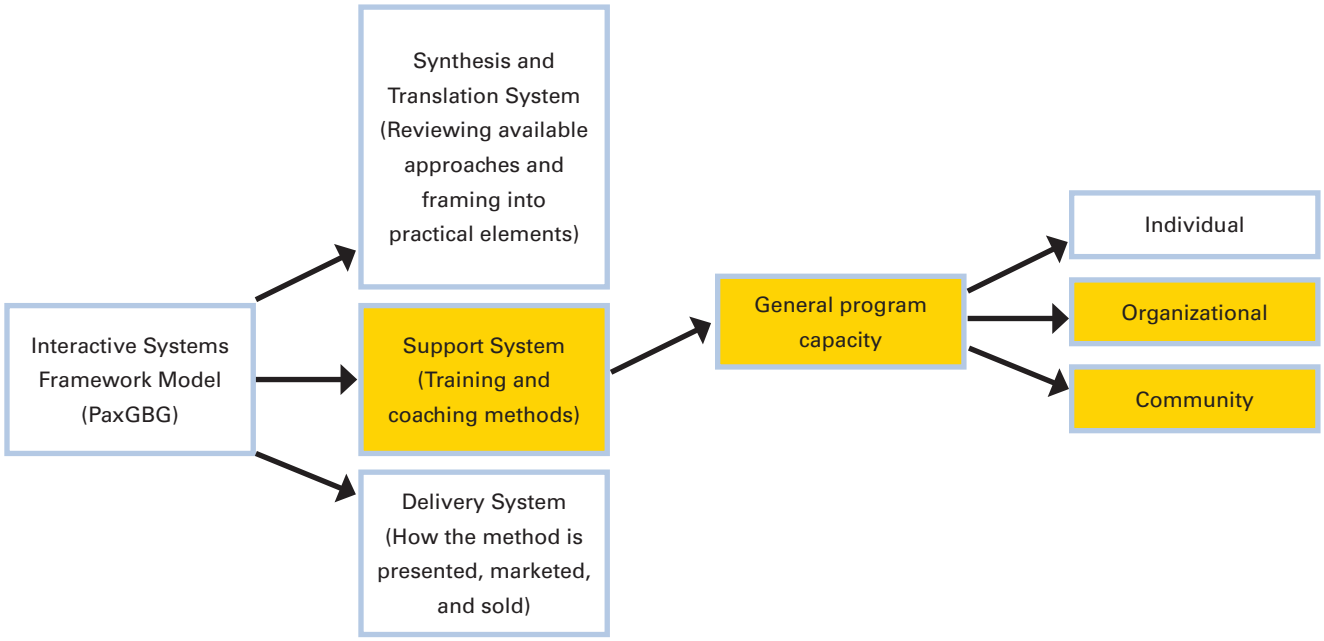
What this looks like in practice is quite complex in that a myriad of combinations, reactions, and interactions are possible. However, by breaking the possibilities down into these components, it is possible to analyze, predict, and prepare with plans that make the best use of individual, organizational, and community capacity to implement new prevention programs.

For example, a consumer who seeks to put a new strategy into place will first review the available possible approaches and choose an appropriate one. In collaboration with the developing research team, he/she may have translated the strategy into easy-to-understand terminology and developed excellent marketing materials. Plans for training and coaching may have been tested and shown to be solid and effective. The strategy may have been well-prepared and all the necessary elements are being included in the package with easy-to-follow directions. Yet, even if all the work on the researcher's end is flawless (and this would be a rarity), the customer may experience many roadblocks. On an individual level, the teachers may have learned about the strategy and wish to try it, but the program director may not be interested, or alternatively the director may wish to try something new, but the staff may be resistant. At the organizational level, there may not be enough staff or time in the staff schedule to receive training. At the community level there may be a lack of parent support, or no/insufficient funding sources to cover the cost of a new intervention.

Thus, we begin to see that barriers can exist at all these levels; the team that truly wishes to see its strategy put into practice in the real world would be well-advised to consider ways to address such barriers.

In the case of our research project, the introduction of PaxGBG as a prevention strategy was facilitated by having a well-researched strategy that has been identified by several sources as a best or promising

Figure 4.4: *Interactive Systems Framework – Level 3 Organizational and Community Capacity*



practice, and has been researched in elementary schools (Synthesis and Translation System) into an accessible and easy-to-use pre-packaged game with all the necessary components and activities (Delivery System). There is also a specified training and coaching plan in place for use in schools (Support System). However, our project offered an important innovation: we adapted the existing elements of PaxGBG for a very different setting—afterschool programs.

Challenges for PaxGBG Migration from In-School to Afterschool Settings

At first glance, it may seem that afterschool settings are similar to in-school settings, but a closer look reveals major differences. Child groupings, staff members serving in afterschool programs, types of physical spaces being used for afterschool, and types of activities that occur in afterschool vs. in-school are examples of these differences (Table 4.1).

Child-related differentiations include the fact that afterschool programs almost always enroll children from multiple grades, usually kindergarten through the fifth or sixth grade. Children are sometimes with familiar children, but may also be associating with children from multiple schools and neighborhoods. Another child-related difference is the frequency of afterschool attendance and participation. Some children may participate regularly while others are only infrequently or sporadically in the program.

Differences between in-school and afterschool staff may relate to educational level and experience working with children, with afterschool staff having

Table 4.1: *Differences between School and Afterschool Settings Impacting Implementation of PaxGBG*

Setting characteristics	School Setting	Afterschool Setting
Child Groupings and attendance	Single grade May be grouped by ability Daily attendance (6 ½ hrs.) Formal notice if withdrawn	Multiple grade range No ability grouping Variable attendance (2-3 hrs.) May drop out without notice
Staff Training and Experience	College-educated State-certified teachers Teaching experience Higher wages Stable funding Lower turnover	High school to college-educated Not trained as teachers Variable experience Lower wages Potentially unstable funding Higher turnover
Physical Space	Permanent classroom Learning tools and resources Technology available Drawers/lockers for personal storage Individual chairs, desks, and/or tables	Variety of multi-use spaces (e.g., churches, gyms, cafeterias, community centers) None or flexible storage May need to move to different space Potentially limited access to technology, tools, equipment
Activities	Typically all students engaged in one of these activities at a time: —Academic work —Arts and/or crafts —Reading —Physical education —Lunch or snack	Students may be engaged in any of a number of different activities (if available) at one time: —Homework —Tutoring —Games/toys —Outdoor play —Arts, crafts, music, clubs —Snack

fewer specific educational experiences or training in working with children. Multiple staff members may be covering a large number of children, with little opportunity to develop close relationships with each other or with the children. Also, due to the generally lower pay for afterschool staff, there may be high turnover.

Differences in physical space are also a factor. While some afterschool programs do use school facilities, other may use community centers, churches, YMCAs, or other shared facilities. Such spaces may have enough rooms for different activities, or they may be large open spaces, such as gymnasiums or cafeterias.

Afterschool programs vary widely in the types of activities they offer for children. While many are academically-oriented, with structured time for homework and even tutoring, others are more socially-oriented. Many programs allow time for outdoor physical activity, and some include clubs that focus on arts, languages, or other skill-building activities.

Implementation of PaxGBG in Afterschool Environments

Together, the LEGACY Together research team reviewed its Translation, Support, and Delivery Systems in light of this multiplicity of differences between in-school and afterschool programs and tailored them to the afterschool environments in which the program was being implemented. Our goal was to give every afterschool program in our study the best possible chance to be able to implement PaxGBG with fidelity. This meant building a robust Translation, Support, and Delivery System.

> "We know it's really difficult to learn something new in isolation. So we provide support to afterschool staff via ongoing training and personal coaching."
>
> *— Alison Rosen, PaxGBG Instructor*

Synthesis and Translation System for Implementation of PaxGBG

Professor Emilie Smith, the Principal Investigator for this effort, was first introduced to GBG in a multicomponent family, school, and afterschool reading-mentoring research project in which GBG was used in school (Prinz, Dumas, Smith, & Laughlin, 2000). She learned of PaxGBG later, when she collaborated with Dr. Dennis Embry of the Paxis Institute. The pre-packaged manual and materials of PaxGBG were well-suited to the goals of this project. Therefore, we utilized materials developed for school use in our adaptation of the translation system to afterschool programs.

We also sought the expertise of our community partner, Hempfield Behavioral Health, as we developed our plan to translate the research-based in-school implementation of PaxGBG to afterschool programs across Central and Southeast Pennsylvania. Dr. Howard Rosen and Alison Rosen have experience in translating evidence-based prevention programs to schools. Their perspectives and knowledge were invaluable during the collaboration and development of training materials and, with researchers, in the training of coaches, afterschool program directors, and staff members at all of our afterschool sites.

Support System for Implementation of PaxGBG

The LEGACY Together research team developed with Hempfield Behavioral Health a training and coaching support plan that was robust, and yet flexible, in order to accommodate the variety of afterschool program sites. Training occurred in several stages. Hempfield Behavioral Health along with Professor Smith and her research staff recruited, interviewed, and hired three highly qualified individuals to serve as the coaches who would be visiting each afterschool site weekly.

Afterschool program directors and staff members received training on PaxGBG in three sessions. The initial training consisted of learning the Pax tools.

The second training involved learning how to play GBG. In the third training session, directors and staff learned the advanced methods of PaxGBG, including team jobs and using team leaders. Coaches were integrally involved in these staff and director training sessions, and made weekly visits to work with staff as they began implementation.

At these weekly visits, the coaches also spent time observing the staff as they led the game and completed an observation form on quality of implementation.

Delivery System for Implementation of PaxGBG

The boxed set of PaxGBG materials available through the Paxis Institute was used as a guide in developing materials and creating activities for the treatment afterschool programs. The "kit" consisted of Pax tool reminders in the form of posters, as well as other tools such as a small harmonica, a timer, and color-coded wrist bands for each team member. The kit contains a "how-to" manual for playing the game and using the Pax kernels. Coaches worked with the staff members on utilizing the kit components. A large, tri-fold table-top poster was developed for use at each afterschool site allowed staff members to record when and how long the game was being played. This information would later be used to measure the quality of implementation.

Measuring Quality of Implementation of PaxGBG

We used multiple methods of measuring implementation quality by afterschool programs, including staff weekly reports, coach weekly observations, and trained independent data collectors' observations. Each of these groups recorded their observations on three specific forms that were collected by the researchers: the Staff Weekly Game Calendar Form, Coach Web-based Observation Form, and Independent Observations. Information from these three sources were compiled and compared across the different afterschool program sites.

In reviewing these forms we noticed that some programs were doing significantly better on implementation quality than others, and of course we wanted to identify those variables that might be the reason(s) for the differences. Possible reasons included afterschool program capacity in general (General Capacity) or the program's capacity to implement something new (Innovation-Specific Capacity) in accordance to the ISF model.

General Capacity at the Organizational and Community Levels

We first looked at the extent of support being provided to each afterschool program at the General Capacity level. The General Capacity of an afterschool program refers to the program elements that enable it to function well under normal conditions (Table 4.2). These elements include leadership, structure, mission, policies and procedures, communication, staff training, turnover, and professional development, funding, budgeting, and curricula/schedule.

In order to function well and have long-term sustainability, afterschool programs also must connect with their communities. For example, afterschool program staff might be in touch with the child's teacher to determine if there's work that can be done afterschool to help children's academic performances. Programs' Community-level connections are reflected in parents' support of the afterschool program, whether other community services and agencies work collaboratively with the afterschool program, and whether the program is assisted by other state and local authorities.

We were able to obtain measures of General Capacity at both the organization and community levels by having the afterschool program directors complete a detailed survey that addressed many of the structural, staff-training, funding, and curricula markers. Additional measures were obtained using the detailed staff survey.

Table 4.2: *Components of General Capacity in Afterschool Programs*

Components of General Capacity	
ORGANIZATIONAL CAPACITY	**COMMUNITY CAPACITY**
Days/hours of operation	Meet with parents
Staff-child ratio	Phone parents
Available space, materials, resources	Meet with teachers, school staff
Staff management (e.g., meetings, planning, communication)	Coordination with school re: content, planning
Professional development opportunities	Collaboration regarding space, resources, materials

Innovation-specific Capacity

Other potential variations among afterschool programs may be due to issues of stability and sustainability among programs, and their ability to implement a research-based innovation. At the organizational level, there may be a general attitude toward and culture of willingness to engage in innovation. The director and staff members may spend significant time improving their practices and utilizing data in doing so. On the other hand, these attitudes and expectations might be quite foreign to some programs. At the community level, connections may foster innovation and research, such as links with university researchers, the availability of outside funds or fundraising, and parental support to promote continuous improvement. Of course, these community resources may not be available to some programs.

These questions and issues may be one future direction for research. Data collected from our directors and staff members provided us with some valuable impressions and preliminary information on General Capacity.

How Program Capacity Related to Implementation

The relationship of program quality to implementation fidelity is complex, as expected. For example, we assessed each afterschool program

as *either* "high" or "low" on General Capacity at the organizational level or the Community Level. We then looked at these programs and rated them on implementation quality. With regard to implementation of PaxGBG strategies, we did not find a consistent relationship across programs when they were only "high" on one or the other level.

However, when we compared afterschool programs that rated "high" on *both* measures of General Capacity (Organization and Community Levels), we found a strong correlation with programs rated "high" on their implementation of PaxGBG.

All in all, using the information we obtained from program directors, we learned that Organizational Capacity (structure, communication, vision) and Community Capacity (the ability of afterschool programs to connect with families and schools and the community to amass both material and personal resources) factor prominently on the implementation levels of this evidence-based prevention strategy (Halgunseth et al., 2012).

Summary and What Capacity Means for Practice

Our work has been with programs that vary in terms of the type of provider including, some 21C programs, local community organizations, and parks and recreational facilities. As researchers, we learned a great deal from working with diverse afterschool program sites that vary greatly in their missions, organizational structures, resources, and abilities in integrate new practices into their programs. But, it's clear that the sites with more capacity do better. A number of adjustments were made to the System of Support to assist programs in implementing PaxGBG in the best way possible. Adjustments included changing the training from a full-day to several part-day sessions, including a "booster" training partway through the intervention, and several means of facilitating more two-way communications between site staff members and the research team. Our implementation team met weekly with the data from the coaches and afterschool staff to contemplate new approaches to encourage the sites to try the new strategies. Our coaches were the "faces" of the project, and their backgrounds and abilities to connect with and encourage staff while still challenging them to try new things, were helpful in getting many staff and sites on board. However, some sites still presented challenges. Future research could further identify ways to recognize capacity and approaches to helping afterschool programs implement evidence-based practices with fidelity.

Chapter 5:
The Research Findings: Connecting PaxGBG Implementation in Afterschool Settings to Children's Behavior

The Quality Conundrum

Despite the increased importance of afterschool programs for children and especially for working families, the research on the benefit of afterschool programs has been mixed; for example, a national evaluation of 21st Century Community Learning Centers found no effects upon the academic outcomes and higher rates of negative behavior (James-Burdumy, Dynarski, & Deke, 2007). On the other hand, Gottfredson and colleagues pointed to the role of both appropriate amounts of structure and the use of evidence-based practices. Lower problem behavior is found in programs using evidence-based practices and in programs that have structured activities (Gottfredson et al., 2004; Rorie, Gottfredson, Cross, Wilson, & Connell, 2010). In a similar vein Mahoney and colleagues found that youth actually exhibit higher levels of problem behavior in out-of-school time settings with inadequate monitoring and supervision (Mahoney, Stattin, & Lord, 2004).

Research on Quality in Afterschool Programs

We have found that in afterschool programs quality counts—a lot. Specifically, for our research we have seen that the afterschool programs we have engaged are highly variable in quality. Some of the quality factors that we have noted informally are the physical and financial resources; the administrative leadership; the education and experience of direct service staff members; the activities; and how the afterschool time is structured. Of course there are a large number of factors that can either contribute to or detract from these quality elements.

We are aware that a key element in creating an enjoyable and functional afterschool program is some system of group management. Even as students need to "let off steam" in afterschool programs after a long and structured school day, they still crave a predictable, stable, and reasonably structured afterschool setting. They also need to know what behaviors are acceptable and what behaviors are unacceptable in the afterschool setting. Research has focused on potentially key features of the balance of structure and flexible support in afterschool programs.

Appropriate structure (supervision and monitoring) is an important factor, but the way in which staff foster positive behavior is also key. Positive staff and child interaction in afterschool affect the degree to which children are motivated, develop good social skills, and perform well academically during the regular school day (Mahoney, Parente, & Lord, 2007; Pierce, Bolt, & Vandell, 2010). Thus supportive relationships with adults in afterschool programs help children develop socially and academically.

Yet, we should not assume that children are passive recipients of afterschool programming. Nor should we devalue youth peer interactions relative to adults ones. Larson found that while adult interactions are important, out-of-school time interactions with peers are both focused and motivating. Thus,

another potentially important quality factor to explore is the quality of supportive peer interactions in afterschool (Larson, 2000).

Simpkins, Little, and Weiss (2004) highlighted that participation in afterschool is comprised of enrollment, attendance, and engagement. Riggs showed that for immigrant Latino youth, afterschool attendance is related to better social skills and less problem behavior (Riggs, 2006). Yet, engagement in interesting activities adds another dimension to attendance. C. Smith and colleagues found that engagement is important to youth feelings of safety, interest, and growth (Smith & Hohmann, 2005). Engagement, along with a sense of belonging, (Anderson-Butcher & Conroy, 2002) are related to meaningful participation in afterschool.

How Quality Is Assessed in Afterschool Settings

Although research on afterschool program participation reveals evidence of the benefits of attending afterschool programs (Durlak, Weissberg, & Pachan, 2010), positive effects were not observed equally in all afterschool programs. Attention has been directed to identifying key elements of programs that are associated with positive youth outcomes (National Research Council and Institute of Medicine, 2002; Pierce, Hamm, & Vandell, 1999; Vandell et al., 2004). Pierce et al. (2010) found that positive relationships with staff are an important factor in internalizing (such as feeling anxiety, being withdrawn) and externalizing (temper tantrums, hitting, etc.) behavior, particularly for boys. Negative peer interactions also led to more behavioral problems and poorer social skills. Thus, some of the key features include: supportive relationships with adults and peers, appropriate structure and supervision, and engaging activities for youth to develop a sense of agency.

In a review of afterschool program quality features, Durlak, Weissberg, and Pachan (2010) noted that it was only high-quality afterschool programs that had statistically significant positive effects on attitudes toward school, social behavior, and school grades and achievement tests, while reducing problem behaviors such as aggression. The features that were necessary for these effects were labeled SAFE. (These SAFE features are related to the learning activities in the afterschool programs.) Such SAFE afterschool programs used SEQUENTIAL activities that built on previous skills; were ACTIVE in that the programs used active forms of learning; were FOCUSED in that the activities were focused on developing personal or social skills; and were EXPLICIT in that children were told that the activities were designed to build specific skills. In this review they found that programs that were using explicit, evidence-based approaches to building youth social and academic skills were most effective.

Using an Evidence-Based Practice in Afterschool Programs

Our research project sought to examine the use of an evidence-based strategy and to examine not only "if" it could positively affect youth behavioral outcomes, but also "how" it might work, presumably through enhancing features of quality programming, such an appropriate structure, support, and belonging. The project had strong appeal for administrators at all the afterschool programs we approached. (In fact, only one program declined to participate out of 76 contacted.) For afterschool settings that lacked a cohesive behavior management strategy, our offer of training on PaxGBG would fill an important need. For those programs that already possessed a behavior management system, the prospect of improving their own program by the addition of PaxGBG training was also appealing.

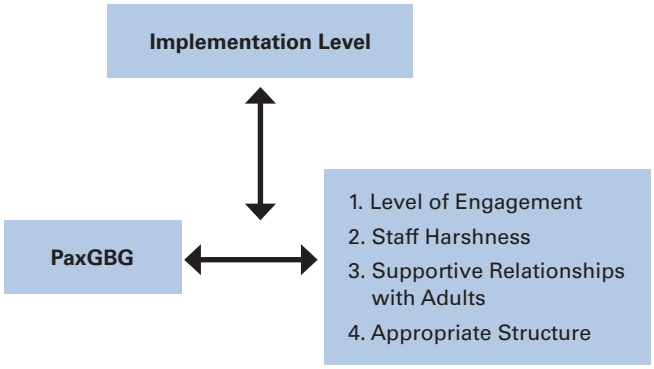
> "It increases the time that the children get to play with each other, and that we get to interact with the children. I mean, I feel like I know each of them personally. It allows more time to do positive activities."
> *— ASP staff*

We recognized from the outset that the behavior strategy we were introducing (PaxGBG) to experimental sites would be likely to increase the quality of the program setting and this would be likely to improve child behavioral outcomes. It was expected that PaxGBG would provide appropriate structure for managing behavior because of its supportive element which includes praise and contingent group-based rewards for teams of children. With that in mind, with a common language, praise and support, we expected that youth participating in PaxGBG would gain a great feeling of belonging and engagement. Further, given that the game requires students to exhibit self-control in order for their team to win, and to encourage and praise their team members for doing well, we expected youth involved in PaxGBG to demonstrate less hyperactivity and more highly developed social skills, such as caring about others and listening to them. Thus, we expected that using this evidence-based practice would enhance appropriate structure, more supportive staff and peer interactions, a sense of belonging, and enhanced social skills.

We also recognized that there could be a difference in how well PaxGBG was implemented by different programs, and that this could potentially have an effect on quality of the setting and also child behavioral outcomes. Our conceptual model is presented in Figure 5.1. In order to test the predictions of our conceptual model, we needed to have accurate measures of afterschool program quality. We also needed accurate measures of PaxGBG implementation.

Standardized observational tools exist and have been in use in school and early childhood settings. However, few quality measurement tools have been widely used in afterschool settings, nor have their psychometric and measurement properties been systematically evaluated (Yohalem & Wilson-Ahlstrom, 2010).

Figure 5.1: *Concept Model for Moderation of Effects on Settings by Implementation*



Two program quality measurement tools with demonstrated reliability and validity are the Caregiver Interaction Scale (CIS) (Arnett, 1989) and the Promising Practices Rating Scale (PPRS) (Vandell et al., 2004). The Caregiver Interaction Scale was developed for early childhood settings. It focuses primarily on the observed relationship between the caregiver and the children in the setting. Observers rate the caregiver's demeanor, emotional affect, way/manner of speaking to the children, and level of engagement with the children.

In contrast, the Promising Practices Rating Scale was specifically developed to rate the quality of a variety of more global aspects of afterschool settings as they relate to youth outcomes. The PPRS collects information on types of afterschool program activities, available resources and materials, and the extent to which supportive practices were observed. Some of the supportive practices measured are supportive relations with adults, supportive relationships with peers, appropriate structure, levels of engagement, and chaos. The PPRS also includes subscales assessing opportunities for cognitive growth, overcontrol, and mastery orientation but these concepts were not part of our conceptual logic model. We describe the reliability and validity of our measures in Chapter 3.

The Relationship between Implementation and Setting Quality

With reliable methods in place for assessing afterschool program setting quality, we next looked at the implementation of effective behavioral practices in afterschool. Our conceptual model predicted that high implementation quality would lead to higher-quality settings, and that this would result in a greater improvement in child outcomes. Thus training and coaching on PaxGBG would lead to more positive behavioral practices, improving the quality of the setting even more. In order to test this model we needed to be able to accurately measure implementation.

In the present study three measures were used to assess the fidelity of implementation by 76 afterschool programs serving 880 children over the five year span of the research project. This mixed-methods study included five waves of structured observations (two in the fall, one in the winter, and two in the spring) such as the use of praise, clear directions, and contingent rewards. It also included data posted to the website by PaxGBG coaches based on their weekly observations of afterschool programs. The third type of measurement was taken by the afterschool staff members themselves, in which they kept track and recorded the number of PaxGBG elements they used during each week (Table 5.1).

Effects of High Fidelity of Implementation of Staff Behavioral Practices on Setting Quality

We examined afterschool programs that exhibited low and high levels of implementation measured by our independently observed measure, the ACA. We found several benefits of PaxGBG for sites that had high levels of implementation, including less staff harshness (measured by the observed CIS), more supportive relationships with adults, more appropriate levels of structure, and more engagement among staff and youth (measured by the observed PPRS).

> "Our ability to randomly assign afterschool programs to use and receive PaxGBG training versus continue "business as usual" is a crucial strength of the study. It provides confidence that the differences in outcomes are really due to the PaxGBG training and not other differences between the sites."
>
> *— Wayne Osgood, Researcher*

The results of our research on effects on afterschool settings are affected by how well staff use effective behavioral practices (Smith, Osgood, Oh, & Caldwell, under review). We saw that the level of engagement (PPRS-LE) holds relatively stable in the PaxGBG condition over time while the

Table 5.1: *Measures of Fidelity of Implementation*

Number	Type of Measure	Measured By	Number of Items	Measurement Frequency
1	Afterschool Climate Assessment (ACA)	Trained, independent observers blind to condition	20 questions in binary (yes/no) checklist	5 times/year
2	Web-based data on number of PaxGBG elements used by staff members during weekly coach observation	Coaches on research team who observed sites weekly	17 practices (10 basic GBG Game and 7 Pax practices [kernels])	Weekly
3	Paper-based data on number of PaxGBG elements used during entire week	Afterschool staff members recorded on a calendar all PaxGBG elements used each week	17 practices (10 basic GBG Game and 7 Pax practices [kernels])	Weekly

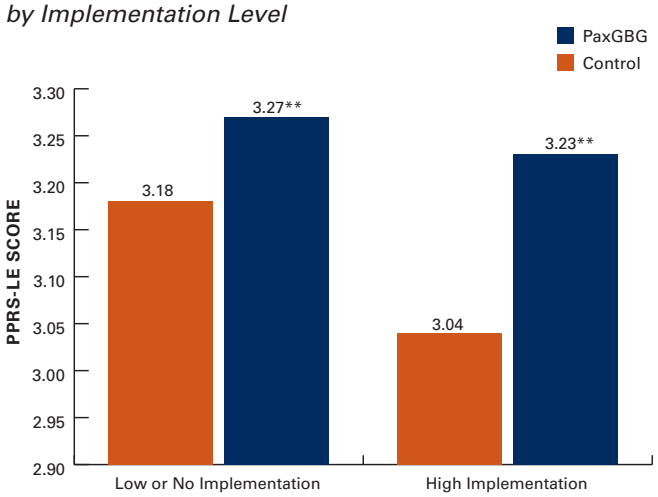
controls decrease in engagement over time (Figure 5.2). We saw decreases in the (CIS-H) harshness of staff toward the students, particularly in high-implementing programs (Figure 5.3). We also recorded improvements in supportive relationships with adults (PPRS-SRA) (Figure 5.4) and in appropriate structure (PPRS-AS) with greater impact in the high-implementation group (Figure 5.5).

It was important to find that, when well implemented, programs that received training and coaching in PaxGBG, and implemented what they learned, impacted the setting in terms of appropriate structure and support. The next question concerned whether PaxGBG benefitted children's behavior as well.

Goal of Child Behavior Outcomes Measurement

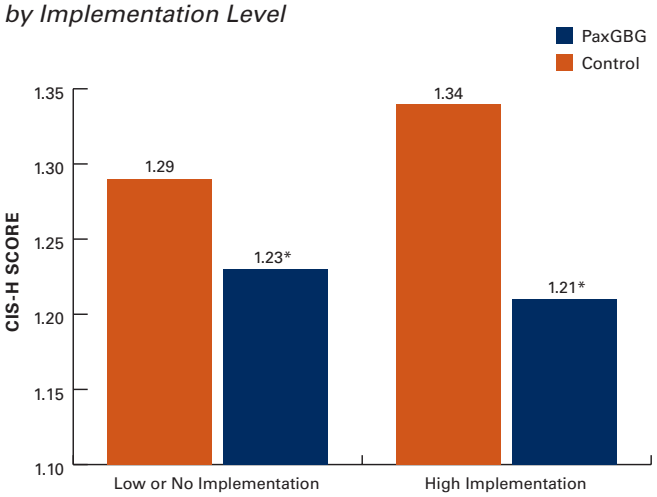
Being able to measure children's behavioral outcomes was a critical goal of the entire five-year research project. We wanted to know if the introduction and use of the PaxGBG during one academic year made a difference in the behaviors children exhibited. Based on the data on PaxGBG implemented in schools, and assuming that we had provided a similar

Figure 5.2: *Moderation of Level of Engagement (LE) by Implementation Level*



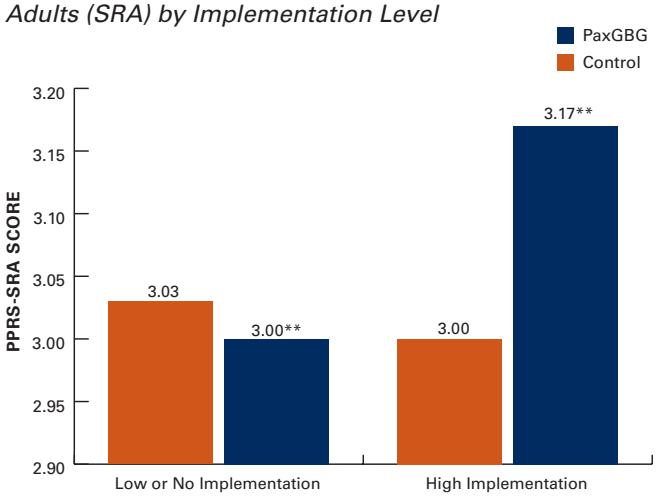
**Note: p <0.01, results of HLM Analyses.

Figure 5.3: *Moderation of Harshness (H) by Implementation Level*



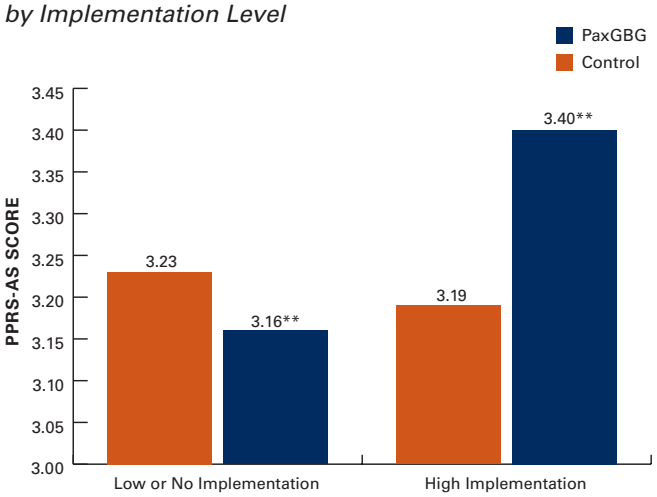
*Note: p <0.05, results of HLM Analyses.

Figure 5.4: *Moderation of Supportive Relationships with Adults (SRA) by Implementation Level*



**Note: p <0.01, results of HLM Analyses.

Figure 5.5: *Moderation of Appropriate Structure (AS) by Implementation Level*



**Note: p <0.01, results of HLM Analyses.

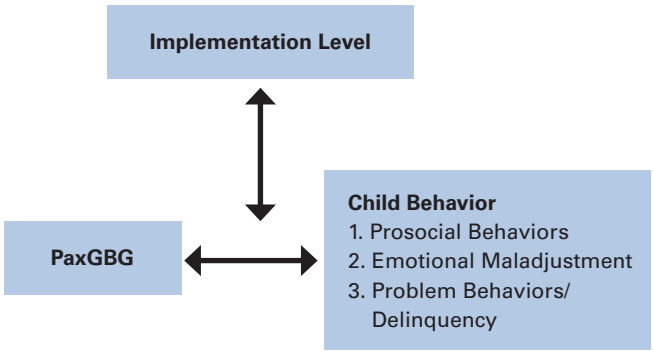
experience with PaxGBG in afterschool settings, we expected to see an increase in prosocial behaviors and a decrease in problem behaviors in children in the experimental vs. the control sites. However, we also suspected that fidelity of implementation would moderate the effects on child behavior as it did for the settings. The conceptual model shown in Figure 5.6 expresses our view of how the implementation fidelity of an EBP program (PaxGBG) may impact child behaviors.

Measures of Child Behavior

Child behavioral outcomes were assessed in several ways (Table 5.2). First, the children were surveyed using the 27-item Strengths, Difficulties Questionnaire (SDQ) with four subscales that measured hyperactivity, conduct problems, emotional symptoms, and prosocial behavior. Children were also surveyed by a self-report measure for problem behaviors/delinquency. This measure is appropriate for children of varying ages. It begins by asking if children know where to get things like apples and bananas and moves to more sensitive items like cigarettes and alcohol. It then asks if children have been involved in various activities like destroying property (vandalism), taking things that don't belong to them, smoking, drinking, and marijuana use. They were asked if they had engaged in any of these activities and with what frequency (Russo et al., 1993).

Under delinquency the following five items are included: theft, vandalism, smoking, drinking, and marijuana use. They were asked if they had engaged in any of these activities and with what frequency.

Figure 5.6: *Concept Model for Moderation of Children's Behavioral Effects by Implementation*



Child Behavior Effects Related to High Fidelity Implementation

The picture that emerges from this large-scale, randomized trial over five years of study is that first of all, there is a statistically significant difference in children's prosocial behavior between treatment (PaxGBG) and control (business as usual) across time (Figure 5.7). This was found in the children's self-report on the SDQ survey of such items

Table 5.2: *Measures of Child Behavior Outcomes*

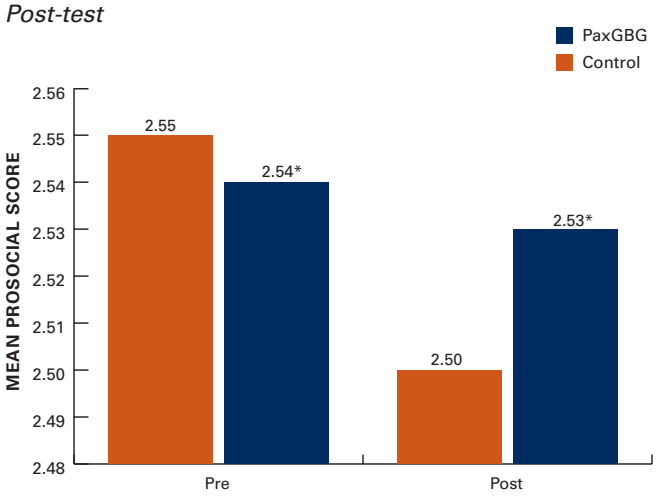
Number	Type of Measure	Measured By	Number and Type of Items	Measurement Frequency
1	Strengths and Difficulties Questionnaire (SDQ) (Goodman, Metzler, & Bailey, 2003)	Children	27 items with 4 subscales: —Hyperactivity —Conduct problems —Emotional symptoms —Prosocial behavior	Pre and Post Surveys
2	Survey for Delinquency and Problem Behaviors (Russo et al., 1993)	Children	5 items Yes/no and frequency of engagement in: —Theft —Vandalism —Smoking —Drinking —Marijuana use	Pre and Post Surveys

as sharing with others, listening to them, and caring what happens to them. We saw significant differences in these measures of prosocial behavior in treatment groups vs. control groups with control children exhibiting decreased prosocial behavior across time.

Some of the other effects that we observed on children's behavior were mediated by the fidelity of implementation, as we expected. We saw that in the high-implementation control when independently observed implementation of PaxGBG was low, there was increased observed hyperactivity (Figure 5.8). We saw fewer problem behaviors (such as smoking, drinking, vandalism, and theft) with high implementation as measured by staff reported minutes playing GBG (Figure 5.9).

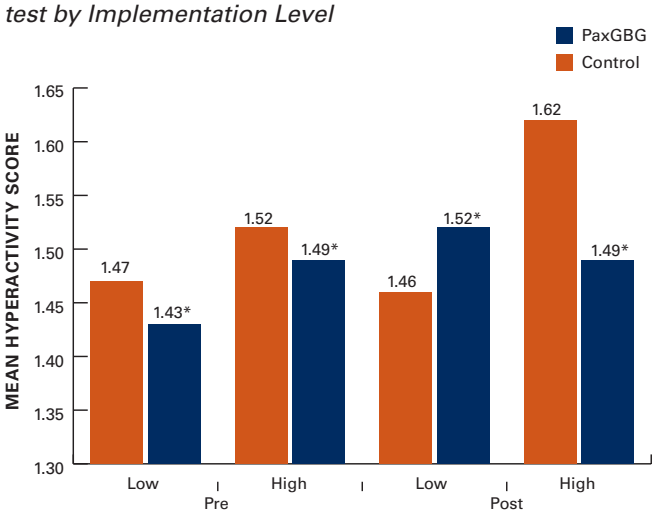
These results are complex, and are summarized conceptually (Table 5.3). First, children's prosocial behavior remained stable over time in programs that implemented PaxGBG. On the other hand, in the control sites prosocial behavior decreased during the course of the fall and spring assessments. Secondly, when programs had high levels of implemention of positive behavioral management strategies promoted by PaxGBG, children evidenced lower hyperactivity. Thirdly, with regard to problem behaviors (such as smoking, drug and alcohol use, vandalism, and theft) we noticed that how well PaxGBG was implemented made a difference. Program sites participating in PaxGBG varied in how much they

Figure 5.7: *Prosocial Behavior: Change from Pre-test to Post-test*



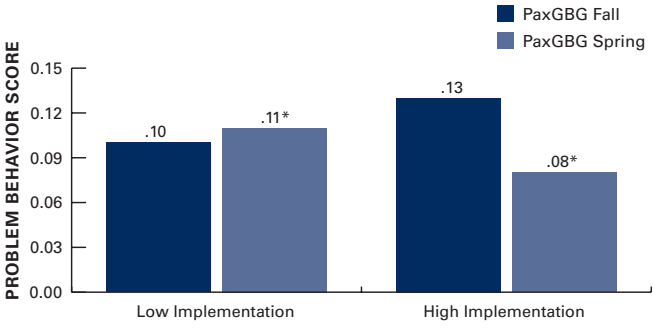
*Note: p < .05, results of HLM Analyses.

Figure 5.8: *Hyperactivity: Change from Pre-test to Post-test by Implementation Level*



*Note: p < .05, results of HLM Analyses.

Figure 5.9: *Problem Behaviors by Implementation Level (Minutes Playing Game)*



*Note: p < .05, results of HLM Analyses.

Table 5.3: *Effects of PaxGBG on Children's Behavior in Afterschool Programs in One Academic Year*

Behavior Measure	Child Behavioral Outcomes	Results Predicted by Our Model	Observed Results	Notes
1	Prosocial Behavior	↑	↔	Decreased in control, while remained stable in PaxGBG condition
2	Hyperactivity	↓	↓	Decreased in PaxGBG vs. control with high fidelity implementation
3	Problem Behavior (Delinquency)	↓	↓	Decreased with high-fidelity implementation (measured by minutes playing PaxGBG)

played the game. Therefore, we show the data for high- and low-implementing sites based on how many minutes were spent playing PaxGBG. When implementation was measured in this way (by the number of minutes actually playing the game) implementation resulted in less problem behavior such as theft, vandalism, and experimentation with substances.

As we expected, afterschool programs that integrated the use of evidence-based practices, namely PaxGBG, into their routines demonstrated less staff harshness and more appropriate structure and engagement in their sites. Children in these well-implementing sites reported less hyperactivity and less problem behavior, and the children receiving PaxGBG reported having more prosocial attitudes like caring, listening, and sharing with others.

Conclusions and Future Directions

Conclusions from Our Funded Five-Year Research Study

The research project we have described was aimed at improving the quality of afterschool settings using evidence-based strategies and a well-researched behavior management system. We undertook this research in a large number (76) of afterschool programs serving approximately 300 staff and 900 children in grades 2–5 from diverse racial-ethnic backgrounds and geographic locales. The GBG behavior management strategy has been used in school settings with documented improvements in decreasing problem behavior and substance abuse with effects lasting in middle-school and early adulthood (Kellam et al., 2008; Kellam & Anthony, 1998). We hypothesized that the same behavior strategy could be adapted to afterschool settings and that we would also see positive results on children's behavior.

The Test of Our Conceptual Model

We hypothesized that support from adults and peers, appropriate structure, and opportunities for engagement would be important to positive youth development, based upon previous research. We found empirical support for our model indicating that connectedness and empowerment among youth would be important for youth behavior. The connectedness aspects of collective efficacy emerged as important to better emotional adjustment and prosocial behavior, while the agency and empowerment aspect, in which youth reported encouraging good behavior in their peers, was especially related to lower levels of reported vandalism, theft, and substance abuse. This provided initial promise that our approach, in which we expected to impact youth behavior by improving the settings that foster connectedness and engagement, was valid.

Implementing an Evidence-Based Practice (EBP) in Afterschool

We encountered many challenges in migrating a school-based behavior strategy to afterschool programs. The main challenges included the wide variety of different types of programs, the large geographic distances covered, the wide array of afterschool staff education and experience, the short time span and variable attendance by the children, the mixture of age groupings, staff turnover and the differences in receptivity of staff to learn and use this new behavior strategy. Extensive research staff support was necessary to train and encourage the afterschool staff, and to keep them and the children excited and engaged.

> "We are building a community in afterschool programs. It's not just the staff helping to promote good behavior, but the children themselves—among themselves."
>
> *— Emilie Smith*
> *Principal Investigator*

Despite these formidable challenges, we learned a great deal about what types of efforts are necessary to make the translation of PaxGBG into afterschool programs successful. Though the research team was geographically more distant, our coaches were more proximal to the program sites. Also, through periodic email correspondence, videoconferences, and attendance at the bimonthly trainings, and weekly visits from coaches, we forged important bonds with afterschool program staff and youth. Though staff turnover was high, often it represented upward mobility for underpaid staff. We drew upon staff to teach other staff, along with the coaches, and often the children asked if they could play the game. We found that our sensitivity to cultural norms allowed us to "translate" the principles of reward and reinforcement and to emphasize the ability of youth to "earn" their activities, which was more palatable for some staff who might be older. Racial-ethnic minority groups viewed preparing youth for the challenges ahead as tantamount to their jobs. Furthermore, our strategies included engaging older children in team jobs and leadership roles. For example, we learned how to structure our training sessions into digestible parts and how to support afterschool program staff throughout the process of learning and practicing the new strategy. We also learned how to motivate and inspire children, staff, and directors to keep PaxGBG new, fun, and alive. Perhaps most importantly, we learned how to win the trust of the many afterschool staff members through careful listening and responding to their needs and suggestions. Thus our work with practitioners was truly collaborative.

However, our work revealed that program capacity is an important factor in the quality implementation of evidence-based practices. We measured organizational capacity with information from program directors in terms of the frequency of meetings, communication, and professional development opportunities. We also measured their community capacity and the ability of programs to identify, collaborate, and marshal resources within families, schools, and their local community. Programs that possessed both types of capacity were most successful in implementing our innovative approach. In future research, continued efforts are needed in not only measuring but building capacity; capacity is potentially critical to future efforts to help afterschool programs serving those most in need of innovative approaches.

Effects upon Afterschool Programs and Youth

Any attempt to change behavior and habits of individuals is an uphill battle. In order for change to occur, the participants must selfishly see a benefit to themselves. We were very encouraged that many staff and children willingly and eagerly learned and practiced the game. For the afterschool programs that received training and technical assistance and implemented these strategies well, these programs demonstrated closer relationships and gained a sense of caring and belonging. Furthermore, with the increases in appropriate structure, there was less

hyperactivity among children as well. These benefits may be the most important ways to encourage good behavior and a structured, cooperative afterschool program. We have seen that practicing the PaxGBG is an effective tool for improving afterschool program quality and children's behavior. We believe that when effectively implemented, the program continues to have many benefits and should be more widely practiced and disseminated to afterschool programs.

Our study has some generalizability because it uses a sample of youth and staff across a northeastern state that varies in terms of race-ethnicity, gender, socioeconomic status, and geographic locale. Thus, when looking at data across the three-year cohorts of participants, we can be more confident that we have included some of the types of youth and staff typically found in ASP. There are a number of strengths of this study which uses multi-level data—data from the youth, the staff, the directors, as well as independent observers across multiple timepoints in the year.

Questions and Limitations

Some interesting questions remain. For example, precisely how long and how frequently does PaxGBG need to be practiced in afterschool programs to achieve successful implementation? What type of and how much training and support do staff need to be effective in implementing PaxGBG? How do attendance and participation in afterschool programs relate to children's ability to benefit from its effects? Some of these questions will be addressed in a current study for 2013–2014, in which alternative training and coaching support (technologically-based vs. in-person) are being examined.

However, there are some limitations to the research reported here. As discussed previously in this report, benefits to programs and youth were only found with programs that implemented the innovative approaches well. More research is needed on the characteristics of the programs and staff who implement well, with an eye toward how to foster the capacity and characteristics of well-implementing

sites more broadly. Further, these results span only one academic year, so we were not able to capture long-term data on the effects of playing the PaxGBG on children's behavior. However, we are following up with the children in this study so that in the future, more information will be available. Further, currently, the information on the programs is based on rigorous independent observations of them. Future research could examine these aspects using data from staff in the programs as well. Additional corroboration of the child data from their teachers in school could be helpful, particularly since past research has shown that quality practices in afterschool benefit children's academic performance as well. Also, approaches that bridge families and schools from the afterschool setting might also prove promising.

Promising Future Studies

As children develop, their experiences broaden beyond immediate family to include the influences of extended family, neighbors, friends, school, religious organizations, and others in the wider community. At each level of experience, these external influences are layered onto or filtered through the original experience of family life to shape the child's development.

To examine the contribution of the child's wider developmental context, our specific interest was the connections experienced by children outside of their afterschool programs. We believe that these other influences are significant contributors to their behaviors both inside and outside of afterschool care. Specifically, we were most interested in children's connection to their schools and their neighborhoods.

School Connectedness

A significant body of research has shown that adolescents who feel a strong connection to their school enjoy academic achievement and prosocial behavior (Battistich et al., 2004; Blum & Libbey, 2004; Cunningham, 2007). In a study, led by Professor Beverly Vandiver, LEGACY Together collaborators decided to explore factors that might contribute to developing a feeling of school connectedness with students at a younger age—in elementary school. We also explored whether students who had internalized a stronger feeling of racial/ethnic pride would have a correspondingly stronger sense of school connectedness (Manjunath, Vandiver, & Smith, in preparation).

Our findings support prior studies on the positive correlation between school connectedness and academic self-efficacy and between school connectedness and prosocial behavior, extending those studies into the elementary school years. We also obtained additional data on the introduction of the factor of racial/ethnic pride. Results supported the hypothesis that ethnic pride does impact school connectedness in a positive way for students who might otherwise not feel engaged academically. These results imply that children's feelings about themselves (as members of a racial/ethnic group) can influence their feelings about school and abilities to perform well academically and in their social relationships.

Influence of Neighborhoods

In addition to examining school connectedness and children's behavior, we were also interested in the influence of neighborhoods (particularly disadvantaged neighborhoods) on children's behavior both academically and socially. It is possible that children whose families may have instilled positive attitudes and perceptions about their low-income neighborhood perceive/receive other benefits from their neighborhood that outweigh the economic aspects. In these cases children may be able to overcome typical predictions of bad behavior and low academic achievement normally associated with low SES.

LEGACY Together collaborator and Assistant Professor of Psychology Dawn Witherspoon examined how children in afterschool programs perceived their neighborhoods and the ways in which those perceptions influenced their adjustment through academic self-efficacy and conduct

problems (Witherspoon, Lindeke, Smith, & Mason, in review). We found that a sense of racial and ethnic pride did correlate positively to a feeling of academic self-efficacy, despite neighborhood disadvantage.

The implication of this research is that children in the elementary years are developing their racial/ethnic attitudes, and neighborhood context can be a factor in the development of this awareness. Even in cases of economic disadvantage, other neighborhood factors can contribute to positive feelings and the development of racial/ethnic pride. Racial/ethnic pride seems to be a protective factor that fosters academic self-efficacy and, to some extent, prosocial behavior, regardless of the neighborhood's low-economic status.

> "Afterschool programs are part of the neighborhoods in which they are housed. There are ways in which the afterschool setting may solidify, increase, or decrease positive attitudes about self and culture through youth's interactions with program staff and their peers."
>
> *— Dawn Witherspoon, Researcher*

Closing Statement

In summary, the LEGACY Together project was focused on community-based afterschool programs, a new frontier for prevention of problem behavior and promotion of positive youth development. We surmised that because of the need for afterschool programming, and even more for quality programming, we could collaborate with afterschool programs to help them buy-into, and implement, an evidence-based strategy that was not a curriculum, but a fun and easy-to-use set of approaches. We adapted PaxGBG to afterschool programs despite a number of challenges, and were able to help a number of programs implement the strategy, though substantial variation existed. However, as we expected, when programs are supportive and engaging, youth fare well. Misbehavior and hyperactivity are reduced in such programs when good behavioral practices are implemented well in experimental sites receiving training and coaching in PaxGBG. Perhaps even more revealing and important, we have seen that PaxGBG fosters a sense of belonging and caring, and this creates a feeling of community where (as our project name suggests) youth and adults positively influence each other, together.

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