Making a Difference in Schools

THE BIG BROTHERS BIG SISTERS
SCHOOL-BASED MENTORING
IMPACT STUDY

Carla Herrera, Jean Baldwin Grossman, Tina J. Kauh,
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Public/Private Ventures is a national nonprofit organization that seeks to improve the effectiveness of social policies and programs. P/PV designs, tests and studies initiatives that increase supports, skills and opportunities of residents of low-income communities; works with policymakers to see that the lessons and evidence produced are reflected in policy; and provides training, technical assistance and learning opportunities to practitioners based on documented effective practices.

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Executive Summary

With growing pressure to improve student performance, schools are increasingly looking outside their doors for programs that can enrich children's lives academically and socially. As part of these efforts, many schools have begun partnering with programs that provide their students with mentors—adults or older youth who visit students on the school campus, typically one hour a week during or after school, to provide them with friendship, support and academic help. It is hoped that by providing children with more one-on-one attention, they will be more ready to learn during class time.

These school-based mentoring (SBM) programs have become a popular choice for several reasons. Mentoring is based on a straightforward concept—children benefit from additional adult support and guidance in their lives—which both schools and parents can easily buy into. And because they require very little school staff time and are amenable to serving students during the school day, the programs are inexpensive and relatively easy for schools to adopt. Indeed, SBM is the fastest growing form of mentoring in America today and serves hundreds of thousands of vulnerable students across the country.

Background

The growth of SBM has been fueled, in part, by the proven benefits of community-based mentoring (CBM). Research on this more established program model—in which matches meet regularly in locations of their choosing—has provided strong evidence of the approach's benefits, including decreases in drug and alcohol use, enhanced peer and parent-child relationships, better school attendance and improved attitudes about and performance in school (Tierney, Grossman and Resch, 1995).

Research suggests that youth may also benefit from SBM; however, because most previous studies did not use a rigorous experimental design, it is unclear how many of the observed improvements can be

Participating BBBS Agencies

The following 10 agencies participated in the study:

Agency	City
BBBS of Central Ohio	Columbus, OH
BBBS of Colorado, Inc.	Denver, CO
BBBS of Eastern Maine	Ellsworth, ME
BBBS of Eastern Missouri, Inc.	St. Louis, MO
BBBS of Greater Cleveland	Cleveland, OH
BBBS of Island County	Oak Harbor, WA
BBBS of North Texas	Dallas, TX
BBBS of Northeastern Arizona	Show Low, AZ
BBBS of Northwest Georgia Mountains, Inc.	Dalton, GA
BBBS of The Bridge	Wilkes-Barre, PA

definitively attributed to the program. Most existing studies also do not assess whether benefits of SBM are sustained beyond the immediate time frame of program involvement (usually one school year). Given the large number of students involved in SBM, it is crucial to understand more about both the effectiveness of the programs and how they operate. If SBM can improve youth's experiences and performance in school, its widespread use could ultimately enhance the academic experiences of millions of children.

Thus, Public/Private Ventures (P/PV), with the cooperation of Big Brothers Big Sisters of America (BBBSA), embarked on a rigorous experimental evaluation of the BBBS SBM program, which is currently serving about 126,000 children nationwide. The study tested the extent to which BBBS SBM can, in fact, provide youth with measurable benefits. It also explored some of the potential strengths and limitations of this program model to help schools make informed choices about how to help their students succeed and to guide the mentoring field

in its continued growth. More specifically, the study examined a series of interrelated questions:

- What are the characteristics of the participating BBBS SBM programs?

- Who are the youth and volunteers involved in these programs?

- What benefits does BBBS SBM provide to youth socially, behaviorally, attitudinally and academically?

- What kinds of mentoring experiences help to ensure benefits?

- How much do these programs cost?

Ten BBBS agencies across the country participated in the study, involving more than 70 schools. Overall, 1,139 youth in grades four through nine were recruited into the SBM programs as they normally are—mostly through school referrals. A lottery was used to randomly select half of the youth (the "Littles") to be matched with a volunteer mentor, while the other half (their "non-mentored peers") were placed on the agency's waiting list to be matched at the conclusion of the study, 15 months later.

To learn about the children's lives, match characteristics, and how youth benefited from the program, the youth, their teachers and mentors were surveyed at three time points: as children were beginning their program involvement in Fall 2004 (the baseline), at the end of the 2004-2005 school year (the first follow-up) and again in late Fall 2005, in the next school year, shortly before the students' winter break (the second follow-up). Mentors were also surveyed in early Fall 2005 to provide information on communication with their Littles during the summer. To learn more about the programs, we surveyed and spoke with BBBS staff and also interviewed teachers, principals and school liaisons (i.e., school staff, typically a counselor or principal, responsible for coordinating the program with BBBS staff). In addition, a cost survey was administered to agency staff in winter of the 2005-2006 school year.

Findings

The study allowed us to answer several questions of import in the mentoring field today. The following pages summarize our findings and conclusions.

Programs are quite diverse in their structure and focus. The programs involved in our study served children at different times and places within the school, used different age groups of volunteers and engaged matches in a wide range of activities. In some cases, mentors met alone with their Littles; in others, all matches met at one time in a common location. Programs have evolved in this way to meet the differing needs and expectations of schools and a widening volunteer base. Yet, programs may also need to consider which of these characteristics, if any, are most conducive to fostering strong relationships and benefits for youth—a question that awaits future research.

BBBS SBM is neither a tutoring program nor a CBM program placed inside a school. Contrary to concerns that SBM is simply a tutoring program, only 9 percent of the mentors cited academic improvement as their central goal in their meetings with youth, and only 11 percent of the programs focused primarily on academic activities. Yet, unlike CBM, these programs typically have some degree of structure (the programs outline at least some of the activities engaged in by the matches), and most matches do engage in some academic activities. Moreover, although most SBM volunteers are focused on relationship development, matches have less time over the course of the school year to develop the kind of long-lasting, close relationships commonly seen in CBM programs. In fact, despite fairly high levels of closeness reported by youth, volunteers reported feeling less close to their Littles than CBM volunteers involved in earlier studies.

Programs are reaching students with several risk factors and attracting a diverse group of volunteers— many of whom would not have volunteered in CBM programs. By targeting schools in low-income areas that were facing challenges in meeting academic performance standards and using teacher (rather than parent) referrals to identify children, the BBBS agencies reached students who might need the kind

of support that the program provides. Approximately 80 percent of the youth in our study received free or reduced-price lunch and/or were living with only one parent, and 77 percent were having difficulties in one or more of four assessed areas of risk (i.e., academic performance, school behavior, relationships and youth-reported misconduct).

SBM programs were also quite successful in attracting volunteers who, because of their age, would have been much less likely to participate in CBM. Almost half were enrolled in high school and close to one fifth in college—groups that are not typically utilized in CBM programs.

By the end of the first school year, the program had improved Littles' outcomes in a range of areas, including their academic attitudes, performance and behaviors. On average, given the typical delays in starting programs at the beginning of the school year, Littles received only slightly more than five months of SBM during their first school year of participation. Despite this short time frame, teachers reported that, relative to their non-mentored peers, the Littles showed improvements in the following outcomes:

- Overall academic performance, as well as in the specific subjects of

  – Science, and

  – Written and oral language;

- Quality of class work;

- Number of assignments turned in (homework and in-class assignments); and

- Serious school infractions (including principal's office visits, fighting and suspensions).

They also improved in the following youth-reported outcomes:

- Scholastic efficacy (feeling more competent academically); and

- Skipping school—which teachers confirmed by reporting that fewer Littles had an unexcused absence in the four weeks prior to our survey.

Littles were also significantly more likely than their non-mentored peers to report an important additional benefit:

- The presence of a non-parental adult in their life who provided them with the types of supports BBBS strives to provide to participants—someone they look up to and talk to about personal problems, who cares about what happens to them and influences the choices they make.

We did not see benefits in any of the out-of-school areas we examined, including drug and alcohol use, misconduct outside of school, relationships with parents and peers, and self-esteem.

The sizes of the first-school-year impacts, while modest, are very similar to those reported in P/PV's 1995 study of BBBS CBM programs (Tierney, Grossman and Resch, 1995).

One school year of the BBBS SBM program is not enough to permanently improve youth's academic performance. By the time of the second follow-up, in late fall of the second school year of the study, close to one third of the Littles had transferred to a new school—typical of SBM programs that serve fifth and eighth graders (who transition to middle or high school) and of the general mobility seen in schools served by these and other BBBS programs. These transfers contributed to a high level of attrition from the program: only 52 percent of all Littles received mentoring in the second school year of the study. Given the late start of many programs, even youth who were still involved in the program received only about three additional months of mentoring before the second follow-up survey.

At the second follow-up, Littles, compared to their non-mentored peers, sustained impacts in only one outcome from the previous school year: they were less likely to have started skipping school. However, they continued to be more likely than their non-mentored peers to report having a relationship with a supportive and caring non-parental adult. And, they were more confident that they would attend and finish college.

High attrition (in large part due to youth changing schools) almost certainly contributed to the lack of strong impacts for the full group of Littles. Those Littles whose participation ended in the first school year retained none of their positive school-related impacts at the second follow-up. This confirms what other studies have shown: short-term programs for youth do not induce long-term change (e.g., Walker and Vilella-Vellez, 1992; Aseltine, Dupre and Lamlein, 2000). Most other evaluations, including P/PV's CBM impact study, have not included post-program follow-up assessments, so it is unclear whether the effects of these other programs would persist over time.

High attrition also posed an additional, related challenge: Combined with the timing of our second follow-up, only a few months after the summer break, it undermined our ability to confidently determine the longer-term effects of SBM participation.

Longer matches and closer relationships are associated with stronger impacts. Exploratory analyses revealed positive associations between match length and outcomes at the end of the first school year, suggesting that longer matches may contribute to stronger impacts. The evidence from the second school year is less clear. Those youth who received mentoring in Year Two appeared to fare slightly better in school-related outcomes than those whose mentoring experience ended after the first school year, although only two differences (better classroom behavior and having a better relationship with their teacher) between these groups were large enough to achieve statistical significance.

Similar analyses found that those Littles who experienced more than one school year of very high-quality relationships received bigger benefits from program participation than Littles in shorter or weaker relationships. And, importantly, those Littles who were involved in weaker one-school-year relationships showed declines on several outcomes, relative to their non-mentored peers, in the second school year of the study.

Although our analyses of both match length and relationship quality could not rule out the possibility that youth characteristics were responsible for these associations, they do hint at the importance of strengthening the quality and length of SBM relationships.

Summer meetings appear to be an important way to lengthen and strengthen relationships. Only about 21 percent of mentors in this study communicated with their Littles over the summer at least biweekly, typically through letters or email or at agency-sponsored events. And the vast majority (85 percent) of these matches participated in one of the five agencies that made special efforts to encourage and support this communication. These efforts paid off: While we did not find strong evidence that summer contact was linked with bigger impacts, we did find associations with both match longevity and quality. Matches that communicated over the summer were more likely to carry over into the following school year and lasted significantly longer after the end of the summer than those that did not communicate. They also had stronger relationships in the second year of the study, regardless of the quality of their match in the previous spring.

Training, supervision and school support may also be key in fostering stronger and longer relationships. Although SBM volunteers generally have easier access to support (from both school and BBBS program staff) than CBM mentors, participating programs did not appear to consistently communicate with volunteers or provide them all with training. Yet, our analyses suggest that training, support and adequate access to school resources and space may be important in creating strong, long-lasting relationships.

SBM can be operated at fairly low cost, approximately $1,000 per student per school year. Agencies paid approximately $900 out of their budgets, while about $100 of goods and services were donated by the school and others. These costs are fairly comparable to estimates for CBM programs implemented by the same agencies.

Recommendations

We believe that BBBS SBM is a promising intervention that merits support as it further refines its program model. The positive impacts on school-related outcomes at the end of the first school year, combined with the fact that the program is reaching many needy students who could benefit from additional attention and support in school, make the intervention particularly valuable for schools. SBM is also valuable for agencies in that it complements CBM efforts, both in its impacts and its ability to utilize volunteers who might not participate in CBM.

However, our findings also highlight several program practices that need strengthening as the field moves forward. Most important, as research has shown for other short-term interventions, the impacts we found at the end of the first school year do not persist without continued participation. This suggests that lengthening SBM matches may be crucial to ensuring success. Our analyses also suggest that improving the quality and continuity of SBM relationships may be important. Making these improvements will be challenging, given the current structure of the program. SBM programs often serve only a handful of schools in a community—when a child moves, transfers or transitions to middle or high school, programs can only rarely continue to serve the child. Student volunteers are also likely to have changing class schedules and can often only volunteer for a school year or semester. In addition, even those matches that continue meeting in a second school year often do not communicate over the summer, creating a four-month gap in the development of their relationship.

Our recommendations thus focus on ways that programs can increase the length, quality and continuity of SBM relationships:

- Start matches as early in the school year as possible;

- Ensure that volunteers provide at least one school year of mentoring;

- Build programs (or relationships with established programs) in feeder schools to sustain matches and provide youth with consistency through school transitions;

- Select supportive schools for program involvement and continually foster these partnerships;

- Explore ways to bridge the summer gap;

- Develop indices of match length that reflect the summer break and, in this way, are more sensitive predictors of impacts; and

- Explore more ways to provide volunteers (particularly young volunteers) with the support and ongoing training they need to create high-quality, effective mentoring relationships.

While these kinds of changes hold promise for strengthening matches—and by extension, impacts,

an important issue remains: Because the costs of SBM are comparable to those of CBM, and it appears to have a narrower range of impacts, why should agencies and funders invest in SBM when CBM could give them "more" impacts for their money? The important question, however, is not whether one strategy is "better," but whether programs and their funders can reach all of the youth, and the types of youth, they want to serve using a single model. BBBS' and other programs' experience suggests they cannot. Volunteers who are willing to commit to CBM are scarce. Although some programs and funders may prefer to serve all youth with CBM, they would likely never reach a substantial number of the children who could benefit from mentoring but have not been reached in prior CBM efforts. And those who prefer to serve all youth with SBM may not provide as many youth with the kind of long-term relationship and more widespread benefits that can result from a strong CBM program.

It is also likely that different types of youth may benefit from different types of mentoring. CBM is likely best suited for youth who need a missing role model and friend and would benefit from a long-term, stable relationship. SBM, as it is currently implemented, is likely best suited for youth who would benefit from additional attention in school and an incentive to come to school, thereby improving their behavior and performance in this context. In other words, different children and communities have different needs that neither option can fully address alone. A complementary approach using both strategies is likely the best way for programs and funders to reach a wide, diverse group of youth and volunteers.

A big emphasis in the field over the past 10 years has been on increasing the number of children served by SBM programs. Our research has pointed to some ways in which these programs can be strengthened. Turning these findings and recommendations into practice will require time and money and will likely come at the expense of some growth. We believe that this kind of adjustment in focus—strengthening SBM programs so that growth is consistent with quality—is a worthwhile investment. The impacts we found in the first year of the study show that the program is capable of yielding solid benefits for youth. Building on this program model is likely to strengthen these very promising findings.

Introduction

With growing pressure to improve student performance, schools are increasingly looking outside their doors for programs that can enrich children's lives academically and socially. As part of these efforts, many schools have begun partnering with programs that provide their students with mentors—adults or older youth who visit students on the school campus, typically one hour a week during or after school, to provide them with friendship, support and academic help.

These school-based mentoring (SBM) programs have become a popular choice for several reasons. Mentoring is based on a straightforward concept—children benefit from additional adult support and guidance in their lives—which both schools and parents can easily buy into. And because they require very little school staff time and are amenable to serving students during the school day, the programs are inexpensive and relatively easy for schools to adopt.

In 2005, almost 870,000 adults were mentoring children in schools as part of a formal program (MENTOR, 2006). But despite its popularity, we know very little about whether SBM can provide students with real benefits. Children spend about 40 percent of their waking hours at school, acquiring academic competencies, values and behaviors, and forming key relationships with adults and other children that can have a profound impact on their development. If SBM can improve youth's experiences and performance in this context, its widespread use could improve the academic experiences of millions of children. On the other hand, if SBM is not effective, it will be important to outline its limitations so that school administrators, funders and policymakers can redirect resources into other, proven strategies that may be more likely to affect youth's lives in positive ways.

To rigorously address the question of whether SBM can improve the lives of youth, Big Brothers Big Sisters of America (BBBSA) and Public/Private Ventures (P/PV) partnered to undertake a two-part evaluation of the Big Brothers Big Sisters (BBBS) SBM program. The first study, conducted by BBBSA, examined how these programs are implemented (Hansen, 2005). The second study, presented in this report, is a national, random assignment impact evaluation conducted by P/PV.

There are several reasons why a large-scale impact study of SBM should focus on the BBBS program model. BBBS SBM has seen particularly widespread growth and, in 2006, served well over 100,000 children across the country (BBBSA, 2006b). In addition, BBBS is a trusted and established organization, with over a century of experience, about 420 agencies nationwide, and national standards for volunteer screening, training and supervision to support the development of high-quality SBM programs. This study tests the extent to which BBBS SBM can, in fact, provide youth with measurable benefits. It also explores some of the potential strengths and limitations of this program model to help schools make informed choices about how to help their students succeed and to guide the mentoring field in its continued growth.

The History of BBBS SBM

BBBS began widespread use of the SBM model about 10 years ago, as an extension of its more established community-based mentoring (CBM) program. Mentors in CBM programs are expected to meet regularly with youth in locations of their choosing and engage in a variety of activities to provide youth with a positive role model and friend. Several studies have been conducted on CBM, describing the potential strength of these relationships (Morrow and Styles, 1995); the program practices that support them (Furano et al., 1993); and the broad impacts they can produce, including decreases in drug and alcohol use (Tierney, Grossman and Resch, 1995), higher levels of self-control and cooperation (Aseltine, Dupre and Lamlein, 2000), enhanced peer and parent-child relationships (Tierney, Grossman and Resch, 1995), better school attendance (LoSciuto et al., 1996)

and improved attitudes about and performance in school (Tierney, Grossman and Resch, 1995).

This success has fueled the growth and popularity of CBM. Yet, growth has been slowed by difficulty recruiting volunteers willing to commit to a community-based program for the substantial amount of time required (usually a few hours a week for at least a year). CBM programs also realized that they were not reaching some groups of children who could benefit from mentoring—children served by CBM are usually those whose parents can make the time and effort to refer them. Children most in need of mentoring may be those without a parent who can make this effort.

BBBS agencies responded to these needs by developing an approach to mentoring that would complement their community-based efforts by helping them reach and serve additional youth. BBBS SBM programs retained, with only slight modifications, the infrastructure—screening, training and supervision—crucial to the success of the CBM model, but partnered with schools to serve their students. This context shift seemed to have several practical advantages relative to the community-based approach. First, because children served by SBM are typically referred by school staff, these programs could reach youth whose parents might not have referred them to CBM. Second, the programs could rely on a different volunteer pool than that involved in CBM, including younger (high school) mentors and more business-based mentors, which simplified recruitment (Herrera, 1999; Herrera et al., 2000). Third, because matches met in one location, supervision might be less expensive than in CBM.[1]

These qualities have contributed to the remarkably rapid expansion and popularity of SBM. For the past several years, Big Brothers Big Sisters of America has made this expansion one of its top priorities. From 1999 to 2006, the number of BBBS school-based matches nationwide more than quadrupled, increasing from 27,000 to 126,000.

Potential Benefits to Youth

Can this approach provide youth with real and enduring benefits that help them succeed in school and in their broader social relationships? There are several reasons to think that it may.

In one theory of how mentoring can create positive changes in youth, Rhodes (2002) explains that a critical component is the relationship that develops between the child and the mentor. When a supportive adult consistently spends time with a child, a mutually trusting relationship forms. Through this relationship, the child begins to feel more socially accepted and supported (also see Parra et al., 2002). Individuals who perceive higher levels of support tend to view themselves more positively (Harter, 1990), which, in turn, is associated with better adjustment (Oyserman, 1993).

The school context builds on this model in several ways. SBM programs are an integral part of the school day, serving children within the school building before, during or after school. Increasing support within this context, in which parents and other non-teacher adults often have little input, could provide the child with a better experience in, and outlook on, school. Studies suggest that participation in school-based activities increases students' sense of school belonging and liking (Grossman et al., 2002; Eccles and Barber, 1999). These changes may, in turn, lead to improved attendance and academic performance. Also, because parents' involvement in children's schooling leads to more positive outcomes (see Henderson and Mapp, 2002), a mentor's involvement in the child's school life could similarly be linked with benefits (Grolnick and Slowiaczek, 1994).

The activities engaged in by BBBS school-based mentors ("Bigs") and youth (their "Littles") may also play a role in shaping impacts. School-based mentors spend more time working on academically focused activities than mentors in community-based programs (Herrera et al., 2000), which likely focuses conversations and attention on school—

on its value and youth's behavior at school, as well as relationships and problems in this context. Because many youth referred to SBM programs are academically at risk (Herrera et al., 2000), this focus may be an important route through which SBM works. Specifically, academically at-risk students often have negative perceptions of school and teachers (Pianta, Stuhlman and Hamre, 2002) and problems with time management, attention in class and test preparation (Larose and Roy, 1995). School-based mentors may offer suggestions for how to succeed at these important tasks and offer a positive perspective on school.

Further, in programs involving regular interaction between mentors and teachers, SBM may be a strong intervention for improving youth's relationships with teachers. Studies of both CBM (Rhodes, Grossman and Resch, 2000) and SBM (Karcher, Davis and Powell, 2002) found that mentoring improved youth's feelings about and toward their parents. Because school-based mentors are more likely to have direct connection and communication with children's teachers, rather than with their parents (Herrera et al., 2000), SBM could have particularly strong effects on youth's relationships with their teachers. School-based Bigs might also focus a teacher's attention on the youngsters and help realign the Littles' attitudes toward teachers. Improvements in teacher relationships could then catalyze other improvements in the youth's life, including their opinions of, and performance in, school.

The focused attention and interaction that mentors provide may also help improve the students' social skills in interactions with their peers. Research suggests that peers (particularly in elementary school) may see attention from a school-based mentor in a positive light, boosting the status of mentored youth (Herrera, 1999). Improving peer relationships early in development can be crucial in helping older adolescents stay out of trouble and stay in school (Parker and Asher, 1987).

Yet, SBM differs from community-based mentoring in three important ways that could affect its potential to benefit youth. First, the matches have briefer meetings, approximately an hour a week rather than two or three hours a week as in CBM. Second, the matches are shorter in duration, often ending after one school year (Herrera et al., 2000)

in contrast to the CBM average length of about 22 months (BBBSA, 2004). Third, perhaps in part due to their less frequent meetings, the relationships developed in these programs seem to be less strong (i.e., the mentors feel less "close" to their mentees) than those in CBM (Herrera et al., 2000; Herrera, 2004). Because longer and stronger relationships yield bigger impacts (Grossman and Johnson, 1999; Grossman and Rhodes, 2002; Slicker and Palmer, 1993), these differences may mean fewer impacts than those outlined for CBM.

Research on School-Based Mentoring

Several studies do, in fact, suggest that youth may benefit from SBM. For example, studies report benefits in academic performance (Curtis and Hansen-Schwoebel, 1999; Hansen, 2001; Hansen, 2002; Diversi and Mecham, 2005) and attitudes toward school (King et al., 2002; Portwood et al., 2005; Curtis and Hansen-Schwoebel, 1999). Others also find evidence of improvements in peer relationships and interactions (Karcher et al., 2006; Curtis and Hansen-Schwoebel, 1999; Herrera, 2004; King et al., 2002), attitudes and connectedness toward parents (Karcher et al., 2002; Karcher, 2005; Curtis and Hansen-Schwoebel, 1999) and self-esteem (Curtis and Hansen-Schwoebel, 1999; Karcher et al., 2006).

Yet, studies suggest that SBM benefits may not accrue until relationships have had a chance to develop. Lee and Cramond (1999), for example, found that only youth matched for more than one year increased in their level of aspiration. Another study found improvements in youth's self-esteem, happiness/satisfaction and self-reported popularity, as well as a reduction in anxiety but, again, only for youth matched five months or more (the Opinion Research Centre, 1995). Herrera (2004) further reported that, relative to youth in six-month or shorter matches, youth in matches lasting over one school year improved in their classroom behavior, social skills, peer relationships, academic engagement and school liking. Finally, additional evidence from a randomized study of a rural SBM program involving high-school-age mentors (Karcher, 2005) indicates that regularity in meetings is important: youth whose mentors attended more consistently showed bigger improvements in self-esteem and social skills than those whose mentors attended inconsistently.

Thus, research suggests that, with enough time, SBM may produce positive outcomes related to the social, emotional and academic growth of mentored youth. However, most of these studies do not compare mentored youth's progress with that of a randomly selected group of non-mentored youth.[2] Thus, the improvements they made over the course of these studies, in most cases, cannot definitively be attributed to program participation. Most existing studies also do not adequately assess whether benefits of SBM are sustained beyond the immediate time frame of program involvement (usually one school year). These types of enduring impacts are considered essential for demonstrating a program's effectiveness (Flay et al., 2005).

The Current Study

This large-scale, national, random assignment impact study was designed to address this need for a rigorous evaluation of school-based mentoring. Our central goal is to outline the benefits of BBBS SBM for involved youth. However, we also address several additional questions that are essential for understanding the context in which these impacts are fostered and the factors that may strengthen or diminish them. For example, because the mentor-youth relationships are formed during meetings in schools—a context that differs substantially from the contexts surrounding other types of mentoring—we describe the SBM programs, how they function within the school boundaries, and the infrastructure that supports them. These descriptions, in turn, provide indications of how the school-based characteristics of this intervention may shape the development of the mentoring relationship and its resulting impacts. Addressing this issue is particularly important because, although previous, smaller studies have described SBM programs, their characteristics are likely to have changed and diversified over the past several years during this time of unprecedented growth in the field. Similarly, costs may have also changed and will be important to understand as the field weighs costs and potential benefits.

This report, then, examines a series of interrelated questions:

- Who are the youth and volunteers involved in the participating BBBS SBM programs?

- What are the characteristics of these programs?

- What social, behavioral, attitudinal and academic benefits does involvement in the BBBS SBM program provide to youth?

- What kinds of mentoring experiences help to ensure benefits?

- How much do these programs cost?

Our findings highlight both the strengths of this program model and its current limitations. We find strong evidence that participation in the BBBS SBM program can help youth improve their performance and behavior in school. At the end of the first school year, Littles showed impacts in nine of 31 outcomes tested—all of the impacts were in school-related areas—and were more likely to report having a strong relationship with a "significant" adult outside of their family. The program's costs are fairly low (about $1,000 per youth per year), and the program is recruiting previously untapped volunteers in a way that could significantly improve the ability of mentoring to reach substantial numbers of youth nationwide. However, these impacts are not sustained in youth who end their program involvement after the one school year that is typically required of them. Training and supervision may also need to be strengthened, and programs may need to invest in bridging the summer break to ensure that SBM participants are getting the supports they need to create long-lasting, powerful relationships.

Methodology

This report presents findings from an evaluation that uses a rigorous experimental design. Youth were recruited into the SBM programs as they normally are—mostly through referrals by school staff—during the spring prior to data collection as well as the fall of the first year of the study (2004). Youth who were accepted into the program were assigned randomly to either a treatment or control group. Those assigned to the treatment group were matched in the usual manner with a volunteer mentor. Youth in the control group were placed on the agency's waiting list for the duration of the study period. All youngsters assigned to these groups were followed throughout the study and included in all impact analyses.[3] (More detailed information

about the timing of the study's components and our methodology is presented in Appendix A.)

Impacts are measured by comparing the progress made by youth in the treatment group with that made by youth in the control group.[4] Because assignment to these groups was random and not based on any characteristics of the child or his or her background, differences between the treatment and control group can be attributed to participation in the SBM program. (Please see Appendix B for a more detailed discussion of our approach to the impact analyses.)

However, when we address questions about benefits received by specific subgroups of Littles who had different mentoring experiences—for example, those who experienced longer or stronger relationships—we cannot definitively attribute differences in outcomes to differences in program participation.[5] Youth were not randomly assigned to these subgroups, and we cannot determine which youth in the control group would have experienced these types of relationships (and would therefore be an appropriate comparison group). Thus, we either compare these subgroups of Littles with the entire control group or to other Littles who experienced different types of mentoring relationships. This approach is less rigorous than that used with the full group of participants, but we include these analyses because the findings suggest important areas for strengthening programs.

Site Selection

The ten BBBS agencies selected for this study differed in size and geographical location (see Table 1). The agencies were selected based on six criteria. Each agency:

- Had strong leadership in place at the management level for at least three years;

- Had an SBM program operating for at least four years;

- Served at least 150 youth annually in its SBM program;

- Served both girls and boys;

- Used at least two different types of volunteer-rich populations, such as high school students and employees from nearby businesses; and

- Had a well-established relationship with the schools involved in SBM and a signed memorandum of understanding regarding study involvement from the school districts proposed for inclusion in the study.

The ten selected agencies initially worked with 72 schools to recruit youth for the study.[6] One school, however, yielded no participants, resulting in a total of 71 baseline study schools. (See Appendix C for a list of the schools.) More than half of participating schools (58 percent) were elementary schools; 38 percent were middle schools; and 4 percent were high schools. The schools varied greatly in size, ranging from 90 to 1,705 students, with an average enrollment of 695 students. Average class sizes were moderate, with about 24 students per class. Although 78 percent of these schools had small immigrant populations (less than 15 percent of their students), two indicated that immigrants made up more than half of their student population.[7] Participating schools served many youth who were economically and academically needy. Over half (59 percent) reported that 50 percent or more of their students received free or reduced-price lunch, and 73 percent of the schools received Title 1 funds.[8] Further, academic achievement at many of the participating schools was low. Sixty-five percent met standards on state reading tests; fewer (59 percent) met standards on state math exams.

Each participating school housed at least one program through the BBBS agency, while four schools housed two or more,[9] for a total of 76 programs involved in the study. On average, these programs had been operating for just over five years. Seven programs, however, were new, having just begun at the start of the study year,[10] while 11 were quite experienced, having existed for over a decade (up to 14 years). Programs served an average of about 22 youth, but this number varied greatly, from a low enrollment of two youth (four programs served five or fewer youth) to a high enrollment of 97 youth (four programs served 50 or more youth). The youth enrolled in SBM were referred by teachers, parents and other school staff. Unlike CBM programs, which often keep lists with names of children waiting to be served, the SBM programs in our study typically do not keep a waiting list of children; instead, they recruit students in line with the number of volunteers available.[11]

Table 1

Agencies Participating in the Study

Agency	City	Total Number of SBM Matches in 2002-2003	Number of Schools Participating in the Study at Baseline	Number of Youth Participating in the Study
BBBS of Central Ohio	Columbus, OH	920	6	114
BBBS of Colorado, Inc.	Denver, CO	1,441	6	69
BBBS of Eastern Maine	Ellsworth, ME	156	5	45
BBBS of Eastern Missouri, Inc.	St. Louis, MO	705	8	172
BBBS of Greater Cleveland	Cleveland, OH	779	5	100
BBBS of Island County	Oak Harbor, WA	249	6	69
BBBS of North Texas	Dallas, TX	845	4	168
BBBS of Northeastern Arizona	Show Low, AZ	863	5	154
BBBS of Northwest Georgia Mountains, Inc.	Dalton, GA	854	19	187
BBBS of The Bridge	Wilkes-Barre, PA	380	7	62

Data Collection

To participate in the study, youth were required to be fourth through ninth graders (9 to 16 years old) at the start of the study, to have parental consent, and to not have been referred to the program due to a crisis (for example, youth referred from Child Protective Services). A total of 1,140 youth attending 71 schools met these criteria. Permission was later withdrawn for one child in the control group, leaving a total of 1,139 study participants: 565 youth who were randomly assigned to the treatment group and 574 assigned to the control group.

We attempted to collect data for all members of both the treatment and control groups through surveys administered to teachers and youth and (for the treatment group) mentors at each of three time points: the beginning of the 2004-2005 school year (the baseline); in spring of the 2004-2005 school year (first follow-up); and in late Fall 2005, 15 months after the start of the baseline (second follow-up). Mentors also completed one additional survey in early Fall 2005, which provided information on summer communication with their Littles. Teacher and youth surveys measured a wide range of academic, behavioral and social outcomes; both youth and mentors reported on relationship quality; and mentors provided information on match interactions, summer meetings and program characteristics. Mentors whose matches ended prior to the first or second follow-up completed a match closure form that asked why the match had terminated.

In addition to the quantitative data collection, we conducted agency interviews at the beginning of the study, focusing on the agency's history and infrastructure. We also conducted visits to each of the 10 agencies and two participating schools at each agency in Spring 2005. During these visits, we interviewed agency staff as well as teachers, principals and school liaisons (i.e., school staff, typically a counselor or principal, responsible for coordinating the program with BBBS staff) to learn about school characteristics, agency relationships with the schools, program staffing and perceptions of program benefits and drawbacks. To supplement the data on school characteristics, we collected web data on test scores, class size and enrollment for each of the 71 participating schools. Further information about the program and participating schools was provided by BBBS program staff and

school principals in surveys administered in Spring 2005. In addition, a cost survey was administered in Winter 2006. (Appendix A includes more details about our data collection.)

Structure of the Report

The following two chapters lay the groundwork for the discussion of impacts: Chapter II describes the youth and mentors who participated in the programs we studied, while Chapter III discusses those programs' characteristics and the youth's and mentors' experiences in them. Chapters IV and V then describe the impacts, at two points in time, of youth's participation in BBBS SBM. Chapter IV focuses on the benefits at the end of Year One (during the spring of the 2004-2005 school year) and explores whether either the length of the match or quality of the relationship is linked with greater benefits. Chapter V examines impacts on youth during Year Two (in late fall of the 2005-2006 school year) and discusses factors that are linked with those impacts, including whether or not the youth continued to be matched with a mentor during the second school year, the quality of the mentoring relationship, and youth's communication with their mentor in the summer between the two school years. Chapter VI presents the costs of serving youth in the participating SBM programs. Chapter VII presents our conclusions and recommendations.

The Youth and Their Mentors

Chapter II

P

roponents of SBM argue that the program is a valuable school intervention, in part because it is able to easily reach youth with whom teachers need help—those exhibiting academic or behavioral difficulties or who lack attention at home—and give them focused one-on-one attention, support and friendship. They further claim that it is an important addition to the mentoring field because it complements other program models in the youth it serves and the volunteers who are involved. If SBM is able to attract volunteers who would not otherwise become mentors and youth who might not be reached with other approaches, then the intervention provides a way for mentoring programs to extend their services to those who might not otherwise be served, without detracting from efforts of other program models—particularly CBM, an intervention that has already been shown to benefit youth and may be the most effective way to reach and serve some groups of young people.

Although earlier research (Herrera, 2004; Herrera, 1999) has outlined characteristics of SBM participants, the profiles of youth and mentors involved in these programs may have changed in recent years, given the very rapid expansion of the approach. Thus, it is important to understand more about both the volunteers and students involved in the SBM programs that participated in our study. This chapter, then, will answer the following questions:

- Who are the youth involved in the 10 participating BBBS SBM programs?

- Who are the volunteers?

- To what extent do youth's characteristics match those of their mentors?

To outline how our sample is representative of BBBS SBM programs nationwide, we also discuss the extent to which the youth and mentors in this study are comparable to those in national reports. In addition, when possible, we draw broad comparisons with characteristics of CBM mentors and youth.[12]

Who Are the Youth?

An important potential advantage of SBM is that it enables programs to reach students who could benefit from focused attention in the school context and groups of youth who may not be reached as easily without a school link. SBM programs can, and often do, target schools that serve large numbers of students who are economically disadvantaged or have special academic needs. By partnering with these schools, agencies can have easier access to large groups of youth who could benefit from the program. Teacher referrals may also target a large proportion of youth with academic difficulties (Herrera et al., 2000; Herrera, 2004). And communicating with parents through trusted school staff may help the program involve these youth more easily.

In this section, we outline the characteristics of youth in participating programs to assess the extent to which the programs are successful in using these potential strengths to reach groups of young people who are particularly needy or might not be reached through other efforts.

Youth Demographics

Agencies recruited 1,139 youth for the study.[13] Of these youth, 574 were randomly assigned to the control group, which would not be matched with mentors until the completion of the study, and 565 were assigned to the treatment group and were available to be matched with mentors. Assigning youth to these groups randomly helps ensure that they are comparable on all characteristics. In fact, at the start of the study, the youth in these two groups were comparable across a broad range of demographic, behavioral and socio-emotional characteristics (see Appendix B).[14]

Gender, Race and Ethnicity

A little over half of the youth are female, and close to two thirds are ethnic and racial minorities (see Table 2). These percentages are fairly representative of BBBS national statistics for SBM, which show that BBBS SBM is reaching slightly more girls than boys and a large proportion of ethnic and

Table 2
Demographic Characteristics of Youth

	Number of Youth (N=1,139)	Percentage of Youth
Gender		
Male	522	46%
Female	617	54%
Grade in School[a]		
4th	406	36%
5th	279	25%
6th	275	24%
7th	106	9%
8th	6	1%
9th	67	6%
Ethnicity/Race[a]		
White	426	37%
Hispanic/Latino	259	23%
Black/African American	202	18%
Native American	67	6%
Asian/Pacific Islander	11	1%
Multiracial	142	13%
Other	32	3%

Note:
a   Percentages add up to more than 100 due to rounding.

racial minorities (BBBSA, 2005).[15] CBM programs reach proportionally slightly fewer ethnic and racial minorities (BBBSA, 2005).

Age and Grade

Sixty-one percent of participants attended elementary school (fourth or fifth grade); about a third were in middle school (sixth through eighth grade); and 6 percent were ninth graders involved in one agency that targeted high school freshman at risk of dropping out. Youth were an average of 11 years old, with just over half (52 percent) between 11 and 13 years old.

This age breakdown includes proportionally fewer elementary-age youth than are served in the typical BBBS SBM program. This is in part by design—to allow us to understand how BBBS SBM affects both younger and older students, we asked agencies to recruit youth for involvement in the study from a wider age range than is typically served in programs nationwide.[16] However, it also reflects the fact that SBM programs are beginning to serve more middle and high schools than they have in the past. In 2002, 90 percent of youth served in BBBS SBM programs were in elementary school (Hansen, 2002). In the 2005-2006 school year, a little over 80 percent of youth served in these programs were in elementary school (Hansen, 2007).

Youth Risk

To assess the extent to which the youth in this study displayed behaviors that made their involvement in the program particularly helpful for schools, or experienced circumstances that put them at risk for future problems and may have made them more difficult to reach through other types of programs, we examined five areas of risk: economic status and stressful life events; academic performance; school behavior and attitudes; substance use and misconduct outside of school; and relationships with teachers, parents and peers. At the time of our baseline surveys, the youth were having difficulties in some but not all of these areas.

Economic Status and Stressful Events

A large proportion of youth in the study are economically disadvantaged—more than two thirds (69 percent) received free or reduced-price lunch during the first year of the study. This is somewhat higher than the 2006 national average of about 59 percent (USDA, 2007).[17] In addition, 39 percent were living in single-parent homes; the national average is about 28 percent (US Census Bureau, 2007). Eighty percent of participating youth experienced at least one of these two economic risk factors.

Although the youth in these programs were more likely to live in a single-parent home than the typical child nationwide, they are much less likely to do so than youth in CBM, which targets young people from single-parent homes because they could be most in need of a missing role model. In 2004, about three quarters of youth in BBBS CBM programs were from single-parent homes compared to a little over half of youth in BBBS SBM programs nationwide (BBBSA, 2004). Many youth in dual-parent homes could benefit from a mentor, and SBM seems well positioned to reach them.

Youth also reported experiencing several indicators of stress in the six months prior to the baseline survey (see Table 3). For example, about a third had changed schools in the previous six months, 41 percent had been picked on or bullied, and about a quarter had parents who had separated. Although some of the percentages in Table 3 appear very high, suggesting that youth may have been considering a time frame larger than six months in answering this set of survey questions, those

Table 3

Stress Indicators in the Six Months Prior to the Baseline for the Full Sample

Stressful Event	Percentage of youth reporting that they had experienced the event in the six months prior to baseline
Moved	32%
Changed schools[a]	35%
Parent/guardian started working	55%
Parent/guardian stopped working	19%
Broken up with boyfriend/girlfriend	37%
Close friend moved away	56%
Been picked on at school or in neighborhood	41%
Know someone who was hurt badly or ill	53%
Know someone who died in last year	46%
Parents separated	26%
Someone living in home had a baby	24%
Someone moved out of home	36%

Note:
a   It is likely that most of these youth had changed schools as part of the normal transition from fifth to sixth grade (24 percent) or from eighth to ninth grade (6 percent).

percentages do provide a good indication of the types of issues that youth were facing in their lives.[18] In addition, youth reported experiencing an average of nearly five of these stressful events in the six months prior to their involvement in the study.

Academic Performance

Youth were experiencing difficulties in several areas of academic performance, suggesting that the program is reaching students who need this kind of help. Teachers reported that over half of the youth needed improvement or were performing below grade level in math, reading, writing or overall academic performance. (Table 4 describes youth's academic and social difficulties.)

Table 4

Percentage of Youth in the Full Sample with Difficulties in Academic and Social Areas at Baseline

Area assessed (as reported by teacher, unless stated)	Percentage of youth with difficulties
Academic Performance	
Grades in[a]	
Math	57%
Science	44%
Social studies	44%
Reading	52%
Oral and written language	57%
Overall academic performance	51%
Assignments[a]	
Quality of assignments turned in	50%
Number of assignments turned in	38%
Difficulties in overall academic achievement or a condition that interfered with the ability to do schoolwork at grade level	*56%*
School Behavior and Attitudes	
Misconduct (in school)[b]	12%
Been absent in last four weeks	41%
Been tardy in last four weeks	20%
Unexcused absences in the last four weeks	12%
Difficulty focusing on academic tasks (task orientation)[a]	50%
Lack of confidence in academic ability (youth-reported scholastic efficacy)[c]	27%
School misconduct or unexcused absences	*22%*
Youth-Reported Misconduct	
Substance use in last three months	13%
Stole something in last three months	12%
Stole something or reported substance use	*21%*
Relationships	
Difficulties with teacher relationship (youth report)[d]	9%
Difficulties with parent relationship (youth report)[d]	11%
Difficulties with peer relationships (social acceptance)[e]	30%
Difficulties in one or more relationships	*43%*

Notes:

a Percentage of youth whose teachers reported that their performance in this area was below average (i.e., they scored below "3" on a 5-point scale).

b Percentage of youth whose teachers reported that they had engaged in one or more serious infractions at school over the previous four weeks (i.e., they fought, were sent to the principal's office or were suspended).

c Percentage of youth who reported feeling below average in this area (i.e., they scored below "2.5" on a 4-point scale).

d Percentage of youth who reported having difficulties with this relationship (i.e., they scored below "2.5" on a 4-point scale).

e Percentage of youth whose teachers rated them below "2.5" on a 4-point scale of social acceptance.

Similarly, youth were demonstrating difficulties in both the amount and quality of the assignments they completed. Teachers reported that half were turning in assignments that were below average in quality—in, for example, their neatness, correctness or completeness. And 38 percent were below average in the number of in-class and homework assignments they turned in.

Teachers further reported that nine percent of these youth had limited English proficiency. And nearly one fifth (17 percent) had an emotional, mental or physical condition that interfered with their ability to do schoolwork at grade level.

School Behavior and Attitudes

Youth behaved fairly well at school on some measures, but in others showed behavioral problems. At baseline, teachers were asked how often in the previous four weeks youth had been sent to the principal's office or suspended, or had engaged in a physical fight with another student. Few youth (12 percent) displayed these behaviors. However, many youth did not attend school consistently: more than two fifths (41 percent) had been absent at least once in the four weeks prior to the survey; 25 percent had been absent at least twice; and one fifth had been tardy.

Youth were also having difficulty focusing on school tasks: teachers said that half needed improvement in this area. For example, teachers rated these youth as having difficulties with concentration, working without adult support, and following directions, as well as being poorly motivated to achieve. Additionally, about a quarter of youth (27 percent) reported low levels of confidence in their academic ability, noting that they had problems with finishing homework, forgot what they learned in school, or felt they were not as smart as other kids their age. Yet, only 17 percent of youth reported that they disliked school.

Substance Use and Misconduct Outside of School

Only 13 percent of youth reported engaging in substance use in the three months prior to baseline: 4 percent said they had used tobacco; 5 percent had drunk alcohol; 3 percent had used marijuana; and 2 percent had used other drugs.[19] Other forms of misconduct were also not very common. For example, only 12 percent had taken something on purpose that did not belong to them in the last three months.

Both of these forms of misconduct were more common in youth attending middle and high school than in elementary-age youth.

Personal Relationships

Youth reported few difficulties in their relationships with adults. For example, only 9 percent of youth reported problems in their relationships with teachers.[20] Teachers similarly reported problems in their relationships with only 15 percent of the youth. Only 11 percent of youth reported having a poor relationship with their parents.

Yet, teachers reported that almost a third (30 percent) of the youth were not socially accepted by their peers. Teachers reported that these youth found it hard to make friends and were not popular with their peers.

When examining four of these outcome areas (academic performance, school behavior, youth-reported misconduct, and personal relationships) concurrently, we found that over three quarters of youth (77 percent) were having difficulties in at least one of these areas, 43 percent in two or more areas, and 18 percent in three or more areas. Very few (4 percent) were having difficulties in all four of these areas. Only about a quarter (23 percent) of youth were not experiencing difficulties in any of these four areas.

Who Are the Volunteers?

Because SBM is located in schools, it has great potential to reach volunteers who may not participate in other types of mentoring programs. The school setting may attract individuals or groups who prefer a safe, predetermined meeting place and organized activities for match meetings. SBM programs also require a shorter and less intensive time commitment than CBM programs, which might be particularly appealing to individuals such as students and those with families or full-time jobs who have many other time commitments. These programs also provide a significant amount of supervision, which enables them to recruit younger volunteers, who need more guidance.

There is some evidence that SBM and CBM attract different types of volunteers. Past research has outlined some demographic differences between

Table 5
Demographic Characteristics of Mentors

	Number of Mentors (N=554)	Percentage of Mentors
Gender[a]		
Male	151	28%
Female	394	72%
Race/Ethnicity[a, b]		
White	420	77%
Black/African American	41	8%
Hispanic/Latino	34	6%
Asian/Pacific Islander	19	4%
Native American	7	1%
Multiracial	19	4%
Other	3	1%
Age Group[a]		
18 and under	273	50%
19-24	90	17%
25-44	136	25%
45-64	43	7%
65 and older	3	1%
Student Status[c]		
Currently a high school student	253	48%
Currently a college student	92	18%

Notes:
a   Two percent of mentors did not provide information on their gender, age, race or ethnicity.
    Percentages listed are of those who provided this information.
b   Percentages add up to more than 100 due to rounding
c   Five percent of mentors did not provide information on their student status. Percentages listed
    are of those who provided this information.

volunteers in these programs (Herrera, 2000). In addition, about half of the SBM mentors in another study reported that they would not have considered community-based mentoring at the time they initially became involved in their SBM program (Herrera, 2004).

Although this evaluation cannot outline the specific characteristics of typical BBBS SBM volunteers at a national level, the characteristics of the mentors involved in the programs we studied do highlight the diversity of SBM volunteers and suggest that the programs are involving many volunteers who would not have participated in CBM.

Volunteer Demographics

A total of 554 volunteers, or "Bigs," completed baseline surveys when they began their involvement during the BBBS program year.[21] Almost three quarters (72 percent) are female (see Table 5). At baseline, the vast majority (83 percent) of the volunteers were unmarried, though 5 percent were single but living with a partner.

Age and Student Status
Half of the Bigs were 18 years old or younger, and an additional 17 percent were 19 to 24 years old. The large percentage of young volunteers reflects the number of student volunteers participating— most mentors were enrolled in either high school (48 percent) or college (18 percent).[22] This is a

major departure from the CBM model. The average CBM volunteer is older than the average volunteer in this study, and less than 5 percent are 18 or younger (BBBSA, 2004).

Most of these student volunteers (69 percent) were matched with Littles in elementary school as opposed to middle or high school. This was partly due to the fact that some programs avoided matching students, particularly high school Bigs, with older Littles, reflecting concerns that matching young volunteers with students in middle school who are very close in age would yield less productive matches.

Race and Ethnicity

Approximately one fourth of the volunteers (23 percent) belong to a racial or ethnic minority group. Non-student adults were a particularly good source for these volunteers as they comprised nearly half of all African American (44 percent) and Hispanic (47 percent) volunteers in our study, although they made up only one third of the full sample of volunteers.

Volunteer Recruitment

Partnerships with businesses and schools provided strong sources for volunteers. Although programs varied in terms of their volunteer recruitment sources—about half, or 53 percent, used more than one source[23]—nearly three quarters (71 percent) recruited from high schools and almost one third (30 percent) recruited college students. Nearly half (45 percent) of the programs also recruited at least some volunteers through businesses. In fact, 84 percent of the Bigs learned about the program through either their business (20 percent) or school (64 percent), while only 17 percent learned about the program through a different source, such as word of mouth.[24]

Perhaps due to the prevalence of school and business recruitment, four fifths of the volunteers started the program knowing other BBBS volunteers. On average, Bigs who knew other volunteers at the start of the school year maintained matches with their Littles for a longer total length of time (9.5 vs. 8.3 months) and sustained a single match

for longer (8.9 vs. 8.1 months) than individuals who did not know other volunteers. However, these differences were almost entirely explained by the fact that programs using specific groups of students or business volunteers often started match meetings very early in the school year—these volunteers started their matches earlier than volunteers who were recruited through other sources, but did not necessarily end their matches later in the school year than others.

Experience with Youth

Many volunteers were experienced in interacting with youth. Although only 16 percent had their own children, a quarter of the Bigs, overall, had previous mentoring experience through a formal program, while an additional 35 percent had informal mentoring experience. Two fifths (41 percent) reported having "a lot" of contact with youth ages 9 to 14 in the year prior to BBBS involvement, while only 17 percent reported having had "very little" or "no contact" with this age group in the past year.

Not surprisingly, the high school volunteers had particularly extensive exposure to younger children. About half reported having had "a lot" of contact with youth ages 9 to 14 in the previous year, with an additional 43 percent saying that they had had "some" contact with this age group.[25] They were also quite experienced in working with children. Almost two thirds (64 percent) had prior experience mentoring children through either a formal program or informal mentoring.

Perhaps because of this high level of experience in interacting with youth, at baseline most Bigs (74 percent) felt "very" or "extremely" confident in their ability to mentor a child, for instance in being a role model or in providing emotional support to a Little.[26] Mentors with greater exposure to youth and involvement in youth activities reported more confidence in their ability to effectively mentor a Little. High school and college students also reported significantly higher levels of confidence than non-student adults.[27]

To What Extent Do Youth's Characteristics Match Those of Their Mentors?

Our description of participating youth and volunteers shows that these groups are fairly disparate in terms of their gender and ethnicity: the group of youth has proportionally more males and ethnic and racial minorities than the volunteers. This is consistent with past research on volunteerism, which shows that whites and females are more likely to volunteer than minorities and males (Kirsch et al., 1999) and that boys are more likely than girls to be on BBBS community-based program waiting lists (BBBSA, 2006a).

This discrepancy highlights the fact that not all youth can be matched with a mentor who shares their gender or race. Past research suggests that racial and gender matching of volunteer and youth pairs does not seem to affect match longevity, quality or outcomes (Rhodes et al., 2002; Parra et al., 2002; see also Sanchez and Colon, 2005; Bogat and Liang, 2005). However, programs and, in some cases, parents often prefer this kind of matching to provide the child with a role model of a specific gender or race.

In CBM, mentors and their Littles are typically required to be of the same gender. But the added supervision that is characteristic of SBM, and the fact that parents in SBM are often less likely to request a same-gender mentor, enable programs to make more cross-gender matches in SBM. This type of matching may make it possible for programs to serve some boys for whom CBM programs may not have been able to find a male mentor. Similarly, SBM programs that partner with high schools to provide mentors for the Littles typically select high schools in the surrounding neighborhood, which may help them reach volunteers who match their students in racial, ethnic and economic background.

About one fifth (19 percent) of the matches participating in this study did not share the same gender. All but two of these cross-gender matches consisted of a female volunteer matched with a male youth. Cross-race matches were more common, making up three fifths of the matches in the study. Most of these cross-race matches (74 percent) were between a white mentor and a minority youth, but 17 percent were between mentors and youth from different

minority groups. The remaining 9 percent of cross-race matches were between white youth and minority mentors.

Youth of different ages were equally likely to be matched with a volunteer who shared their gender. However, matches with student Bigs were more likely to be cross-gender than matches with non-student volunteers. Cross-race matches were more common among those matches involving middle or high school Littles. And supporting suggestions that involving high school volunteers from the surrounding community could increase ethnic and racial matching, high school volunteers were more likely to match the race of their Little than college and non-student volunteers. Reinforcing past research, youth and mentors in cross-gender and cross-race matches reported similar levels of relationship closeness and experienced relationships of similar duration to those in matches that shared the same gender or race.

Summary

In this chapter, we discussed characteristics of participating youth and mentors to explore whether BBBS SBM is reaching youth with whom teachers may need help and attracting volunteers who might not have gotten involved in other forms of mentoring. We also discussed the extent to which the Bigs matched their Littles demographically, and the effects of that matching on relationship length and quality.

The youth involved in the study are older than those served in typical BBBS SBM programs. This, in part, reflects our efforts to recruit large numbers of youth in sixth to ninth grades for participation in the study; yet, it also reflects a recent trend in SBM programs toward serving more older youth.

The characteristics of involved youth suggest that programs are successful at reaching youth who are at risk of adverse outcomes, those who may lack other resources and those who could benefit from a school-related intervention. Many youth reported experiencing stressors in their lives; 80 percent were from low-income and/or single-parent homes; and close to two thirds are ethnic or racial minorities. Many also were experiencing academic difficulties or exhibiting behavioral problems at school.

And over three quarters were having difficulties in at least one of four outcome areas we examined (academic performance, school behavior, youth-reported misconduct and personal relationships).

The programs were also quite successful in attracting volunteers who, because of their age, are much less likely to participate in CBM. Most of the volunteers involved in these programs were young: almost half were enrolled in high school and close to one fifth in college—groups that are not typically utilized in CBM programs because of the need for additional supervision of the high school Bigs and the fact that college students typically leave the community during the summer. These proportions are fairly representative of BBBS national statistics, which show that 45 percent of BBBS SBM volunteers are in high school and 20 percent are in college (Hansen and Corlett, 2006). However, they represent a significant departure from earlier descriptions, which estimated that only about a third of SBM volunteers were 21 or younger (Herrera et al., 2000). These younger volunteers bring to the program extensive experience interacting with youth, as well as high levels of confidence in their ability to mentor a young person. Yet, little is known about their potential to develop strong, long-lasting and effective relationships with youth—a question we plan to address in an upcoming report.

Mentors and youth in approximately four fifths of matches in this study shared the same gender, but only two fifths shared the same race. Supporting past research, youth and mentors in cross-gender or cross-race matches had relationships that were just as close and lasted just as long as those in matches that shared the same gender or race.

The BBBS School-Based Mentoring Programs

Just as the characteristics of youth and mentors have changed during the growth of SBM, characteristics of the programs and the experiences of matches within these programs may have similarly changed. Past work (e.g., Herrera, 1999) portrays SBM as having fairly consistent characteristics across programs, while more recent research (Hansen, 2005) suggests that programs have diversified extensively, even among Big Brothers Big Sisters agencies.

The relatively young state of the SBM field also means that we know very little about the practices that contribute to strong programs. CBM has benefited from several studies outlining the qualities of strong matches and the best practices that support them. Although SBM shares some characteristics with CBM, the school context has many unique features that may affect relationship development and impacts. Without a clear set of guidelines, programs are likely being shaped in large part by the needs of schools and their specific communities rather than a consistent set of proven best practices. Understanding how these programs are run and how their practices are linked with other indicators of success will be an important initial step toward helping the field outline best practices for a more uniform approach to SBM that can yield consistent, strong benefits for youth.

This chapter explores these BBBS SBM programs by addressing the following questions:

- What are the characteristics of SBM match meetings?
- What is the quality of the relationships that develop in these programs?
- How are the matches supported?

In addition, the chapter will examine how the characteristics of SBM match meetings, training and staff support are linked to the quality of the mentor-youth relationships and to a second key indicator of program success: the length of the matches.

What Are the Characteristics of SBM Match Meetings?

Because SBM matches develop in a school setting, they have limitations as to when, where and for how long they can meet. All matches begin their relationship at school, and most limit their meetings to this context. That is, they typically do not communicate outside of school or meet over the summer. Yet, the matches in the programs we studied had a wide range of experiences in terms of when they met, where in the school they met, whether other matches were present, and the activities they engaged in. Some relationships even extended beyond the parameters of the school—with mentors and youth meeting outside of the school or communicating over the summer. These experiences portray SBM as a much more varied program than described in previous research.

Frequency and Length of Match Meetings

Most matches in this study were expected to meet once a week. Nearly four fifths of programs asked matches to meet on a weekly basis, while another 19 percent asked for less frequent meetings (see Table 6).

We found differences in programs' requests for meeting frequency depending on the age of the Little. Over four fifths (83 percent) of programs serving elementary age students asked mentors to meet with their Little four or more times a month compared to only two fifths of programs serving older students. The volunteer's age was also a factor: the vast majority of high school Bigs (83 percent) were asked to meet with their Little at least four times a month whereas only about half of adults (49 percent) and a little more than half (56 percent) of college students were asked for such frequent meetings. (However, because high school Bigs were generally matched with elementary age youth, it is unclear whether decisions about meeting frequency were based on the age of the Little or that of the Big.)

Table 6
Characteristics of Match Meetings

	Percentage of Programs (reported by program staff)
Required Frequency of Meetings[a]	
Monthly	1%
Biweekly	8%
Three times a month	10%
Weekly	79%
More than four times a month	1%
Time of Meeting	
During school	49%
After school	47%
Both during and after school	4%
Place of Meeting[b]	
Off-campus	7%
Auditorium	12%
Library	34%
Cafeteria	41%
Designated classroom	33%
Hallway	20%
Wherever there is space in the school	37%

	Percentage of Mentors (reported by mentors)
Length of Meeting	
Less than 30 minutes	3%
30-44 minutes	18%
45-60 minutes	40%
Over one hour to less than one and a half hours	19%
One and a half hours or more	20%

Notes:
a   Percentages add up to less than 100 due to rounding.
b   Program staff could indicate more than one meeting place for a program.

Matches also varied somewhat in terms of how long their meetings lasted. Forty percent of Bigs reported meeting with their Little for 45 minutes to one hour; almost that many (39 percent) met for over an hour; and 21 percent of matches met for less than 45 minutes. Again, these differences depended in part on the age of the Big: only 27 percent of adults reported meeting with their Little for more than an hour, compared with 42 percent of high school Bigs and over half (53 percent) of college students. These differences also likely reflect the time of day these types of mentors volunteered—i.e., college (but not high school) students were more likely to meet with their Littles after school, whereas corporate volunteers were more likely to meet during the school day, when students needed to return to class.

Time of Match Meetings

About half (49 percent) of the programs in our sample operated during the school day, while 47 percent took place after school. The remaining programs (4 percent) held match meetings both during and after school.

The time of day for match meetings is not necessarily, within itself, a crucial aspect of the match's experience. However, there are differences in characteristics of during-school and after-school programs that may very well affect mentors' and youth's experiences and the development of their relationship. For example, 89 percent of after-school programs met in one large room, such as the cafeteria or gym, with other matches present; only four school-day programs (11 percent) reported this type of meeting structure. Matches meeting during the school day were more independent, often having flexibility with where they met.[28] They also had significantly less contact with other matches—except in lunch programs in which all matches met at one time.

After-school meetings generally lasted for a little over an hour compared with the 46 to 60 minutes most frequently reported by program staff for school-day meetings. Different ages of Littles were not more likely to be served in one program or the other.

Match Activities

Matches often chose how they spent their time together, although all of the programs participating in our study had some degree of structure (i.e., the activities from which matches could choose were, at least in part, outlined by the program). In a few cases, the activities in which matches engaged were predetermined by the school or BBBS. More often, programs offered suggestions for the meetings by, for example, providing a box of recreational activities from which mentors and their Littles could choose if they needed activity ideas. In one program, BBBS staff sent a monthly electronic newsletter with ideas to the mentors, while BBBS staff from another program found online resources for the volunteers.

In fact, teachers (3 percent), BBBS staff (19 percent) and mentors (3 percent) infrequently decided how matches should spend their time together. Instead, Bigs reported that, most commonly, meeting activities were either chosen by them in collaboration with their Littles (49 percent) or, less often, by Littles alone (20 percent). Involving youth in decision-making may be an important way that these programs contribute to the development of strong relationships (Herrera et al., 2000; Morrow and Styles, 1995; Hansen, 2005; Hansen, 2004).

Non-Academic and School-Related Activities

A major concern about SBM programs is that the school context may mean that matches spend extensive time on academic activities at the expense of engaging in activities and discussions that could promote stronger, longer-lasting relationships. Karcher's recent SBM research (Karcher, 2004b; Karcher, 2007a) suggests why this concern is so important. He reports that relationship-focused social activities and discussions are linked with stronger benefits and higher levels of mentor satisfaction, whereas goal-oriented, problem-focused activities (including those that are academically focused) are linked with weaker benefits and lower levels of mentor satisfaction.

However, although some of the programs participating in our study were academically focused, they were the exception. Program staff reported that fewer than two fifths (37 percent) of the programs spent at least 25 percent of match time on homework help and tutoring. A focus on academics (i.e., at least 50 percent of match time was spent on these activities) was rare, occurring in only 11 percent of programs. Academically focused programs tended to be held after school rather than during the school day and more often served Littles in elementary school as opposed to older Littles.[29]

Reports from mentors similarly point to the lack of a strong academic emphasis in the programs. Although most matches did engage in some academic activities, few spent "a lot" or "most" of their time in this way. Instead, the matches engaged in a wide variety of other activities and discussions that could promote relationship development (see Table 7). Match activities typically included tutoring/homework help, but also included engaging in creative activities (e.g., drawing, arts and crafts), playing games, and talking about various issues and topics.

Match activities varied widely among programs, with at least two offering field trips and one involving the matches in community service activities. However, a few common threads emerged: nearly all mentors spent at least some meeting time having casual conversations with their Littles and "listening and learning" about them—96 percent reported spending at least some time doing both. Many mentors also spent "a lot" or "most" of their time play-

Table 7
Common Match Activities

Activity	Mentors' Reports of Amount of Time Spent in Various Activities[a]		
	None	Very Little or Some	A Lot or Most
Academic Activities			
Tutoring/homework help	18%	56%	27%
Talking about academic issues	6%	63%	31%
Talking about Little's teachers	8%	60%	32%
Talking about attendance/ importance of school	14%	64%	22%
Non-Academic Activities			
Sports	30%	45%	25%
Creative activities	15%	50%	36%
Indoor games	10%	36%	54%
Talking about Little's behavior	26%	59%	15%
Talking about the future	10%	60%	30%
Talking about Little's friends	4%	53%	44%
Talking about Little's family	5%	51%	43%
Casual conversations	2%	27%	71%
Listening and learning	2%	28%	70%

Note:
a   Rows do not always add up to 100 percent due to rounding.

ing indoor games (54 percent) and talking about their Little's friends or family (44 and 43 percent, respectively). In contrast, only 27 percent reported spending most or a lot of their match time on tutoring or providing homework help.

High school Bigs spent more time than adults engaging in social activities, like talking about their Little's social lives or playing games or sports. In contrast, adult Bigs spent more time than high school Bigs engaging in activities revolving around the Little's academic lives, including talking about their Little's academic issues and the importance of staying in school, and spent slightly more time providing homework help or tutoring.[30]

This fairly strong focus on non-academic activities corresponds with Bigs' goals for youth. After they had completed training, and prior to the start of their mentoring experience, volunteers were asked to identify their most important goal in mentoring from a list of five options.[31] Most volunteers sought to "be a friend" (46 percent) or "help [their Little] to feel good about him/herself" (34 percent). In contrast, only 9 percent sought to improve youth's

academic performance. Research on the development of mentoring relationships stresses that mentors with central goals of changing or improving youth in some way—for example, improving their behavior or grades—are less successful in building and sustaining effective relationships than mentors with goals of relationship development (Morrow and Styles, 1995).

Interacting with Other Youth

For almost two thirds (64 percent) of matches, meetings involved interacting with other youth. As mentioned, these interactions often occurred in after-school programs, in which matches typically met together in one space, but they also sometimes occurred in school-day programs, several of which met during lunch. We know very little about how these interactions might affect the development of the mentoring relationship. Exposure to the Little's schoolmates could provide mentors with valuable information about their Little's social skills and potential difficulties in interacting with peers (Herrera, Vang and Gale, 2002). The presence of other volunteers could also provide mentors with support

and camaraderie that could help them feel connected and committed to the program. Yet, having other youth or matches present could also distract both youth and mentors from the development of their own relationships.

Mentor reports seem to support the former hypothesis. Nearly all of the Bigs in matches that interacted with other youth (often, but not exclusively, as part of another match) felt that these interactions either improved their relationship with their Little (49 percent) or had no effect on their relationship (50 percent). And mentors reported higher levels of relationship closeness when their match met in the presence of other youth. Yet, youth reports did not support these findings; their reports of relationship closeness were very high in both cases. Hansen (2005), in her implementation study involving eight of the agencies that participated in our impact evaluation, notes similarly positive implications of match interactions for mentors, but negative implications for youth. The Bigs involved in her study reported higher levels of satisfaction with their match when there was more interaction with other pairs, but the Littles in these matches reported weaker relationships than those with less outside interaction. Because so many programs use this type of structure, this is clearly an area that warrants further attention.

What Is the Quality of the Relationships That Develop in These Programs?

Prior research highlights the importance of high-quality (e.g., close, satisfying, engaging) mentoring relationships for improving youth outcomes (DuBois et al., 2002; Grossman and Johnson, 1999; Rhodes et al., 2005). One concern about SBM is that its relatively less frequent and shorter meetings could translate into less positive relationships than evidenced in CBM. Some research has supported this theory (e.g., Herrera et al., 2000). Yet, the relationships in SBM have appeared to be fairly strong and positive (Herrera, 2004).

In this study, we assessed relationship quality by asking both Bigs and Littles a range of questions about how they felt about each other—for example, their closeness, satisfaction and engagement in the relationship, and the extent to which the mentor

exhibited behaviors in line with a youth-centered approach, such as considering the Little's ideas when deciding on match activities and coming up with activities that the Little finds fun and interesting.

The Littles in this study reported having fairly high-quality relationships with their Bigs. At the end of the first school year, most of the Littles (83 percent) believed that the relationship focused on their interests and needs, and 85 percent felt emotionally engaged in the relationship. A similar percentage (83 percent) also reported feeling at least somewhat close to their Big, and over half (51 percent) felt "very close" to their Big.[32]

Mentors also reported forming high-quality relationships, but, similar to previous reports, their ratings were not quite as high as the youth ratings. Forty-one percent of mentors "agreed" that they felt close to their Little, and 21 percent "strongly agreed."

In the previous chapter, we noted that matching practices were not associated with relationship quality: youth and mentors in cross-gender and cross-race matches reported similar levels of relationship closeness as those in matches that shared the same gender and race. In addition, we did not see consistent associations between relationship quality and at least one of the contexts for match development (i.e., the extent to which other youth were present during match meetings). Our analyses examining match support did, however, reveal that some program practices seem to foster the development of particularly close relationships. The next section describes these practices.

How Are the Matches Supported?

BBBS match support is a central component of the program's efforts to help the mentors and youth build and maintain strong relationships. These efforts take several forms, including training for mentors before the matches begin to meet, ongoing training, and regular contact with mentors and Littles as their match progresses. Although most of the guidelines for BBBS support of SBM matches are similar to those for CBM matches, staff's presence at some or all of the match meetings is a unique feature of SBM.

Table 8
Mentor Training

Amount of Training	Percentage of Volunteers Reporting That They Received Specified Amount of Group Training	Percentage of Volunteers Reporting That They Received Specified Amount of Individual Pre-Match Training
0-29 minutes	22%	55%
30-59 minutes	28%	31%
60 or more minutes	50%	14%

Training

Training helps to orient volunteers to the goals of the program, informs them about program rules and expectations, and gives them essential information on how to be effective mentors of youth. As is true in CBM, SBM training typically includes both mandatory training before the match is created, as well as optional ongoing training as the match develops.

When asked whether they had received training from BBBS, close to three quarters (71 percent) of mentors replied that they had—but, importantly, almost one third (29 percent) replied that they had not.[33] Overall, 80 percent of adults said that they had received training, compared to 70 percent of high school students and 69 percent of college students. Mentors varied widely in their responses to this question depending on the agency they were involved with, ranging from a low of 13 percent receiving training to a high of 96 percent. The four agencies with rates under 50 percent reported that they based training on the mentor's individual needs.

Typically, programs try to provide pre-match training in a group setting, particularly for those mentors who participate as part of a group of high school or college students or corporate volunteers. But the programs also provide individual training for those volunteers who cannot come to the group training. In fact, the mentors reported receiving most of their training in group settings. Half received an hour or more of group training, compared with only 14 percent who received an hour or more of individual pre-match training (see Table 8).

According to mentors, the most common topics covered at trainings were program rules (discussed at 96 percent of trainings); match expectations, including what to expect as the relationship is being formed (93 percent); and how to build a strong relationship with youth (91 percent). Information about match activities and communication skills was also quite common, occurring in over three quarters of trainings. Less common was training on characteristics of more constructive types of mentoring relationships and positive youth development, which were offered in just over half of trainings.

Those high school volunteers who did receive training reported having just as much group and pre-match individual training, but significantly more post-match individual training than other volunteers. This corroborates reports from program staff who discussed developing training sessions around specific issues that came up when observing the matches interact—often these were targeted to high school students when staff's observations suggested that these volunteers had unique needs.

Whether the Big participated in training and the amount of group training received is not significantly associated with the length or quality of relationships that developed during their first year of program involvement. But those Bigs who reported receiving more training felt higher levels of efficacy, or confidence, before being matched and were more likely to extend their relationship into a second school year. Bigs who reported receiving more individual training (both pre-match and during their match) also reported having higher-quality relationships with their Littles at the first follow-up, in Spring 2005.[34]

Supervision

Frequent supervision is another important way that BBBS staff try to ensure that their matches are of high-quality and are sustained long enough to make a difference in youth's lives. BBBS CBM programs require program staff to check in with volunteers and youth (and/or their parents) once a month for the first 12 months of their relationship and then once per quarter after the first year. These interactions enable staff to ask how the relationship is going, provide help when needed and, in some cases, end the match if things are not going well. But there is some variability across programs in the extent to which this standard is implemented. Furano et al. (1993) report that this variation is associated with how often matches interact: matches meet the most regularly in programs with more frequent supervision.

SBM has the same supervision requirements for youth as CBM programs, but less for volunteers (i.e., every other month). However, SBM supervision typically includes more face-to-face contact because program staff can reach all of the matches through school visits. After-school programs further allow staff to be present for all match meetings and provide even more consistent support throughout the mentor and youth's relationship development. This potential for added supervision is what allows the programs to recruit groups of volunteers who want or need the additional supervision and guidance—most notably, high school students.

Frequency of Supervision

Despite this potential for added supervision, the Bigs in this study did not report receiving particularly high levels of support and supervision. We asked the mentors how often they talked with BBBS staff for support or advice, either alone, with other Bigs present or with their Little present. Close to two fifths (39 percent) reported one-on-one contact at least once a month (see Table 9). About a quarter (24 percent) reported at least monthly contact with other mentors present (for example, during or after their match meeting in their after-school program). And only 13 percent reported such frequent meetings with BBBS staff with their Little present.

Mentors did, however, receive additional support from school staff. Notably, 84 percent of programs had a school staff member serve as a liaison between the school and BBBS. In two thirds of cases, this role was filled by the school counselor or school psychologist. Other schools had principals or vice principals (11 percent), teachers (10 percent) or other school staff (13 percent) fill this role. The liaison typically assisted with youth recruitment and matching, but in some cases also helped with supervision.[35] Twenty-two percent of mentors spoke with the liaison or other school staff (not including the Little's teacher) at least monthly. In addition, 24 percent reported speaking with their Little's teacher at least once a month.

Combining all types of contact, 60 percent of mentors reported having at least monthly communication with school or BBBS staff. Yet, surprisingly, 24 percent reported that they had never spoken with BBBS staff for support or advice, and 12 percent had never met with either BBBS or school staff after the match had begun.

This fairly low rate of reported communication could be due in part to the way we asked Bigs about their contact with BBBS staff—we did not ask for all communication with staff, only how often they spoke with BBBS staff "for support or advice." Program staff may have attempted contact with all mentors; those with strong relationships may have simply indicated that things were going well. Thus, those who did not need help may have been the ones who did not get it. This hypothesis was only partially borne out in the data. Youth reporting the most positive relationships had mentors who reported communicating less with BBBS staff. However, Bigs reporting the closest relationships with their Littles reported more frequent contact with school staff. They did not, however, report higher (or lower) levels of communication with BBBS staff.

We did not ask youth about their contact with BBBS staff, but two thirds of program staff reported contacting Littles on at least a monthly basis. About a quarter (27 percent) communicated with them quarterly and 7 percent reported that they made no contact with Littles outside of match meetings.

There were variations in the amount of support that programs provided matches, depending in part on when the matches met. BBBS staff are generally present during after-school programs, which tend to convene all matches in one large room. In these programs, staff observe match interac-

Table 9
Mentor Communication with BBBS and School Staff[36]

	Never	About Every 2-3 Months	About Once a Month	2-3 Times a Month	Every Week
Talking with BBBS Staff for Support or Advice (all contexts combined)	24%	30%	27%	11%	8%
One-on-one with BBBS staff	26%	35%	24%	8%	7%
BBBS staff with other mentors present	53%	23%	13%	7%	4%
BBBS staff with Little present	71%	16%	8%	3%	2%
Talking with Any School Staff (all staff combined)	39%	26%	14%	10%	11%
Little's teacher	54%	22%	9%	6%	9%
Other school staff	60%	18%	12%	7%	3%
TOTAL Communication with BBBS or School Staff	12%	28%	26%	16%	18%

tions to provide guidance when the matches need it, ensure that matches are not breaking school rules and, for programs with structured activities, help guide the matches on how to engage in those activities. But generally, despite being present for these meetings, BBBS staff try to allow the matches to interact on their own and serve mainly as a resource for them if needed.

Some program staff, in both school-day and after-school programs, also incorporated additional methods to get to know the match and how it was progressing. For example, staff from three programs (two school-day and one after-school program) mentioned that their mentors used logs to record activities, concerns and questions after each meeting. BBBS staff then read through these logs regularly or, in one case, alternated with the school liaison to review the logs, and then followed up with individual volunteers when needed. Phone and email communication was also commonly used when mentors missed a meeting with their Little, or as a supplement to face-to-face discussions at the school when mentors needed extra attention.

Because programs operating during the school day often meet in varied places and at varied times depending on the mentor's and youth's schedule, program staff are generally not present for these meetings, and school-day Bigs reported significantly less direct contact with BBBS staff.[37] In these programs, supervision is more similar to that provided in CBM. Staff provide supervision by visiting the school or contacting mentors and Littles by phone or email, but they are not a presence at each match meeting in the same way that after-school staff are, nor do they have as many opportunities to observe match meetings. Other school personnel, like the counselor and vice principal, are more often present for school-day, as opposed to after-school, match meetings.

Compared to older volunteers, high school volunteers reported talking more frequently with BBBS staff for support or advice. This reflects the fact that both BBBS and school staff, including school liaisons, principals and teachers, were present more often during match meetings with high school mentors than with other mentors. Their presence may have been, in part, a conscious effort to provide extra support for high school students—in our interviews, BBBS staff noted that

high school volunteers often presented challenges that differed from those of adults. Program staff, however, reported communicating slightly less frequently with high school Bigs outside of their match meetings than they did with college or adult Bigs, possibly because they saw them regularly during those meetings. But they also reported communicating more frequently with the Littles in these matches compared to those matched with college or adult mentors.

Satisfaction with Support

We used two strategies to assess the extent to which mentors felt satisfied with the support they received from the school and program. First, we asked the mentors about the helpfulness of various school and BBBS staff members. Second, we asked them a range of questions about: 1) program quality—these questions asked mentors if they felt they had received sufficient training and whether this training helped them to be a better mentor, as well as about the amount and usefulness of guidance and supervision they had received; 2) staff support—these questions asked about the extent to which BBBS staff were concerned with the match's prog-

ress and the willingness of BBBS staff to provide suggestions for working with their Littles; and 3) resources and space—these questions asked about the extent to which the mentor felt that the school provided adequate access to resources, space and activities.

Despite reports of fairly infrequent communication with BBBS staff, almost all of the mentors felt that BBBS was either "extremely" (68 percent) or "somewhat" (26 percent) helpful. And 68 percent agreed that the program provided them with sufficient and useful training and support (i.e., agreed or strongly agreed to questions about "program quality"; an additional 27 percent felt "neutral" but did not disagree). These findings lend support to the suggestion that most volunteers felt that BBBS was accessible even though some of those volunteers may not have taken the initiative to approach staff or accept help from staff when it was offered. School liaisons were seen as significantly less helpful: 40 percent of the volunteers found the liaison "extremely" helpful, and 33 percent felt that the liaison was "somewhat" helpful. Compared to adult volunteers, high school volunteers found school liaisons to be more helpful—again, most likely because

liaisons were present more often during their meetings. In addition, about two thirds of mentors (71 percent) felt that they had adequate access to resources and space at the school.

All of the measures we used to assess satisfaction with school and BBBS staff support proved to be linked to key indicators of match success and the quality of the mentoring relationship (see Table 10). Mentors who reported higher levels of BBBS and school helpfulness, more adequate training and supervision (i.e., higher levels of BBBS "program quality" and "staff support"), and better access to space and resources at the school reported more positive relationships with their Littles at the first follow-up. Further, data from the second year of the study show that Bigs who perceived higher levels of helpfulness of BBBS staff, those who reported having more adequate access to resources and space for match meetings, and those who reported more adequate training and supervision were more likely to extend their relationships into a second school year.

Summary

In this chapter, we discussed characteristics of SBM match meetings, the relationships developing in these programs, and the program practices that support them. Our findings highlight four important conclusions.

First, BBBS SBM is not simply a tutoring program. Mentors reported engaging in a wide variety of activities with their Littles, and only 11 percent of programs asked matches to spend more than half of their time on academic activities. Mentors' reports of their goals support this more "social" focus: only 9 percent had a central goal of improving academically related outcomes.

Second, programs are quite diverse in almost every aspect of the matches' experience, including when matches met, where they met, the duration of their meetings, and the extent to which they interacted with the Littles' peers. This diversity likely reflects programs' efforts to adapt to the needs of different schools. However, it also reflects the fact that the field is still young and does not yet have clear guiding principles on how best to combine these practices in a way that yields the most benefits for youth.

Third, despite the potential for additional supervision in these programs, nearly a quarter of mentors reported never talking with BBBS staff for support or advice. Similarly, almost two fifths of mentors reported never talking with school staff about their Little. Yet, those mentors who had more frequent contact with school staff reported having the closest relationships with youth. Those who felt that the school provided them with adequate access to resources and space also had more positive relationships with their Littles and were more likely to continue these matches into a second school year.

Finally, close to a third of volunteers (including 30 percent of high school volunteers) reported receiving no training before or during their match. It is likely that these reports result in part from agencies trying to make training less burdensome to their volunteers by shortening it and making it less formal, and the fact that volunteers may not have labeled these interactions as "training." Supporting this suggestion, most mentors did feel that the program provided them with adequate training and support. However, the large number of young volunteers involved suggests that this may be an important area for improvement. In fact, those volunteers who reported receiving more individual training reported more positive relationships with their Little, and those receiving more group or individual training were more likely to extend their relationship into a second school year. Increasing access to formal training may, thus, be an additional way that programs can help to create longer and stronger SBM matches.

The following two chapters describe the impacts on youth from their participation in these programs.

The Impact of Having a BBBS SBM Mentor for One School Year

I

n this chapter, we describe how the lives of children were affected by the BBBS SBM program during the first school year of their involvement. SBM is often regarded as a one-school-year program in which matches meet on the school grounds only during the months when school is in session. However, matches can start late in the school year or last beyond the school year—communicating through the summer and/or meeting in person again during the next school year. We designed our evaluation to be able to estimate the effects of SBM both at the end of one school year and halfway into the next school year. This chapter presents impacts measured at our first follow-up, at the end of the first school year. In Chapter V, we turn to a discussion of benefits measured in the second school year.

We learned how SBM affected the lives of children by asking the Littles, their non-mentored peers and each group's teachers about many school- and non-school-related dimensions of the students' lives. In this chapter, we use these data, as well as agency reports of match length and youth reports of relationship quality, to address the following three questions:

- What are the effects of one school year of BBBS SBM involvement on the behavior, attitudes, relationships and academic performance of Littles?

- Do Littles with longer relationships benefit more than those with shorter relationships?

- Do Littles with stronger relationships benefit more?

We address the first question using the strength of random assignment. Youth were assigned randomly to the treatment and control groups, and in these analyses we compare the outcomes of treatment and control students either for the whole sample or for a particular subgroup (e.g., female treatments vs. female controls). Thus, any differences we detect between Littles and their non-mentored peers can be confidently attributed to involvement in the BBBS SBM program. However, when we

assess impacts for Littles in longer matches or those who have stronger relationships with their mentor, our analyses can suggest, but not definitively support, causal connections between mentoring and impacts. We do not know which youth in the control group are exactly comparable to Littles with longer or shorter matches or with stronger or less strong relationships, and thus, we have an imperfect comparison group.[38] These latter assessments require further, more stringent tests to support causality. The reader is cautioned to keep this distinction in mind when reviewing the findings presented in this and the following chapter.

What Are the Effects of One School Year of BBBS SBM Involvement?

Each year, SBM volunteers commit to meeting with their Littles for one school year. But an SBM "school year" is not typically nine consecutive months. The time it takes to recruit, screen, and train or orient youth and volunteers, coupled with school requirements for when the program can start, means that youth often do not begin meeting with their mentor until well into the school year. Additional youth and mentors are also recruited as the year progresses. As a result, school-year matches in SBM are usually much shorter than the nine months of an actual school year.

In fact, by the end of the first school year (at our first follow-up), those Littles who had been matched had received an average total of about five (5.3) months of mentoring[39] and had met with their mentor an average of a little more than three (3.1) times during each of those months.[40] (For about 10 percent of Littles, this total encompassed more than one match. As a result, as will be discussed later in this chapter, the average length of the Littles' most recent match was about 4.6 months.) By the end of the school year, 93 percent of the enrolled youth had been matched, with 73 percent of those (or 68 percent of all treatment youth) meeting with a mentor at the time of the first follow-up.

These relationships seemed to be providing Littles with the types of supports BBBS strives to provide youth. At the first follow-up survey, Littles were significantly more likely than their non-mentored peers (66 percent versus 49 percent) to report the presence of a non-parental adult in their life whom they look up to and talk to about personal problems, who encourages them to do their best, cares about what happens to them and influences the choices they make.[41]

School-Related Impacts

As we saw in Chapter III, although few SBM programs have a strong academic focus, about a quarter of the mentors reported spending "a lot" or "most" of their match time engaged in a number of activities that revolve around the child's school life. In fact, because SBM takes place in school, it is likely that mentors and youth do talk more about school-related issues, such as homework and problems with school work, teachers or schoolmates, than matches in CBM programs (Herrera et al., 2000). In addition, because the mentor provides the student with personal attention and, hopefully, a positive role model who values education, the Little's classroom behavior could improve. Thus, we considered a broad range of aspects of the students' school lives—their academic performance, attitudes toward school and their own academic ability, school behaviors (both social and academic) and their relationship with their teachers.

At the end of the first school year, we found strong evidence that participation in the BBBS SBM program improved youth's performance and behavior in school. Nine of the 23 school-related outcome measures we tested were affected by the program (see Table 11 on pages 34 and 35).[42, 43] These impacts covered a broad range of outcomes of import to schools, including attendance, behavior and performance.

More specifically, at the end of the first school year, Littles did better than their non-mentored peers in the following teacher-reported outcomes:

- Overall academic performance, as well as in the specific subjects of
  – Science, and
  – Written and oral language;
- Quality of class work (correctness, neatness and completeness);
- Number of assignments completed (in-class and homework assignments); and
- Serious school infractions (including principal's office visits, fighting and suspensions).

In addition, they also improved in the following youth-reported outcomes:

- Scholastic efficacy (feeling more competent academically); and
- Skipping school—which teachers confirmed by reporting that fewer Littles had an unexcused absence in the four weeks prior to our survey.

Table 11 shows that, using a scale from "below grade level=1" to "excellent=5," at the end of the first school year of involvement, the average Little was rated by his or her teacher as earning a 2.73 (between "2=needs improvement" and "3=satisfactory") for overall academic performance. Their peers, who were just like the Littles with the exception of not having a mentor, ended the year earning only a 2.62. The differences in teacher ratings are small, but as we will discuss in a later section, they are very similar in size to those found for BBBS CBM programs. Teachers also rated the Littles as performing somewhat better than their peers in all of the specific areas of academic performance we assessed; however, only the differences in science and in written and oral language are large enough for us to be sure they are not just due to chance (i.e., that they are statistically significant).

Table 11

Impact of BBBS SBM at the End of the First School Year: School-Related Outcomes

(all outcomes are scales from 1=Low to 5=High, unless another range is stated)

School-Related Outcomes (as reported by teacher, unless stated)	(Column 1) End-of-School-Year Average for the Littles	(Column 2) End-of-School-Year Average for Peers	(Column 3) Impact (difference between Column 1 and 2)	(Column 4) Statistical Significance (p-value)[a]
Overall Academic Performance	2.73	2.62	**0.11****	**0.04**
specifically in:				
Written and Oral Language	2.77	2.68	**0.09***	**0.07**
Reading	2.72	2.64	0.07[b]	0.19
Science	2.84	2.73	**0.11***	**0.07**
Social Studies	2.84	2.77	0.06[b]	0.29
Math	2.67	2.64	0.03	0.68
GPA (youth report, 1-4)	2.78	2.74	0.04	0.50
Quality of Class Work	3.00	2.89	**0.11****	**0.01**[d]
Number of Assignments Completed	3.12	2.98	**0.14*****	**0.01**[e]
School Preparedness	3.36	3.34	0.02	0.59
Classroom Effort (1-4)	2.81	2.75	0.06	0.12
Task Orientation	3.04	2.99	0.05	0.19
Absence without an Excuse (0, 1)[f]	0.12	0.18	**-0.06***	**0.06**
Start to Skip School (youth report; 0, 1)[f]	0.11	0.17	**-0.06****	**0.04**
Engaging in Serious School Misconduct (0, 1)[f]	0.14	0.21	**-0.07***	**0.05**
Is Difficult in Class	2.26	2.29	-0.03	0.37
Teacher-Student Relationship Quality	3.82	3.79	0.03	0.35
Teacher-Student Relationship Quality (youth report, 1-4)	3.30	3.30	0.00	0.94

Table 11, continued

School-Related Outcomes (as reported by teacher, unless stated)	(Column 1) End-of-School-Year Average for the Littles	(Column 2) End-of-School-Year Average for Peers	(Column 3) Impact (difference between Column 1 and 2)	(Column 4) Statistical Significance (p-value)[a]
Positive Classroom Affect (1-4)	3.19	3.19	0.00	0.94
Scholastic Efficacy (youth report, 1-4)	**2.81**	**2.74**	**0.07****	**0.04**
Academic Self-Esteem (youth report, 1-4)	3.21	3.18	0.03	0.45
Connectedness to School (youth report, 1-4)[c]	3.11	3.10	0.01	0.65
College Expectations (youth report, 1-4)	3.33	3.28	0.05	0.35

Notes: The estimated impacts in Column 3 are regression "adjusted," controlling for indicators of random assignment (i.e., to which group the child was assigned), the baseline value of the outcome measure, youth's age, minority status, gender, number of youth-reported stressful life events in the six months prior to baseline, whether the child qualifies for free or reduced-price lunch, and the child's extracurricular activity involvement. The Little's value in Column 1 is the unadjusted mean for the students randomly assigned to the treatment group. The control group value in Column 2 is the difference between the treatment group mean and the estimated impact. For those variables with a 0-1 response format, Column 1 is the proportion of treatment youth with this outcome; Column 2 is the proportion of treatment youth with this outcome divided by the estimated percent change impact (i.e., the "log odd treatment effect"); and Column 3 is the difference between Column 1 and 2.

a   These numbers (called levels of significance or p-values) are the probability that the treatment and control averages are the same. Thus, p=0.04 means that there is a 4 percent chance that the estimated impact is actually zero, while p=0.68 means that there is a 68 percent chance that the impact is zero. We call an impact "statistically significant" if the likelihood that the impact is really zero is less than ten percent (p<0.10). This 10 percent level is selected (as opposed to the 5 percent level used in many fields) to increase our power to detect a legitimately effective program. Most evaluation research uses this two-tailed 10 percent criterion (which is equivalent to a 0.05 one-tailed test).

b   Column 3 does not equal Column 1 minus Column 2 due to rounding of numbers in all three columns.

c   Connectedness to School is a combination of a three-item School Liking scale and a six-item Connectedness to School scale, which contains items about trying hard as well as about school enjoyment.

d   P-value is p=0.014, thus, p<0.05.

e   P-value is p=0.009, thus p<0.01.

f   P/PV's 1995 CBM impact study and many other previous evaluations present differences between the treatment and control groups for outcomes with a Yes/No (or 0, 1) response set in terms of percentage difference. For example, Littles were 33 percent less likely than their non-mentored peers to engage in serious school misconduct (i.e., the value in Column 1 (0.14) is 33 percent less than the value in Column 2 (0.21) for this outcome). This presentation is factually correct. However, it can lead to incorrect assumptions about the size of these effects. Thus, in this report, we do not present the findings using this format.

***   The true impact is not equal to zero at a 0.01 level of significance.
**   The true impact is not equal to zero at a 0.05 level of significance.
*   The true impact is not equal to zero at a 0.10 level of significance.

Echoing their better subject area assessments of the Littles, these teachers rated the overall quality of the mentored students' class work higher than their non-mentored peers. The Littles received a 3.00 (3=average) on the quality of their class work, whereas their peers earned a 2.89. Littles also earned a score of slightly above average (3.12) on the number of assignments completed, whereas their peers received an average score (2.98). As one might expect when students start performing better, the Littles also felt somewhat better able to do their school work than their peers, scoring an average of 2.81 (where 1=not at all effective and 4=very effective) on an academic efficacy measure, compared to the 2.74 averaged by their peers.

Both teachers and the youth themselves reported that the Littles behaved better in school than their peers. Whereas teachers reported that 12 percent of the Littles had an unexcused absence in the four weeks prior to our assessment, they reported that 18 percent of their peers had. Similarly, 11 percent of the Littles stated that they had started to skip school, compared to 17 percent of their peers. Moreover, whereas teachers reported that 14 percent of the Littles committed a serious school offense (entailing fighting, being sent to the principal's office or being suspended) some time during the four weeks prior to the follow-up survey, they reported that 21 percent of their peers had.

Impacts were not found on Littles' feelings of connectedness to school (e.g., "I enjoy being in school"); their academic self-esteem (e.g., "I am as good a student as I would like to be"; "I get grades that are good enough for me"); their college plans; their self-reported grades; or the quality of their relationship with their teachers. There were also no differences between Littles and their non-mentored peers in teachers' reports on the students' classroom effort, their classroom affect (having a positive emotional state in the classroom) or their task orientation (e.g., being a self-starter, working well without adult supervision).

Given that most of the significant impacts were seen in teacher-reported outcomes, we wondered if teachers knew which students were receiving mentoring; and if they knew, whether they biased their responses in favor of the Littles. To investigate this possibility, we used three different approaches.

First, in Fall 2005, when we had to re-contact a small number of teachers (31) about 97 children to clarify their classroom status from the previous school year, we also asked them if they knew whether the student had met with a mentor at that time. These teachers correctly identified the status of either having or not having a mentor for only 38 percent of the children. Second, one would expect that if the mentor met with the child during the school day (as opposed to after school), the teacher would be more likely to know about it. However, we found no difference in the teacher ratings of youth outcomes for those students who met with their mentors during the school day and those who met after school. Lastly, we hypothesized that elementary school teachers would be much more likely to know the status of the children than middle school teachers. However, again we found no significant difference in the results between the two groups that favored the elementary-age Littles.

Findings from the impact analyses also lend support to the idea that teachers were responding fairly accurately. For example, teachers and youth independently reported impacts in similar areas, including attendance and academic ability (i.e., teacher reports of performance and youth reports of academic efficacy). Also, we found no differences in teacher reports of the quality of their relationship with Littles or their peers. Thus, teachers were not simply giving Littles higher scores because they liked them more as a result of their program involvement. And, importantly, there were impacts across both "subjective" teacher-reported measures—such as the quality of youth's class work, for which teachers rated youth on a subjective set of responses (e.g., "above average," "below average")—and more objective measures, including the number of unexcused absences and serious school infractions committed in the past four weeks.

In other words, while we do not have definitive evidence against a teacher bias, we have no evidence that supports a hypothesis that the teachers biased their responses in favor of the mentored students.

Findings from Previous Evaluations of Mentoring

Although previous evaluations of SBM programs have generally reported promising school-related benefits from program participation, there is no consensus on specific program outcomes. Most of these studies have also been non-experimental

(i.e., they did not involve randomly assigned control and treatment groups). Curtis and Hansen-Schwoebel's (1999) evaluation of the BBBS SBM program found that, over the school year, the program appeared to improve youth's attitudes toward school; their grades in social studies, math and language arts; and their trust of teachers. Mentored youth also were less likely to repeat a grade and had fewer unexcused absences. Similar findings were reported in Karcher, Davis and Powell (2002) and in a subsequent BBBSA study (Hansen, 2002). In a later study, Diversi and Mecham (2005) reported improvements in GPA for mentored youth. And an evaluation of YouthFriends (Portwood et al., 2005) also found improvements in academic performance, but only for low-performing students. Karcher et al. (2006) found that four months of SBM had effects on self-esteem and social skills, but not on attendance or math or reading grades. Summarizing the literature, Portwood and Ayers (2005) conclude that most SBM studies point to school connectedness (e.g., King et al., 2002; Karcher et al., 2006; Portwood et al., 2005) as the main outcome that is affected by the program.

Our findings are similar to those reported in evaluations of CBM programs, many of which have found positive impacts on academic attitudes and behavior. In their synthesis of rigorous mentoring evaluations, Jekielek, Moore and Hair (2002) reported that mentored youth had fewer unexcused absences from school, better attitudes and behaviors at school, and better chances of attending college (among mentored high school students). In addition, Blakely, Menon and Jones (1995) found that youth participating in CBM were viewed by their teachers as placing a higher value on school and as being more engaged in the classroom, and their teachers were less likely to report problem behaviors or to refer mentored youth to school administrators for discipline infractions.

Some, but not all, of the evaluations of CBM have found impacts on academic achievement. P/PV's experimental study of BBBS CBM (Tierney, Grossman and Resch, 1995) found that, compared with non-mentored youth, mentored youth had slightly improved self-reported grades, skipped school less often, and felt more confident about their ability to complete their schoolwork. Blakely, Menon and Jones (1995) reported that mentored youth showed

modest gains in GPA and were less likely to fail math than the control group, but not less likely to have a failing grade in English, reading or social studies. A quasi-experimental evaluation (i.e., an evaluation that compared participants to a non-randomly assigned comparison group) of another program found improved grades and attendance for mentored youth, but they did not reach a level beyond the average student in the school district, nor did the evaluation find any effects on standardized tests or promotion rates (McPartland and Nettles, 1991). Evaluations of Across Ages, an intergenerational multi-component mentoring program, also reported that mentored youth did not have significantly different GPAs than the control group (Aseltine, Dupre and Lamlein, 2000; LoSciuto et al., 1996).

Non-School-Related Impacts[44]

We examined several other dimensions of the students' lives—their general misconduct that was not necessarily specific to the school context (including theft, destruction of property, fighting, and use of alcohol, tobacco, marijuana or other drugs); self-worth (how positively they feel about themselves in general); engagement in prosocial behaviors toward their peers (e.g., show kindness toward and concern for classmates); assertiveness (e.g., participate in class, are comfortable as a leader, are not overly withdrawn, anxious or nervous); and relationships with peers and parents (including parent relationship quality, emotional support from peers and social acceptance by peers).

We found no overall impacts in any of these outcomes. As Table 12 on the next page shows, both youth and their teachers rated youth's propensities to engage in positive and negative behaviors about the same in the two groups of students. For example, 16 percent of the Littles reported having used tobacco, alcohol or other drugs over the past three months, while 13 percent of their non-mentored peers said they had. Teachers also rated the two groups quite similarly on how often they showed helpful, friendly behavior toward their peers (measured by prosocial behavior): From a scale of 1=never to 4=very often, the Littles averaged a 3.11, and their peers averaged 3.08. Table 12 also shows that the students' relationships with their peers and parents, and their feelings about themselves (self-worth), were quite similar across both groups.

Table 12

Impact of BBBS SBM at the End of the First School Year: Non-School-Related Outcomes

(all outcomes are scales from 1=Low to 5=High, unless another range is stated)

Non-School-Related Outcomes (as reported by teacher, unless stated)	(Column 1) End-of-School-Year Average for the Littles	(Column 2) End-of-School-Year Average for Peers	(Column 3) Impact (difference between Column 1 and 2)	(Column 4) Statistical Significance (p-value)
Substance Use (youth report; 0,1)	0.16	0.13	0.03	0.37
Misconduct Outside of School (youth report; 0,1)	0.90	0.80	0.10	0.61
Prosocial Behavior (1-4)	3.11	3.08	0.03	0.35
Social Acceptance (1-4)	2.81	2.76	0.05	0.20
Sense of Emotional Support from Peers (youth report, 1-4)	3.00	2.93	0.07	0.15
Self-Worth (youth report, 1-4)	3.18	3.16	0.02	0.57
Assertiveness	3.36	3.37	-0.01	0.73
Relationship with Parent (youth report, 1-4)	3.18	3.15	0.03	0.36

Note: The estimated impacts in Column 3 are regression adjusted. See the note to Table 11 for a full discussion of how these values were computed.

Our lack of findings for these out-of-school outcomes differs from findings of evaluations of SBM that have preceded ours. Earlier, non-experimental evaluations have found evidence of positive benefits in some out-of-school areas. For example, studies have noted improvements in peer relationships (Curtis and Hansen-Schwoebel, 1999) and decreases in fighting (Herrera, 2004; King et al., 2002). Other studies report improved attitudes and connectedness toward parents (Karcher, Davis and Powell, 2002; Karcher, 2005; Curtis and Hansen-Schwoebel, 1999). With respect to attitudes toward or about oneself, Curtis and Hansen-Schwoebel (1999), Karcher (2006) and Portwood et al. (2005) all found evidence of positive effects.

In sum, after an average of approximately five months of SBM, several important aspects of Littles' school attitudes, behavior and performance improved relative to their peers. However, the Littles did not improve in any of the non-school-related outcome areas tested. The following section discusses the magnitude of the school-related findings.

The Relative Size of These Impacts

The differences in school-related outcomes between mentored and non-mentored youth, as reported in Table 11, are fairly small in absolute terms.[45] Many are statistically significant, but are they of a size to warrant notice? To answer this question, we compared the size of the impacts yielded in this study to those reported in P/PV's study of BBBS CBM programs, by calculating a unit called "effect size" or "standardized mean difference" (see Cohen, 1988). This unit is commonly used among researchers to compare findings across studies and indicate the size of the impact, or effect, of the program—the larger the standardized mean difference, the bigger the impact the program had on its participants.

Table 13

**Year One Effect Sizes (Standardized Mean Differences)
for the Outcomes Significantly Affected by BBBS SBM**

(all outcomes are scales from 1=Low to 5=High, unless another range is stated)

Outcomes	Effect Sizes
Overall Academic Performance	0.09**
Written and Oral Language	0.09*
Science	0.10*
Quality of Class Work	0.12**
Number of Assignments Completed	0.14***
Absence without an Excuse (0, 1)	–0.26*
Start to Skip School (youth report; 0, 1)	–0.25**
Engaging in Serious School Misconduct (0, 1)	–0.24*
Scholastic Efficacy (youth report, 1-4)	0.11**

Notes:
*** The true impact is not equal to zero at a 0.01 level of significance.
** The true impact is not equal to zero at a 0.05 level of significance.
* The true impact is not equal to zero at a 0.10 level of significance.

To compare our impacts with those from the CBM evaluation, we computed effect sizes for all of the outcomes assessed in our study—Table 13 shows the effect sizes for the significant impacts in the study. (Readers who want to see effect sizes for all of the outcomes we measured, and want to know more about how to interpret them, are directed to Appendix E.)

As noted earlier in this chapter, P/PV's 1995 study of BBBS's CBM program (Tierney, Grossman and Resch, 1995) found that after an average of just under 12 months of mentoring, compared to similar non-mentored peers, the average Little reported slightly better grades, feeling more competent in school, having a better relationship with his or her parents and feeling more emotionally supported by his or her peers. Mentored youth were also less likely to report that they hit others, started to use drugs and alcohol, or started to skip school. The current evaluation of BBBS SBM found that an average of slightly more than five months of SBM during the first school year did not affect non-school-related outcomes but did affect several measures of important school-related outcomes—academic performance, school misconduct, skipping school and the degree to which students felt scholastically competent.

The types of school-related outcomes affected by the SBM and CBM programs are, thus, very similar. For example, both programs reduced the likelihood that students skipped school (effect sizes = –0.25 in SBM and –0.19 in CBM), and both improved their academic performance (effect sizes = 0.09 in SBM and 0.10 in CBM).[46] Both studies also found positive effects on students' opinion of their own scholastic ability (effect sizes = 0.11 in SBM and 0.15 in CBM). However, in addition, in the present study, participating in SBM during that first school year resulted in improved school behavior, while no such improvement was found with CBM. (The only measure of school behavior in the CBM study was youth's reports of being sent to the principal's office, which did not improve over the course of the study.)

Averaging across all of our school-related outcomes (those that showed significant impacts and those that did not) reveals that the average effect size for school-related outcomes in this study is 0.08, while the average effect size for school-related outcomes in the CBM study is 0.09.[47] Thus, five months of SBM led to impacts of about the same size as those observed in our evaluation of BBBS CBM but in a narrower set of outcomes—specifically those related to school.[48]

Impacts for Youth with Different Characteristics

Children's needs and strengths differ; thus, mentoring could affect different groups of students in different ways. For example, academically struggling students may benefit more from a mentor than academically successful students. And elementary school students may be more open to listening to the advice of a mentor than middle or high school students. If SBM is particularly beneficial for specific groups, programs might consider targeting, or at least prioritizing, services toward those more affected groups. This kind of information could also help programs understand which groups are not benefiting as much as they could and, thus, contribute to developing strategies to better serve those particular groups.

To explore this issue, we examined whether impacts differed for several important subgroups of Littles —by gender, grade level, race and ethnicity, and academic proficiency. The subgroup analyses (presented and discussed in detail in Appendix F), however, found very few statistical differences in the impacts by grouping. In almost all cases, the impacts on the paired subgroups (i.e., girls and boys, elementary and middle/high school students, minority youth and non-minority youth, those students performing relatively well academically and those struggling academically) did not significantly differ from each other. Thus, the data did not produce strong evidence in favor of targeting SBM to particular groups of students.

Although there was no strong evidence in favor of targeting, there were some suggestive patterns of effects that perhaps warrant more research. To summarize briefly, it appears that girls with school-based mentors may benefit more than boys and that middle/high school Littles may benefit

more than elementary school Littles. Splitting the groups by race and ethnicity or by their academic performance levels at the start of the program makes less of a difference. However, minority Littles and Littles that came to the program doing relatively better in school may benefit slightly more than their complement group—whites and lower-achieving Littles, respectively.

Is Match Length Associated with Outcomes after One School Year of SBM?

Several studies suggest that those youth with the longest matches receive the most benefits from mentoring (Lee and Cramond, 1999; the Opinion Research Centre, 1995; Herrera, 2004; Curtis and Hansen-Schwoebel, 1999; Karcher et al., 2006). Others have also found positive effects of mentoring for longer matches and negative effects for matches ending prematurely (Slicker and Palmer, 1993; Grossman and Rhodes, 2002; Diversi and Mecham, 2005; Karcher, 2005).

BBBS and most other mentoring programs currently define match length as the time difference between the match's start and end dates. At the end of the first school year, at the time of their follow-up survey, the average length of the Little's most recent match was a little over four (4.6) months. However, Littles varied in the length of their matches: 25 percent of all Littles were in their most recent match for three or fewer months; 48 percent were in a match that had lasted from more than three up to six months; and the remaining 28 percent were in a match that lasted more than six up to nine months.[49] Were these differences in match length associated with differences in outcomes?

This question is more difficult to answer than it appears. Youth who are able to sustain longer matches may have personal characteristics (e.g., strong social skills) that lead to both longer matches and improved performance and behavior at school. Thus, a positive correlation between outcomes and length of match may not necessarily mean that longer matches lead to bigger improvements in youth; instead, these improvements may have resulted from the same youth characteristics that led to the longer match. To examine the extent to which the personal traits of the youth were

Table 14

Difference in Outcomes between Non-Mentored Youth and Littles with Matches Lasting Different Lengths of Time during the First School Year

(all outcomes are scales from 1=Low to 5=High, unless another range is stated)

School-Related Outcomes (as reported by teacher, unless stated)	Littles with Matches Lasting 0 to 3 Months (Littles compared to their non-mentored peers) (n=139)	Littles with Matches Lasting >3 to 6 Months (Littles compared to their non-mentored peers) (n=269)	Littles with Matches Lasting >6 to 9 Months (Littles compared to their non-mentored peers) (n=157)
Overall Academic Performance	0.04	0.09	**0.16****
specifically in:			
Written and Oral Language	0.07	0.06	**0.13***
Science[a]	0.05	0.11	**0.15****
Quality of Class Work	0.05	**0.11****	**0.15****
Number of Assignments Completed	0.11	**0.13***	**0.18****
Absence Without an Excuse (0, 1)	−0.08	**−0.07***	−0.03
Start to Skip School (youth report; 0, 1)[a]	**0.11****	**−0.08*****	**−0.14*****
Engaging in Serious School Misconduct (0, 1)	0.00	**−0.08****	−0.07
Scholastic Efficacy (youth report, 1-4)	0.02	0.05	**0.12****

Notes: The estimated regression impacts listed here are statistically adjusted to control for the baseline value of the same measures detailed in the note to Table 11. Treatment youth were divided into three match length groups: 0-3 months, >3-6 months and >6-9 months. The estimates above are the regression coefficients on the variables that indicate to which match-length group the children belong.

a   The coefficients for the three different length-of-match groups were statistically different from each other for only science and starting to skip school.

*** The true impact is not equal to zero at a 0.01 level of significance.
**   The true impact is not equal to zero at a 0.05 level of significance.
*   The true impact is not equal to zero at a 0.10 level of significance.

responsible for our findings, we attempted to conduct more rigorous follow-up analyses that would create a match length measure that was not plagued with this bias. However, such a variable could not be created (see Appendix G for more details on this statistical technique). The reader should thus consider these findings cautiously.

Table 14 presents associations between length of match and those outcomes that our earlier analysis showed were significantly affected by SBM.[50] Those Littles in the shortest matches were different from the average non-mentored youth in only one of our tested outcomes (youth-reported skipping

school)—and in that outcome, they were performing worse than their non-mentored peers. By contrast, Littles in the longest matches showed more improvement than the average non-mentored youth on all but two of the school-related outcomes that yielded significant impacts for the full sample.[51]

The pattern we find of Littles in mid-length matches completing assignments more frequently and attending school more regularly than their non-mentored peers, followed by Littles in longer matches showing improvements in performance and feeling better about doing their school work, is consistent with what we would expect if mentoring

Table 15

Difference in Outcomes between Non-Mentored Youth and Littles with Different Levels of Youth-Reported Relationship Closeness during the First School Year

(all outcomes are scales from 1=Low to 5=High, unless another range is stated)

School-Related Outcomes (as reported by teacher, unless stated)	(1) Youth with a Very High-Quality Relationship (Littles compared to their non-mentored peers) (n=257)	(2) Youth with a Lower-Quality Relationship (Littles compared to their non-mentored peers) (n=237)	(3) Difference in Outcomes of Having a Very High vs. Lower-Quality Relationship (difference between Column 1 and 2)
Overall Academic Performance	0.12*	0.10	0.02
specifically in:			
Written and Oral Language	0.11*	0.07	0.04
Science	0.16**	0.06	0.10
Quality of Class Work	0.18***	0.06	0.12*
Number of Assignments Completed	0.20***	0.11	0.09
Absence without an Excuse (0, 1)	−0.04	−0.09**	0.05
Start to Skip School (youth report; 0, 1)	−0.12***	−0.08***	−0.04*
Engaging in Serious School Misconduct (0, 1)	−0.04*	−0.08*	0.04
Scholastic Efficacy (youth report, 1-4)	0.07*	0.05	0.02

Notes:

*** The true impact is not equal to zero at a 0.01 level of significance.

**   The true impact is not equal to zero at a 0.05 level of significance.

*   The true impact is not equal to zero at a 0.10 level of significance.

were responsible for these associations. This pattern suggests that to yield the biggest impacts, programs should try to sustain individual matches as long as possible within a given school year.

Is Relationship Quality Associated with Outcomes?

As discussed in Chapter III, we assessed relationship quality by asking both Bigs and Littles a range of questions about how they felt about each other—for example, their closeness, satisfaction and engagement in the relationship. To test whether relationship quality was associated with outcomes, we created two fairly equal-sized groups of youth. Those 50 percent of youth with the highest-quality relationships (i.e., those who scored their relationships above the median, or middle value, of the

entire group on our measure of closeness) were placed in the "very high-quality" category, and those with the lowest quality relationships were placed in the "lower-quality" category.[52, 53]

In most cases, the outcomes for Littles who had very high-quality matches at the end of the first school year appeared to be stronger than those for youth who felt less close to their mentors (see Table 15). However, most of these differences were not large enough to be statistically significant. Youth who felt closest to their mentors did, however, experience stronger impacts in two areas: the quality of their class work and whether they had started skipping school.

Intuitively, matches with closer relationships should be able to make more progress. The pattern in the data is consistent with this hypothesis. However,

some youth are simply better than others at forming relationships with adults, and these are exactly the types of young people who are able to overcome barriers and setbacks (Werner and Smith, 1992). Thus, it is unclear to what extent these differential outcomes are a result of a higher-quality mentoring relationship or are simply a reflection of personal characteristics that enable youth to both develop positive relationships and improve their school performance and behavior. As with match length, we attempted to remove this confounding factor but were unable to do so (see Appendix G).

In addition, relationship quality (as reported by the Littles) is associated with match length: those relationships that lasted the longest are those in which Littles felt the closest to their mentor. Thus, it is difficult to determine to what extent associations with outcomes are driven by the length of the match, its quality, or an unmeasured youth characteristic.

Summary

This chapter reported several important findings. First, on average, given the typical types of delay in starting programs at the beginning of a school year, Littles received a little more than five months of SBM during their first school year of participation, with only 28 percent of all Littles being in a match for more than six months.

Second, these five months of mentoring had positive impacts on nine measured outcomes of academic performance and school behavior. Compared to their non-mentored peers, Littles produced better-quality class work and completed more assignments. Their teachers felt they were doing academically better overall, as well as in the specific subjects of science and written and oral language. The Littles' school behavior—such as misbehaving and skipping school (reported by both teacher and youth)—and their sense of scholastic competence were also better than their peers by the end of the school year. The sizes of the school-related effects are small although very close in size to those found in P/PV's impact study of BBBS CBM, in which youth were matched with their mentor for an average of 12 months. Programs also seem to be successful in providing Littles with the types of supports BBBS strives to provide participating youth: Littles were more likely than their peers to report

the presence of a significant adult friend in their life whom they look up to and can talk to about personal problems and who influences the choices they make. However, these five months of SBM did not appear to affect any of the non-school-related outcomes we tested.

Although we did not find strong evidence for targeting SBM services to particular groups of youth, our analyses revealed some suggestive patterns for girls and middle school students that others might consider exploring further. For example, our findings suggest a possible need for strengthening services for boys and elementary-age youth to ensure that they benefit as much from the program as girls and youth in middle and high school. It is important to note in this context, however, that match characteristics differed for different types of Littles. For example, elementary-age Littles were more likely than older Littles to be matched with student volunteers. It is possible that the age of the volunteer is more crucial here than the age of the Little (a hypothesis we hope to explore in another report). Such match characteristics were not considered in these analyses and may contribute to these different patterns.

Lastly, those Littles in longer and stronger matches may be benefiting the most from participation. Because, in our analyses, we were unable to account for youth characteristics that could be responsible for both stronger matches and larger impacts, our findings do not definitively prove that longer and stronger matches lead to larger impacts. However, they seem to support this proposition. While more research should be conducted to fully understand the effects of longer and stronger relationships, our findings hint at the importance of starting matches very early in the school year and extending them as far into the school year as possible, as well as providing mentors with training and support that can contribute to strengthening relationships.

The next chapter follows the Littles as they progress into the second school year of the BBBS SBM program.

The Impact of the BBBS SBM Program after 15 Months

In this chapter, we continue our discussion of impacts by examining the benefits Littles received from the program 15 months after the evaluation began, in late fall of the second school year of the study.[54] We designed our evaluation to assess how many and what types of matches continued into a second school year and how having a school-based mentor affects the transition back to school after the summer. We hypothesized that perhaps having a mentor could help students feel better academically and enable them to gain more ground after the summer, relative to what they would have experienced without a mentor. At this later time point, we also examine the effects of the program on different groups of Littles.

This chapter addresses the following questions:

- Fifteen months after the start of the study, what are the effects of BBBS SBM involvement on the behavior, attitudes, relationships and academic performance of Littles?

- Do Littles with certain types of mentoring experiences benefit more from SBM? Specifically:

  – Do Littles who continue to be mentored in the second school year benefit more than those with only one school year of involvement?

  – Do Littles with very high-quality mentoring relationships benefit more than Littles with lower-quality relationships?

  – Do Littles who maintain contact with their mentors over the summer benefit more than those without summer contact?

As was true in the previous chapter, the analyses we conducted to address the first question rely on the two groups of youth created through random assignment. This strategy allows us to confidently attribute any differences detected between Littles and their non-mentored peers to their involvement in the BBBS SBM program. Analyses for the other questions, however, are based on less rigorous methodology. These analyses do not allow us to determine the extent to which observed differences are due to mentoring as opposed to inherent differences among the specific subgroups of Littles we are comparing, or between these subgroups and their non-mentored peers. We were unable to eliminate this bias in our analyses (see Appendix G). Thus, these latter findings should be considered exploratory.

What Are the Effects of the BBBS SBM Program after 15 Months?

At the time of the second follow-up (in late fall of the second school year), only 52 percent of the Littles were receiving mentoring. In all, 41 percent of the Littles were meeting with the mentor they had met with in the previous school year, and another 11 percent were meeting with a new mentor. (Only 18 percent of Littles met with a mentor for all three school semesters in the study.) A few Littles (2.5 percent) met for some period of time with a mentor during the second school year but were no longer meeting by the second follow-up.[55]

In many cases, the first-year match ended because the Little transferred to a new school, often as a result of the normal transition from fifth to sixth grade. The youth participating in the study (both the Littles and their non-mentored peers) attended 71 schools at baseline but spanned close to 300 by the end of the study. Close to one third (32 percent) of Littles had changed schools by the second follow-up,[56] and fewer than half (46 percent) of these transferring Littles continued to receive mentoring from the BBBS SBM program in their new schools.[57]

Those Littles who continued to receive mentoring met with their Big for an average of 3.3 months during the second school year prior to our second follow-up. Among those who were not matched at the second follow-up, the average period without a mentor was 7.5 months.[58]

If most of the Littles had continued to receive mentoring during the second school year, we would have had a good gauge on the longer-term effects of BBBS SBM. Instead, because only half of the

Littles received mentoring in the second school year, when we examine how the lives of the original group of Littles changed over the 15 months, we are observing a combination of the first-year effects (minus any possible decay in those effects since the end of the school year) plus the impacts of any additional mentoring received by the Littles whose mentoring experience continued during the first part of the second school year. Thus, the difference between the outcomes of the full group of Littles and those of their peers is likely to underestimate the impact of participating in an SBM program for more than one school year. However, we present these differences because if they are significant, we can confidently attribute them to the program.

Fifteen-Month School-Related Impacts

School engagement for youth between fourth and ninth grades typically declines over time, and with it, the students' academic attitudes, behavior and performance (Anderman and Maehr, 1994; Eccles and Midgley, 1989). It was hoped that longer-term SBM could lessen this decline and continue to improve outcomes. However, when examining the original group of Littles, few of the advantages that the Littles experienced over their peers at the end of the first school year were still apparent at the second follow-up (see Table 16 on the next page). Teachers reported no differences in the youth's classroom performance or in behavior between the two groups.

The two differences we found were both youth reported. First, Littles continued to report being less likely to have started skipping school. As shown in Figure 1 (page 49), at the beginning of the program, 8 percent of the Littles and 9 percent of their peers had skipped school. By the end of the first school year, 11 percent of the Littles who had never skipped school before the program reported having done so, while 17 percent of their peers had. At the 15-month point, 20 percent of the Littles and 28 percent of their peers had started to skip school. Littles were also slightly more confident that they would go to and finish college. At both the start

of the program and at the first follow-up, both the Littles and their peers were equally confident, with an average of 3.3 where 3=mostly sure and 4=very sure. By the second follow-up, the Littles' average increased slightly to 3.4.[59]

For all other school-related outcomes, Littles did not differ from their peers. Figure 2 (page 49) shows the typical pattern found with most of the school-related outcomes. Three or four months into the second school year, the Littles' academic performance (relative to the grade-level expectation of their new teachers) was basically back to where it had been when they applied to the program. At the start of the program in the fall of the previous year, teachers had rated the Littles' overall academic performance as 2.56, slightly below grade level (where 2=needs improvement and 3=at grade level). The non-mentored youth were rated at 2.48, also slightly below grade level. By the end of that first school year, the mentored youth had improved relative to their peers. However, after the summer break, the relative gains were no longer apparent. Three or four months into the new school year, both the original group of Littles and non-mentored youth were similarly slightly below grade level, 2.62 for the Littles and 2.61 for their peers.

Several factors could explain this performance convergence. First, summer is typically a time when students regress academically, and most students experience a period of approximately six to eight weeks at the beginning of each school year during which teachers focus on getting them back to the level at which they were performing at the end of the prior school year. This "summer learning loss" may have completely eroded the small advantage the Littles had relative to their peers, and the mentoring experience over the first few months of the second school year may not have been enough to reestablish it. Second, at this fairly early point in the school year, the teachers may not yet have covered the types of material that would allow the mentored students to distinguish themselves from the other students—all students could appear to be performing at a fairly similar level when teachers may have

Table 16

Impact of BBBS School-Based Mentoring in Late Fall of the Second School Year: School-Related Outcomes

(all outcomes are scales from 1=Low to 5=High, unless another range is stated)

School-Related Outcomes (as reported by teacher, unless stated)	(Column 1) 15-Month Average for the Littles	(Column 2) 15-Month Average for Peers	(Column 3) Impact (difference between Column 1 and 2)	(Column 4) Statistical Significance (p-value)
Overall Academic Performance	2.62	2.61	0.01	0.92
specifically in:				
Written and Oral Language	2.67	2.71	−0.04	0.54
Reading	2.59	2.59	0.00	0.97
Science	2.73	2.66	0.06[a]	0.49
Social Studies	2.71	2.79	−0.08	0.30
Math	2.53	2.51	0.02	0.79
GPA (youth report, 1-4)	2.72	2.66	0.06	0.29
Quality of Class Work	2.91	2.93	−0.02	0.69
Number of Assignments Completed	2.98	3.01	−0.02[a]	0.73
School Preparedness	3.37	3.31	0.06	0.29
Classroom Effort (1-4)	2.85	2.85	0.00	0.91
Task Orientation	3.10	3.08	0.02	0.75
Absence without an Excuse (0, 1)	0.14	0.17	−0.03	0.35
Start to Skip School (youth report; 0, 1)	0.20	0.28	**−0.08***	**0.05**
Engaging in Serious School Misconduct (0, 1)	0.13	0.13	0.01[a]	0.86
Is Difficult in Class	2.17	2.14	0.03	0.42
Teacher-Student Relationship Quality	3.85	3.86	−0.01	0.87
Teacher-Student Relationship Quality (youth report, 1-4)	3.35	3.30	0.05	0.12
Positive Classroom Affect (1-4)	3.31	3.35	−0.04	0.33
Scholastic Efficacy (youth report, 1-4)	2.82	2.79	0.03	0.36
Academic Self-Esteem (youth report, 1-4)	3.21	3.17	0.04	0.32
Connectedness to School (youth report, 1-4)	3.14	3.10	0.04	0.27
College Expectations (youth report, 1-4)	3.39	3.31	**0.08***	**0.09**

Notes: The estimated impacts in Column 3 are regression-adjusted. See the note to Table 11 for a full discussion of how these values were computed.

a   This difference between Column 1 and Column 2 is accurate and due to rounding.

*   The true impact is not equal to zero at a 0.10 level of significance.

Figure 1
SBM Impact on Starting to Skip School over 15 Months

Figure 2
SBM Impact on Overall Academic Performance over 15 Months
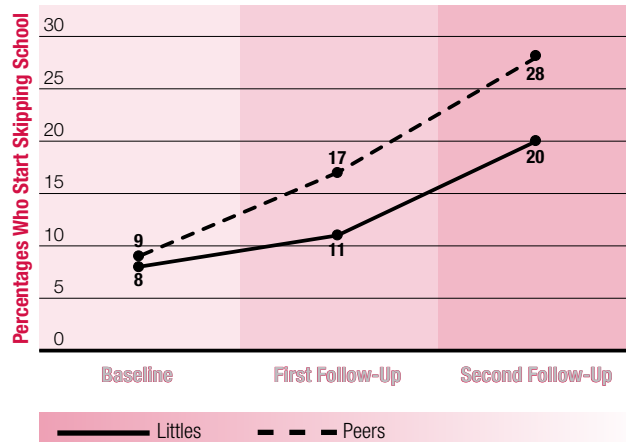
only recently started moving beyond assignments focused on getting students past their summer learning loss. Third, any benefit of the mentoring that half the Littles were getting during the second school year could have been offset by negative impacts of the now unmatched group of Littles (a theory we explore later in this chapter).

Fifteen-Month Non-School-Related Impacts

In keeping with the results we found at the end of the first school year, no overall impacts on out-of-school outcomes were significant 15 months into the study (see Table 17 on the next page). Littles reported levels of parental and peer support, self-esteem, substance use and other types of misbehavior that were similar to their non-mentored peers.

Although we found very few impacts for the full group of Littles and their peers in Year Two of the study, the Littles continued to feel that they were receiving the types of supports BBBS strives to provide youth: Littles were significantly more likely than their non-mentored peers (60 percent versus 42 percent) to report the presence of a non-parental adult in their life whom they look up to and talk to about personal problems, who encourages them to do their best, cares about what happens to them and influences the choices they make.[60]

Impacts for Youth with Different Characteristics

To explore whether specific groups of youth received bigger benefits from SBM participation in the second school year of the study, we first examined how different subgroups of Littles (by gender, ethnicity, age and academic standing) performed relative to their similar non-mentored peers on the two outcomes for which we found impacts in Year Two: college expectations and starting to skip school. Similar to our findings in Year One, in some cases these impacts were numerically larger and/or more apparent for some subgroups than others (e.g., female Littles were significantly less likely than their female non-mentored peers to start skipping school, whereas this was not true for male Littles compared to their male peers). However, when we directly tested whether these differences between subgroups were large enough to achieve statistical significance, we found no significant differences between any of the subgroup pairs (e.g., we found no significant differences in the size of the impact on skipping school for girls compared to the size of the impact for boys).

In addition, we investigated whether specific groups of Littles benefited in those outcome areas for which we did not see significant impacts when comparing the full sample of Littles with their non-mentored peers. If a specific subgroup of Littles—for example,

Table 17

Impact of BBBS School-Based Mentoring in Late Fall of the Second School Year: Non-School-Related Outcomes

(all outcomes are scales from 1=Low to 5=High, unless another range is stated)

Non-School-Related Outcomes (as reported by teacher, unless stated)	(Column 1) 15-Month Average for the Littles	(Column 2) 15-Month Average for Peers	(Column 3) Impact (difference between Column 1 and 2)	(Column 4) Statistical Significance (p-value)
Substance Use (youth report; 0, 1)	0.15	0.18	–0.03	0.34
Misconduct Outside of School (youth report; 0, 1)	0.88	0.95	–0.07	0.72
Prosocial Behavior (1-4)	3.12	3.11	0.01	0.79
Social Acceptance (1-4)	2.85	2.88	–0.03	0.53
Sense of Emotional Support from Peers (youth report, 1-4)	3.14	3.09	0.05	0.30
Self-Worth (youth report, 1-4)	3.24	3.21	0.03	0.32
Assertiveness	3.40	3.42	–0.01[a]	0.77
Relationship with Parent (youth report, 1-4)	3.18	3.17	0.01	0.76

Notes: The estimated impacts in Column 3 are regression-adjusted. See the note to Table 11 for a full discussion of how these values were computed.

a   This difference between Column 1 and Column 2 is accurate and due to rounding.

females—benefited from the program on a given outcome, but male Littles actually declined over time on that outcome, combining both sets of youth in our analyses would mask those benefits received by the first subgroup. Our analyses, however, revealed very few subgroup differences in the outcomes for which we did not find overall impacts for the full group of Littles.

Together, these findings provide very little evidence suggesting that some groups of Littles received stronger benefits than others from their participation in the second year of the study. We discuss these analyses in more detail in Appendix F.

Do Littles with Certain Types of Mentoring Experiences Benefit More from SBM?

It seems obvious that impacts may be affected by the type of mentoring experiences Littles have. These experiences varied greatly over the course of this 15-month study. Some Littles received continued mentoring into the second school year, while others stopped their involvement in the program after one school year; some had a very warm, close relationship with their mentor, while others had a less positive relationship; and some kept in touch with their mentors over the summer break, while others had no summer contact with them. Perhaps for some of these groups, the benefits of SBM carried over into the second school year, but because the impact analyses presented earlier in this chapter combined all groups of Littles, those benefits were obscured.

In Chapter IV, we investigated associations between impacts and mentoring experiences by examining impact variations only for outcomes that were statistically significant for the sample as a whole. If we took the same approach using only the significant outcomes for the full group of youth in the second school year of the study, we would have only two outcomes to examine and might miss patterns that could warrant further research or inform practice. Thus, we examine variations among all 31 outcomes, exploring associations with three characteristics of the match's experience: match length, relationship quality and summer communication. However, the reader is cautioned that making such a large number of statistical comparisons increases the number of significant findings that occur by chance alone. If for example, SBM had no impact on the Littles, on average, one in ten comparisons would appear significant simply by chance (see Appendix B for a discussion of this issue).

Do Littles Who Continue to Be Mentored in the Second School Year Benefit More than Those with Only One School Year of Involvement?[61]

BBBS and most other mentoring programs calculate match length by subtracting the match's start date from its end date. This strategy makes sense in CBM programs, which provide continuous mentoring to youth throughout the calendar year. It is also a useful strategy for SBM matches that last only one school year. In fact, in the previous chapter, we noted that this measure of match length was positively associated with program outcomes after the first school year of SBM: Youth who had been mentored for the longest period of time during their first school year of program involvement appeared to benefit more from SBM than Littles with shorter mentoring experiences.

However, calculating the length of an SBM relationship as it spans multiple school years is not as straightforward. For almost all SBM programs, simply subtracting matches' start dates from their end dates means including three months of summer, during which most matches communicate very infrequently if at all, as well as several weeks of start-up time at the beginning of the school year. Littles' mentoring experience during this "break" clearly differs from their experience during the school year. Thus, simply adding time during the summer and at the beginning of a new school year to calculations of match

length provides an inaccurate portrayal of how long a given match has truly been meeting.[62] Instead, examining each school year of involvement as a distinct component of youth's experience is likely the best approach to estimating the effects of dosage, or length of involvement, in SBM. We use that approach in this section.

As noted, only about half of participating Littles received any mentoring following the summer break between the first and second school years of the study. Perhaps this group of Littles continued to be positively affected by program involvement, but their benefits were masked by combining them with Littles whose mentoring ended after the first school year. These two different mentoring experiences may have yielded very different outcomes after 15 months. To clarify the effects of the program for these two groups, we address the following two questions:

1. **Do youth who receive only one school year of BBBS SBM retain their initial benefits?**

    Our analyses suggest that without continued mentoring, the positive school-related effects seen in the first school year of SBM erode by the second follow-up. In fact, although most of the differences between Littles who received only one school year of mentoring and their non-mentored peers were not large enough to be statistically significant, the one-school-year Littles appeared to demonstrate a small but consistent overall pattern of decline relative to their non-mentored peers in the school-related areas we assessed (see Appendix H for details of the analyses). At the second follow-up, these relative declines yielded statistically significant differences between one-school-year Littles and their non-mentored peers for two outcomes: teachers reported that one-school-year Littles exhibited significantly more negative classroom affect and more classroom misbehavior than their non-mentored peers. Of course, as discussed in Chapter IV, we cannot be sure how much of this is due to the types of children who only receive one year of mentoring and how much is due to no longer having a mentor.

    The fact that Littles were not able to retain their initial outcome advantage after several months without mentoring is not surprising and echoes previous findings from those few evaluations of

youth programs that include a follow-up (e.g., Walker and Vilella-Velez, 1992). For example, an evaluation of 400 sixth graders in Across Ages, an intergenerational mentoring program designed to reduce substance use in high-risk youth, found that involved youth benefited from the program in several areas. However, almost all of these effects did not persist at a six-month follow-up (Aseltine, Dupre and Lamlein, 2000). Follow-up evaluations to examine the long-term effects of mentoring (and other youth programs more generally) are rare, however, and thus it is unclear whether the effects of most evaluated programs would persist over time.

2. **Do youth who receive mentoring past the first school year show evidence of continued benefits?**

In contrast to one-school-year Littles, the Littles who continued with the program in Year Two of the study ("15-month Littles") demonstrated an overall pattern of small but positive academic advantage relative to their non-mentored peers. However, at the second follow-up, the positive differences between the 15-month Littles and their non-mentored peers were smaller than they had been at the end of the first school year, and only one was large enough to achieve statistical significance: relative to their non-mentored peers, 15-month Littles were significantly less likely to start skipping school. In addition, relative to one-school-year Littles (but not relative to their non-mentored peers), these Littles showed significantly better classroom behavior and reported having a better relationship with their teachers.

The emergence of this positive pattern of outcomes for the 15-month Littles and the negative pattern for the one-school-year Littles was not evident at the first follow-up: Littles whose mentoring experience ended after one school year and those whose mentoring experience would continue into a second school year both showed similar outcomes at the end of the first school year.[63] Thus, the differences we found in these two groups at the second follow-up appear to at least partially depend on the added mentoring received by the 15-month Littles (see Appendix H for a more detailed discussion of how the outcomes of these two groups changed over time).

These results suggest that the academic benefits of SBM decay after the first school year without additional mentoring.[64] The evidence that Littles who continue to receive mentoring past the first school year are able to sustain their school-related benefits is more limited. Although the overall pattern of their outcomes relative to their non-mentored peers is positive, we were unable to find strong statistical evidence for their continued benefits and to determine how much of that advantage was due to the mentoring and how much was due to youth characteristics that we were unable to account for.

The timing of our Year Two follow-up, in the late fall of the second school year, may be one factor contributing to our lack of strong findings for 15-month Littles. We chose this timing, in part, to allow us to assess whether having a mentor could help offset the summer learning loss that is experienced by most students after the summer break. We also believed that the first semester was a good point at which to gauge impacts because, in most schools, grades at that time point are a good indication of the student's success over the school year. However, this left very little time (only 3.3 months on average) for Littles to receive mentoring in the second year of the study. Had our evaluation tested outcomes at the end of Year Two, matches would have had longer to reconnect and redevelop their friendship prior to our assessment. At the time of our follow-up, most ongoing relationships had experienced a very recent four-month break during the summer and beginning of the school year that may have impeded whatever progress the match had made in the first year of their meetings.

Do Littles with Stronger Relationships Benefit More?

Analyses in Chapter IV support links made in prior research between mentoring relationship quality and outcomes (DuBois et al., 2002; Grossman and Johnson, 1999) by showing that Littles in very high-quality relationships at the end of the first school year received more benefits from program participation than Littles in lower-quality relationships. In this section, we test the extent to which these associations continue to exist in the second school year of the study.

As in Chapter IV, we created two fairly equal-sized groups of youth based on the Littles' reports of relationship quality. Those youth who reported the highest-quality relationships (i.e., those who scored above the median, or middle value, of the entire group) were placed in the "very high-quality" category, and those with the lowest-quality relationships were placed in the "lower-quality" category.[65] For Littles who received mentoring in the second school year, we based this split on their relationship quality at the 15-month follow-up. For Littles who only received mentoring in the first school year, the split was based on the quality of their last relationship.

As we noted earlier, however, only about half of the Littles in our study continued their involvement in SBM during the second school year of the study, while the other half did not receive any mentoring after the end of the first school year. Relationship quality may play a very different role in determining impacts for these two groups of Littles. Thus, we examine associations between relationship quality and outcomes separately for these two groups, addressing the following two questions:

1. **For 15-month Littles: Is the quality of their relationship in the second school year associated with outcomes in Year Two?**

   Fifteen-month Littles who reported having very high-quality relationships in the second school year of the study experienced several positive outcomes in both school- and non-school-related areas. Relative to their non-mentored peers, 15-month Littles who had very high-quality matches at the second follow-up:

   • Were more task-oriented and better prepared for class.

   • Had more positive relationships with their peers (i.e., they exhibited more positive behaviors toward their peers, acted more assertively) and reported receiving more support from their peers.

   • Had better relationships with their teachers, more positive feelings about school, and stronger expectations of attending and graduating from college. They also reported being less likely to have started skipping school.

In contrast to the 15-month Littles who were in very high-quality relationships, those 15-month Littles with lower-quality relationships in the second school year of the study were no different from their non-mentored peers in all but two outcomes: they were less likely to start skipping school, and teachers reported that they were less accepted by their peers. (See Appendix G for tables showing specific associations between relationship quality and outcomes.)

We also made more direct comparisons between improvements in each outcome for 15-month Littles in very high-quality relationships in Year Two and those in lower-quality relationships at that time. These comparisons revealed that 15-month Littles in very high-quality relationships had better outcomes on nine of the 23 school-related areas (including academic attitudes, performance and behavior) and five of the eight non-school-related outcomes tested (i.e., those outcomes reflecting parent and peer relationship quality). (See Appendix G for a table of these results.)

The differences between Littles in very high- and lower-quality relationships in non-school-related outcomes leads one to suspect that at least some of these findings result from personal characteristics of the youth, simply because we did not find impacts on non-school-related outcomes in Year One for the sample as a whole. However, it could be that some school- and non-school-related outcomes begin to change only after a relationship is both deep and has lasted a long time. Our data do not allow us to test these hypotheses.

2. **For one-school-year Littles: Is the quality of their relationship at the end of the first school year associated with longer-term benefits?**

   One-school-year Littles who reported having very high-quality relationships in Year One of the study had significantly better outcomes than their non-mentored peers in a few school- and non-school-related areas in the late fall of the second school year. (See Appendix G for tables showing all the outcomes.) In Year Two, relative to their non-mentored peers, one-school-year Littles who had experienced very high-quality mentoring relationships:

- Were more prepared for school and had higher academic self-esteem; and

- Felt more emotional support from their peers.

Our analyses indicated a very different pattern of outcomes for one-school-year Littles who had experienced lower-quality relationships at the end of the first school year. As discussed in Chapter IV, we found very little evidence for detrimental effects of lower-quality relationships at the end of the first school year. However, we find that having a lower-quality relationship in Year One is associated with poorer outcomes in a variety of academic areas several months after the Littles' mentoring relationship ended.[66] By late fall in the second school year of the study, relative to their non-mentored peers, one-school-year Littles who had experienced lower-quality matches:

- Had poorer overall academic performance (particularly in social studies), had poorer quality class work and completed fewer assignments, were less prepared for school, exhibited less classroom effort and were less task-oriented;

- Misbehaved more often, were more likely to be involved in serious misconduct at school and exhibited more negative classroom affect; and

- Demonstrated less positive behavior toward their peers and had less positive relationships with their parents.

Finally, direct comparisons between improvements for the two groups of one-school-year Littles—those who had experienced very high-quality relationships and those who had been in lower-quality relationships—show that the "very high-quality" Littles had significantly better outcomes in Year Two in over one-third (9 of 23) of the school-related outcomes tested (including academic performance and behavior and teacher relationship quality) and three of the eight non-school-related outcomes tested (i.e., relationship quality with peers and parents) than did the "lower-quality" Littles. (See Appendix G for a table of these results.)

The findings from these match experience analyses are consistent with the hypothesis that longer and stronger relationships are more beneficial for

Littles than shorter, weaker relationships. In many areas, youth with a very high-quality relationship by the 15-month follow-up out-performed both their non-mentored peers and those youth with lower-quality relationships. Those Littles in very high-quality matches whose relationships ended prior to the second school year do not have such widespread benefits, but they do continue to show a positive pattern of outcomes relative to both their non-mentored peers and those one-school-year Littles in lower-quality relationships.

Conversely, we saw that having a lower-quality SBM relationship that closes at the end of one school year may actually be detrimental for youth after the match terminates. Our findings for 15-month Littles in lower-quality relationships (i.e., that there was no clear pattern of either positive or detrimental impacts) suggest that perhaps these one-school-year Littles in lower-quality relationships might have benefited from more time with the mentor to begin to resolve whatever problems they may have had in their relationship. Ending a relationship on a bad note may be much more disruptive than ending a strong relationship or continuing to work on a relationship that is struggling.

Do Littles Who Maintain Summer Contact with Their Mentors Have Longer and Stronger Relationships than Those Who Lack Summer Communication?

As noted in Chapter III, Littles varied in the extent to which they maintained contact with their mentors during the summer months. For most agencies, SBM is a school-year program that allows Bigs and Littles to meet only at school or agency-sponsored events where they can receive adequate supervision. To enable agencies to match mentors and youth more quickly, most SBM programs use somewhat less rigorous screening than CBM programs. In fact, volunteers interested in mentoring with BBBS SBM are matched about 61 days after their initial inquiry, while it takes about 102 days to match those interested in volunteering with BBBS CBM.[67] However, these less rigorous requirements also restrict the amount of contact mentors can have with youth outside of the program's supervision.[68]

Some BBBS agencies have begun to develop summer programs for their matches in response both to individual matches' desire to maintain contact

Table 18
Frequency of Summer Communication

Frequency of Interaction	Percentage of mentors in open matches reporting various amounts of summer contact with their Little		
	In All Agencies: (n=271)	In Agencies That Encouraged Summer Interaction: (n=170)	In Agencies That Did Not Encourage Summer Interaction: (n=101)
Never	39%	22%	65%
Once During Summer	20%	20%	21%
Once a Month	20%	29%	5%
Every Two Weeks	15%	21%	6%
Once a Week	5%	7%	2%
More than Once a Week	1%	1%	1%

Note: The distribution of interaction rates differs significantly between the two set of agencies at less than a 0.01 level.

and the agency's hope that summer contact could help strengthen these relationships. BBBSA has also recently begun encouraging its agencies to support summer contact. In most cases, these summer programs are fairly young and unstructured, sometimes involving agency events but, more often, simply allowing the matches to write letters or emails to each other. And the agencies often take extra steps to ensure that summer contact does not lead to unsupervised meetings. For example, some programs ask participants to send letters to the agency for screening, only after which the letter is forwarded to the Big or Little.

The programs involved in this study varied in how much summer contact they permitted. During the summer, Bigs and Littles were generally restricted from meeting face-to-face except at agency events, which only five of the ten agencies organized.[69] At these five agencies, staff also encouraged matches to talk by phone or communicate through email or letters. At the other five agencies, staff did not encourage or facilitate summer communication.

We found that, across all agencies, only about two fifths (41 percent) of mentors in "open" matches[70] communicated with their Littles at least every month, and only 21 percent communicated

biweekly or more often (see Table 18).[71, 72] Much of this communication occurred in the form of phone conversations or meeting in person at BBBS-sponsored activities. The vast majority (85 percent) of matches that communicated at least biweekly participated in one of the five agencies that made efforts to encourage and support summer communication.

Did this limited amount of summer communication make a difference? To address this issue, we explored two related questions, including in our analyses only those youth who were in open matches over the summer:

1. **Does summer contact contribute to match longevity?**

   Our analyses found some evidence that summer contact may help to sustain matches. Over half (56 percent) of the mentors who communicated with their Little over the summer believed that doing so helped them decide to continue their match. Moreover, those matches that communicated at least monthly during the summer were over one-third more likely (88 percent vs. 62 percent) to carry over into the following school year and lasted significantly longer after the end of the summer (13.3 weeks vs. 8.7 weeks) than those that did not communicate.

2. Does summer communication strengthen mentoring relationships?

We found evidence that it may. About two thirds of mentors who communicated with their Littles over the summer felt that summer contact improved their relationship with their Little. Our quantitative analyses, examining only those 15-month Littles who continued their first-year match into Year Two, support this pattern: Those Littles who communicated at least biweekly with their mentor over the summer showed more improvement in the quality of their relationships from the first to the second follow-up than those who did not have at least biweekly summer contact. Biweekly summer contact appears to be a minimum threshold for boosting relationship quality: When adding those youth with monthly contact to the biweekly group, the association is no longer significant (i.e., 15-month Littles who had at least monthly summer communication did not feel any more positively about their relationship in Year Two than Littles who had less frequent contact).

Although maintaining summer contact with mentors seemed to contribute to subsequent match quality and longevity, we found no strong evidence that it led to greater program benefits.[73] Clear associations between summer contact and youth outcomes may have failed to emerge because the relatively limited amount of summer contact that occurred among matches in our study was inadequate for making a substantial impact on youth outcomes. However, the fact that summer communication seems to contribute to creating longer and stronger matches lends support to its potential value. Until recently, the possible implications of the "summer gap" in SBM have been relatively neglected, yet it is an area that clearly warrants more attention.[74]

Summary

This chapter discussed several important findings related to the effects of involvement in BBBS SBM past the first school year. First, although program staff hoped that most of the children would continue to have a mentor during the second school year of the study, nearly half did not. Youth who did not sustain their mentoring relationships showed no evidence of continued academic benefits in the second school year. As has been found with many other short-term youth interventions (e.g., Walker and Vilella-Velez, 1992), the five months of SBM was not enough to sustain long-term impacts.

We found some evidence suggesting that Littles who continued to have a mentoring relationship in the second school year demonstrated a more positive pattern of school-related outcomes than Littles whose matches ended after the first school year. However, the differences were not great: The 15-month group showed only a few significant school-related outcomes either relative to their non-mentored peers or when compared to those who received only one school year of mentoring. The lack of strong benefits for Littles who received mentoring in Year Two could very well reflect the timing of our second follow-up. Those Littles who did continue their program involvement had an average of only 3.3 months of mentoring in the second school year of the study, and thus very little time to reconnect with their mentors after the summer break.

Second, Littles who reported having very high-quality relationships with their mentors in Year Two of the study showed better academic and social outcomes relative to their non-mentored peers in the second school year. And, importantly, those Littles experiencing lower-quality relationships in Year One who did not receive continued mentoring in Year Two showed declines in several areas, relative to youth who were never involved in the program. While we cannot definitively link the decline to the poorer-quality relationship, it is a pattern that clearly warrants further study.

Third, although we did not see a direct association between summer meetings and outcomes, Littles who maintained summer communication with their mentors had both longer and stronger matches in the second year of the study.

Taken together, the findings suggest that encouraging matches to maintain contact with each other during the summer break could help sustain and strengthen matches. And improving the length and quality of these relationships may be important strategies for helping to maximize the benefits achieved through SBM.

The Cost of BBBS School-Based Mentoring

This evaluation has focused on examining the impact of BBBS SBM on the lives of youth. However, before policymakers and program operators can use these findings in an informed way, they need to know what these programs cost. Although the cost of SBM has been estimated before (Herrera et al., 2000), most of this earlier work was completed when school-based mentoring was just beginning to take hold. From 1999 to 2006, the number of BBBS school-based matches increased by 466 percent, which resulted not only in the need to hire additional staff but also in the need for some agencies to expand in other operational areas, such as facilities and financial development. Given these changes in program size and agency organization, it is likely that the cost to run these programs has also changed.

While the question, "How much does it cost?" seems straightforward, answers could differ greatly, depending on what is included or excluded when defining "cost." To try to provide the field with the most useful answer, we valued the cost of the components of school-based programs for the 10 participating agencies in a consistent manner, regardless of whether the programs paid for the item in cash or had it donated. The only major donated costs that were not included were the value of the mentors' time and the value of the school space in which the program operated. Traditionally, mentors' time is not included in the cost of mentoring programs because almost all programs typically rely on volunteers in this role. Similarly, school building cost is generally excluded because programs do not have to budget for this item. Moreover, the space a program uses within a school varies considerably across programs and would be difficult for agencies to accurately value. In addition, the lack of consensus on the value of volunteer time and donated space means that cost estimates would be heavily laden with assumptions about what price is appropriate. Most previous cost studies of mentoring exclude these two items, as do we.

Because cash expenses and donations are treated equally, conclusions about differences in cost will not be driven by which agencies were more successful at obtaining donated goods and services. Instead, we can examine what real factors were responsible for driving costs. To put the SBM cost in context, we also present the agencies' costs for their CBM programs, estimated using the same method (including both cash costs and donations).

This chapter presents cost information for the year 2005 for the 10 agencies participating in this study.[75] It examines these questions:

- What was the total cost of the agencies' SBM program?

- What were the major cost components?

- What accounted for the variation in costs among the SBM programs?

- How do these costs compare to costs of CBM programs?

The 10 agencies from which we developed our cost estimates are geographically diverse and represent a mix of smaller and larger agencies. However, in some ways, they are not representative of all BBBS school-based programs, as they were chosen for this study, in part, because they each had a well-established SBM program that served at least 150 youth per year. In addition, while only 7 percent of BBBS affiliates nationwide are large,[76] four of our ten study sites (or 40 percent) are large agencies. Thus, the costs reported in this chapter may not be accurate for smaller BBBS SBM programs, nor do they include the costs associated with starting an entirely new program.[77] They are meant to give practitioners and policymakers an idea of what it costs to maintain well-established BBBS SBM programs.

Program Costs for School-Based Mentoring

In 2005, the SBM budgets of the 10 agencies varied greatly, ranging from less than $200,000 to over $2.8 million. The budget of the multimillion-dollar program, however, was more than twice as large as

Table 19
Total SBM Costs across the Ten Programs

	Average	Average without Largest Program	Median[a]	Range
Program Cost	$798,790	$569,357	$430,545	$173,408-$2,863,693
Number of Matches[b]	781	643	828	155-2,024
Cost per Youth[c]	$987	$939	$1,064	$370-$1,415

Notes:
a   The median is the value in the middle of a range of numbers. It is not affected by other values in the range. Thus, unlike averages, it is not affected by outliers.
b   This includes the number of matches that carried over from the previous year and the number of new matches the agency made during the cost period.
c   The largest program did not significantly affect cost-per-youth figures.

that of the second largest program. Because it was such an outlier, we will present two averages (one for all the programs and one for all the programs except the outlier) whenever the size of the large program significantly alters the average.

The average SBM budget was $798,790 for all programs but only $569,357 when excluding the outlying program (see Table 19). One of the major reasons the budgets varied as widely as they did was that the programs served very different numbers of children. The multimillion-dollar agency served more than 2,000 children in its SBM program, while the smallest agency served 155. The average number of children the agencies served in their SBM programs was 781, or 643 without the largest program. To account for the variation in the number of children served, we examined costs per youth. Across the 10 school-based programs, the cost ranged from $370 to $1,415 per youth per year. The average annual cost was $987, while the median was $1,064.

The Major Cost Components

Figure 3 illustrates the average distribution of program costs across the 10 agencies. Staff costs—including program staff and general agency staff, such as administrators and finance and development personnel—were by far the largest share of expenditures, just over two thirds of overall program costs. While the specific program staff roles

Figure 3
Average Distribution of SBM Costs per Youth, by Component
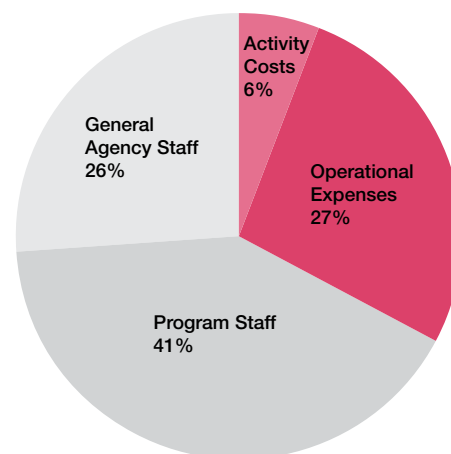
varied by agency, all agencies had program managers—staff who oversaw the SBM program and supervised case managers—as well as case managers. Case manager responsibilities ranged from recruiting youth to conducting interviews with volunteers to ongoing monitoring of mentoring relationships. In larger agencies, these tasks were often divided among specialized staff, such as interviewers, who were solely responsible for interviewing new mentors and youth; enrollment specialists, who saw the match through the early phases of screening and

matching; and match specialists, who monitored matches on-site as well as provided ongoing support to matches.

In the 10 agencies surveyed, program staff account for $408 (or 41 percent) of the $987 spent per youth. General agency staff account for another $252 (or 26 percent) and staff training accounts for $6. Operational costs—agency facility costs, office expenses and overhead (such as fundraising, public relations, agency dues and liability insurance)— account for $260. The remaining $61 comes from the combination of materials for program activities, program events and program transportation costs.

Approximately 12 percent of the $987 average program cost was donated (see Table 20). On average, these 10 agencies were able to provide an SBM program costing $987 per youth per year for $870 in cash expenditures, with the other $117 being provided by donated resources outside of the volunteers' time and the school space. Of the $117 of donated resources, $80 (68 percent) was donated school staff time (principals, teachers and counselors who serve as program liaisons for the BBBS agency), $18 was donated materials for the program, $5 was goods donated for youth activities, $9 was donated office rent, and the remaining was comprised of donated transportation, office expenses and miscellaneous services.

What Factors Are Related to Agency Variation in Per-Youth Costs?

To try to better understand the cost of SBM, we examined how per-youth cost varied among agencies by several factors: the number of youth served (including the size of the SBM program, the average number of student participants per school, and the overall size of the agency—the number of youth served in both its SBM and CBM programs); the distance of the schools from the agency's office; and the ratio of youth to staff.

Number of Youth Served

In theory, there could be efficiency in recruiting and screening large numbers of youth and volunteers, especially in school-based programs. For example, larger programs might be able to hire lower-paid staff in specific roles (such as data entry or

volunteer recruitment) that are often folded into the job duties of case managers or program managers at smaller programs. However, we found no association between the number of youth an agency serves, either in its SBM program or overall, and the per-youth cost for SBM. Similarly, we did not find significant associations between the cost per youth and the average number of matches per school. Intuitively, having more matches in a school should reduce the supervisory costs because one staff member, while at the school, could monitor 15 matches as easily as five; but this is a small cost component compared to the screening and matching costs.

Agencies' Distance from Schools

Two somewhat inconsistent associations were found when assessing links between the average cost per SBM youth and the agencies' distance from the schools. Those distances ranged from having all school sites within a 30-mile radius of the agency (for five agencies) to having many schools that were one to two hours away (four agencies), to having at least a few schools that were more than two hours driving distance (one agency). Across most of the programs, cost per youth increased as the distance between the agency and the schools it served grew. Agencies in close proximity to the schools they served tended to have lower costs per youth than agencies whose program staff had to travel one or two hours to many schools, and these agencies, in turn, tended to have lower per-youth costs than the agency with schools that were very far away.

But the per-youth cost figures for one agency did not fit this pattern. Though many schools were one or two hours away from this agency, its cost-per-youth figures were lower than agencies that were much closer to the schools they served. The staff at this agency had very high caseloads; and given the strong association between high caseloads and lower costs (discussed more fully in the next section), the effect of these caseloads likely outweighed the smaller effect of distance on cost per youth.

Youth-to-Staff Ratio

Although it seems almost self-evident because the cost of mentoring is driven by personnel costs, the only factor that significantly affects the cost per youth is the average number of youth supported by a full-time equivalent (FTE) staff (combined

Table 20

Average Out-of-Pocket and Donated Cost per Youth by Component for SBM and CBM

SBM			CBM		
Component ($ total and % total per-youth cost)	Out-of-Pocket Expenses (% total per-youth cost)	Donated Expenses (% total per-youth cost)	Component ($ total and % total per-youth cost)	Out-of-Pocket Expenses (% total per-youth cost)	Donated Expenses (% total per-youth cost)
Staff Costs $666 (67.5%)	**$586 (59.5%)**	**$80 (8%)**	**Staff Costs $678 (62.5%)**	**$665 (61.5%)**	**$13 (1%)**
Program Staff	$328 (33%)	$80 (8%)	Program Staff	$379 (35%)	$13 (1%)
General Agency Staff	$252 (26%)	$0 (0%)	General Agency Staff	$278 (25.5%)	$0 (0%)
Staff Training	$6 (0.5%)	$0 (0%)	Staff Training	$8 (1%)	$0 (0%)
Operational Costs $260 (26.5%)	**$248 (25%)**	**$12 (1.5%)**	**Operational Costs $299 (27.5%)**	**$284 (26%)**	**$15 (1.5%)**
Overhead[a]	$139 (14%)	$3 (0.5%)	Overhead	$168 (15%)	$5 (0.5%)
Facilities	$ 61 (6%)	$9 (1%)	Facilities	$63 (6%)	$10 (1%)
Office Expenses	$ 48 (5%)	$0 (0%)	Office Expenses	$53 (5%)	$0 (0%)
Activity Costs $61 (6%)	**$36 (3.5%)**	**$25 (2.5%)**	**Activity Costs $111 (10%)**	**$34 (3%)**	**$77 (7%)**
Materials	$11 (1%)	$18 (2%)	Materials	$9 (1%)	$20 (2%)
Events	$5 (0.5%)	$5 (0.5%)	Events	$9 (1%)	$57 (5%)
Transportation	$20 (2%)	$2 (0%)	Transportation	$16 (1%)	$0 (0%)
Total Cost per Youth	**$870 (88%)**	**$117 (12%)**	**Total Cost per Youth**	**$983 (90.5%)**	**$105 (9.5%)**
Full Cost per Youth (Including Donated and Out-of-Pocket Expenses)	**SBM $987**			**CBM $1,088**	

Note:
a Overhead costs include fundraising, agency dues and liability insurance costs.

program and general agency staff). This is true when considering either paid staff alone or the combination of paid and donated staff time. The more youth a staff member supports, the lower the per-youth costs. On average, for every 10 additional youth served per paid FTE staff member, the cost per youth decreases by $71. The association is even stronger when considering all staff, both paid and donated: Then, the cost per youth drops by $96 for every 10 additional youth served.

Another way to look at personnel costs is to consider the association between cost per youth and the youth-to-staff ratios of program staff alone (for example, case managers and program managers).[78] For every 10 additional youth served per paid FTE program staff member, the cost per youth decreases by $39. Again, the association is even stronger when considering both paid and donated program staff: Then, the cost per youth decreases by $60 for every

10 additional youth served by a FTE program staff member. Of course, having larger caseloads also means that program staff can provide less individual support and follow-up to each match.

Comparing the Cost of School-Based and Community-Based Mentoring

To put the SBM costs in context, we examined what the same 10 agencies spent on their CBM programs. As with the SBM programs, total costs ranged widely (approximately $73,000 to $4.1 million), primarily because one of the agencies was very large. The range of costs per youth for CBM, however, was fairly similar to that of SBM, although CBM is somewhat more expensive. The average annual cost per youth for CBM was $1,088, compared to $987 for SBM.

Distribution of Costs in SBM and CBM

As Table 20 on the previous page illustrates, the distribution of component costs between the two types of mentoring programs was fairly similar. As with SBM, staff in CBM programs account for the lion's share of the costs—62.5 percent, or $678, of the $1,088. (For SBM, it was 67.5 percent.) Operational costs accounted for just over a quarter (27.5 percent) of CBM expenses, as they did for SBM. The largest difference was in activity costs, namely materials, events and transportation. Activity costs in SBM were 6 percent, whereas they were 10 percent in CBM, with event costs accounting for almost all of the difference.

As with SBM, the agencies did not pay for all these CBM costs out of their own budgets: 9.5 percent—or, on average, $105 of the $1,088 per youth—was donated. Nearly three quarters of the donated goods and services (73 percent) were for activity costs associated with agency-sponsored mentoring events, such as tickets to museums or sporting events, or materials and food for special activities.

Accounting for Cost Differences between SBM and CBM

As shown in Table 20, both in terms of full cost and out-of-pocket costs, SBM was somewhat less expensive than CBM. The two areas that account for the majority of total per-youth cost differences between

the programs are operational and activity costs. Half of the difference is accounted for by the higher costs of events in CBM. While SBM programs only spend an average of $10 per youth on events, CBM programs spend $66 on average.

Most of the difference in operational cost per youth is accounted for by the effects of the higher cash expenditures for program staff in CBM. While SBM program staff per-youth costs are actually higher than those in CBM ($408 vs. $392), a larger portion of CBM program staff costs are paid out-of-pocket (97 percent in CBM versus 80 percent in SBM) because CBM does not receive the donated school staff time that SBM programs are structured to receive. Therefore, because CBM programs use more out-of-pocket paid program staff per youth served (and those staff are housed at the BBBS agency), agency staff reported that a greater fraction of the operational costs—such as office space, utilities and other facility costs—were associated with the CBM programs

Program Factors Affecting the Relative Costs

Previous studies have reported that school-based mentoring costs less than half as much as community-based mentoring (Herrera et al., 2000; Herrera, 1999) and significantly less than the cost reported in this study. We were surprised to find that our cost estimates for SBM and CBM were so similar—differing by only about $100 per youth.[79] However, a number of factors help explain why the difference in cost between programs is less than we had anticipated.

Past research, studying mostly school-day programs, has suggested that matches in SBM programs require significantly less recruitment and supervision time from staff than CBM programs. Volunteer recruitment, for example, is often simplified in SBM because many volunteers, including high school students and corporate employees, are recruited in groups. Supervision can also be less time-consuming because staff can easily find mentors and youth at the youth's school, whereas supervision in CBM may require more staff efforts to reach them.

However, 60 percent of the agencies told us that SBM and CBM matches require nearly equal amounts of staff time, and that is reflected in the cost numbers. Because staff time is the largest fac-

tor in determining cost, comparable SBM and CBM program costs did not surprise the agencies. In some cases, equalizing staff time was intentional on the part of agencies because they chose to exceed BBBSA standards by requiring as many monitoring interviews for SBM matches as for CBM matches, which have higher volunteer monitoring requirements for the first year (i.e., monthly as opposed to every other month in SBM). In the case of one agency, the equal demands on staff time resulted from screening SBM youth and mentors so that they could participate in either CBM or SBM programs rather than qualifying for only SBM.[80] Another factor that contributed to higher than expected amounts of staff time for SBM was the time of match meetings. Unlike school-day programs, which can be supervised by school staff, before- or after-school programs usually require BBBS staff to be on site to monitor and supervise the program. Eighty percent of the agencies in our study ran at least some of their programs before or after school.[81]

Perhaps the biggest factor that affected staff costs was the difference in match duration between SBM and CBM programs. Most matches in CBM continue for more than a year (that is, they are "carryover" matches). By comparison, most matches in SBM programs are new each school year and, thus, require the lengthy initial steps of volunteer background checks and in-depth screening interviews for volunteers and youth. On average, the 10 agencies reported that 30 percent of their school-based matches were carryover matches, compared with 70 percent of community-based matches.[82] Given the high percentage of carryover matches in CBM programs, costs per CBM youth are much closer to those of SBM programs than they might be otherwise.

This discussion has examined the relative costs of SBM and CBM on a per-youth basis because the ultimate value of a program is in its impacts on individual youth. Considered in another way, however, purely in terms of the relative costs of "mentoring time"—without taking into account benefits or, as discussed in the next chapter, the different ways that relationships seem to develop in the two models—CBM may appear to be less costly than SBM. SBM matches meet for fewer hours over a year than do CBM matches (approximately

36 hours in SBM and 108 in CBM, according to agency estimates of mentor time), because CBM matches meet both for more months and typically for more hours per meeting.

Finally, CBM has also been in existence for much longer than SBM, and there is a much greater consensus on best practices and procedures for screening, supervision and other aspects of the program. As a result, BBBS agencies have been able to work to become more efficient at delivering strong CBM programs. SBM, on the other hand, is a much younger program. There is, as yet, no consensus on a set of best mentoring or business practices that could enable SBM programs to run more efficiently. Thus, the costs of SBM may decrease in the future as best practices are identified and implemented, and efficiencies are realized.

Summary

Examining costs reported by the 10 participating agencies showed that these well-established BBBS programs were able to provide SBM for approximately $1,000 per youth per year, with approximately $900 of that being paid for by the agency while $100 of goods and services were donated by the school and others. At least among our sample, there did not seem to be any economies of scale—programs serving more youth were not less expensive. In most cases, costs tended to be lower the closer the schools were to the BBBS offices (because of smaller costs for travel time), but the factor that most significantly affected cost was the ratio of youth to staff. The more matches staff are expected to supervise, the lower the cost. The issue, of course, is to find a good balance between efficient youth-staff ratios and the level of staff necessary to maintain high program quality (see Posner and Vandell, 1994; Rosenthal and Vandell, 1996; Walker and Arbreton, 2004).

To put the SBM cost into perspective, we compared it to the cost of CBM programs run by the same agencies. We found that these costs were comparable—$987 per youth per year for SBM, and $1,088 for CBM. SBM has a somewhat higher percentage of these costs covered through donations, particularly through the donated time of school staff who serve as liaisons between the school and the BBBS program.

This chapter presented the cost of SBM for 10 well-established BBBS agencies that have had SBM programs for several years. These costs are likely to be different for programs that are just beginning to be implemented. In addition, as the SBM field continues to develop and best practices are identified and adopted, programs may be able to become more efficient and find ways to further reduce costs—a situation that appears to have taken place over time with CBM programs. Thus, these cost figures should be viewed as estimates that may apply more or less well to programs with different characteristics or to programs in the future.

Conclusions

S chool-based mentoring is one of the fastest growing forms of mentoring in the US today, with BBBS alone serving over 126,000 youth nationwide. This random assignment impact study of SBM in 10 BBBS agencies was designed to rigorously assess whether BBBS SBM is positively affecting the lives of participating youth. It is the first large-scale, national impact study conducted of the BBBS SBM program.

The study allowed us to test the effects of BBBS SBM on a wide range of outcomes as well as answer several additional questions of import in the field today. Data collected from teachers, mentors, youth and BBBS staff over the course of this 15-month study yield several conclusions about the programs themselves, the impacts they can be expected to produce, and the mentoring experiences linked with these impacts. This chapter summarizes these conclusions and closes with recommendations for policymakers and funders and for programs implementing the SBM model.

The Programs

The growth of SBM over the past decade has led to several changes in the content and structure of these programs. The programs involved in this study are more diverse than described previously (e.g., Herrera, 1999). Their characteristics also dispel some common misconceptions about who is involved and what involvement means.

BBBS SBM is neither a tutoring program nor a CBM program placed inside a school.

Counter to concerns that SBM is merely a tutoring program, only 11 percent of the programs involved in our study focused primarily on academic activities. And only nine percent of the mentors cited academic improvement as their central goal in their meetings with youth.

Yet, unlike CBM, these programs typically have some degree of structure (the programs outline at least some of the activities engaged in by the matches), most involve some academic activities, and these activities take place within the boundaries of the school. Moreover, although most SBM volunteers are focused on relationship development, they simply do not have as much time to develop the kind of long-lasting, close relationships commonly seen in CBM programs. In fact, despite fairly high levels of closeness and emotional engagement reported by youth, only about one fifth of mentors reported feeling very close to their Littles, compared to about 45 percent of CBM mentors in another national study (Herrera et al., 2000).[83]

Programs are quite diverse in their structure and focus.

The programs involved in this study served children at different times and places within the school, used different age groups of volunteers and engaged matches in a wide range of activities. In some cases, mentors met alone with their Littles; in others, all matches met at one time in a common location, such as the school gym or cafeteria.

Programs have evolved in this way to meet the differing needs and expectations of schools and a widening volunteer base. Some schools insist on programs that can directly address their students' academic needs by helping them with school work, whereas others allow the BBBS agency more freedom in determining the focus and tenor of the program or prefer more "social" activities for their students. And some volunteers—particularly those in high school—need more structure and supervision or may prefer mentoring alongside their peers. It is still unclear whether and how these program characteristics affect the development of the mentoring relationship, its length and impacts. Because there is so much variability across programs, answering this question will be important as programs try to ensure that they are structured in ways that are most conducive to fostering benefits in youth.

Programs are serving many students with risk factors.

By targeting schools that were facing challenges in meeting academic performance standards and that were located in poor communities, the BBBS agencies hoped to reach economically disadvantaged students who might need the kind of support that the program provides. In fact, about 80 percent of participating youth received free or reduced-price lunch and/or were living with only one parent. Teachers reported that 22 percent had problems with school behavior. Another 43 percent had problems in their relationships with their parents, teachers or peers, and 21 percent reported engaging in misconduct (either substance use or stealing). In addition, teachers of a little over half of the youth reported that they were performing "below average" academically. Assessing risk across these four outcome areas (i.e., academic performance, school behavior, relationships and youth-reported misconduct) showed that 77 percent of students had problems in one or more of the areas.

While BBBS is clearly reaching an economically struggling group of children with a variety of needs, it is less clear how to gauge the levels of the individual risk factors. For example, while half of the children are struggling academically, half are not especially needy in this area. Recruitment targeting has the potential to reach the most needy students; however, the agencies had great difficulty getting permission for participation from the parents of referred children, and a few allowed youth to refer themselves (regardless of their level of need) to increase enrollment. Because permission from parents is required for enrollment and agencies do not always succeed in reaching unresponsive parents, it is likely that some children in the most overwhelmed families are not being served. Whether these very needy children are actually appropriate targets for SBM, or whether they require a more intensive intervention, is a separate issue that awaits further study.

Impacts

The study's design allowed us to rigorously measure impacts at two time points. The positive impacts we measured highlight the promise of the BBBS SBM program model. At the same time, however, we also found shortcomings in the model's current design that may prevent some youth from receiving long-term benefits from participation.

Impacts measured after one school year of involvement in the BBBS SBM program showed that Littles improved in a range of school-related areas, including their academic attitudes, performance and behaviors.

During the first school year of the study, Littles received an average of about five months of mentoring. This is fairly typical of these programs, which require some time for start-up at the beginning of the school year and generally end prior to the end of the school year. Additional youth and mentors are also recruited as the year progresses. Despite this short time frame, we found that, relative to their non-mentored peers, Littles showed improvements in the following teacher-reported outcomes:

- Overall academic performance, and the specific subject areas of
  - Science, and
  - Written and oral language;
- Quality of class work;
- Number of assignments turned in (homework and in-class assignments); and
- Serious school infractions (including principal's office visits, fighting and suspensions).

They also improved in the following youth-reported outcomes:

- Scholastic efficacy (feeling more competent academically); and
- Skipping school—which teachers confirmed by reporting that fewer Littles had an unexcused absence in the four weeks prior to our survey.

Littles were also significantly more likely than their non-mentored peers to report an important additional benefit:

- The presence of a non-parental adult in their life who provided them with the types of supports BBBS strives to provide participants—someone they look up to and talk to about personal problems, who encourages them to do their best, cares about what happens to them and influences the choices they make.

We did not see benefits in any of the out-of-school areas we examined, including drug and alcohol use, misconduct outside of school, peer and parent-child relationship quality and self-esteem.

These impacts are statistically significant although modest in size.

The size of these school-related impacts is modest, though almost identical to that reported in P/PV's 1995 study of BBBS community-based programs (Tierney, Grossman and Resch, 1995). However, youth participating in CBM benefited in several non-school-related areas that did not yield significant impacts in this study. Thus, five months of SBM led to impacts of about the same size as those observed in our evaluation of BBBS CBM but in a narrower set of outcomes—specifically those related to school.

Other, less-established SBM programs may not yield comparable first-year impacts.

Although the agencies involved in this study reflect a range of sizes and structures, they were all selected in part because they are well-established and have strong relationships with the schools where the SBM programs are located. They have guidelines for training, supervision and support of matches; they rely on well-thought-through and well-researched operating guidelines; and they have been serving youth for several years. Programs implemented by younger, less-established agencies without this level of infrastructure may not yield similar impacts.

Participating agencies' diversity in size, operations and geographical location suggests that findings may be extended to other BBBS agencies; however, we did not test how comparable the 10 study agencies are to the other 400-plus BBBS agencies nationwide, and we know that agencies participating in this study differ from the average BBBS agency in some dimensions. For example, they have larger budgets than the average BBBS agency, and their SBM programs are fairly well established.

One school year of the BBBS SBM program is not enough to permanently improve youth's academic performance.

Before the start of the second school year of the study, close to one third of the treatment group had transferred to a new school—typical of SBM programs that serve fifth and eighth graders (who transition to middle or high school) and of the general mobility seen in schools served by these and other BBBS programs. This meant that only 41 percent of all Littles in the second year of the study were in a match that had carried over from Year One, while an additional 11 percent were matched with a new mentor. Almost all impacts measured at the end of the first school year were no longer evident for the full group of Littles at the second follow-up (in late fall of the second school year). At this time, relative to their non-mentored peers, Littles were less likely to have started skipping school and more certain that they would attend and finish college. Littles also continued to be more likely to report having a relationship with a supportive and caring non-parental adult. We found no teacher-reported impacts for the full sample in Year Two.

These findings for the full group of Littles, at least in part, reflect the fact that those Littles whose mentoring experience ended in the first year of the study retained none of their positive academic impacts at the second follow-up. This pattern is similar to that reported in those few evaluations of youth programs that include a follow-up (e.g., Walker and Vilella-Velez, 1992; Aseltine, Dupre and Lamlein, 2000). Most other evaluations, including P/PV's CBM impact study, do not include follow-up assessments, so it is unclear whether the effects of these programs would persist over time.

Two methodological limitations should be considered when interpreting these findings.

First, the timing of our Year Two follow-up may have affected our ability to discern impacts in the second year of the study. Our first follow-up was at the very end of the 2004-2005 school year. We chose an earlier timing in Year Two (the 2005-2006 school year), in part, to allow us to assess whether having a mentor could help offset the summer learning loss that is experienced by most students after the summer break. We also believed that the end of the first semester was a good point at which to gauge impacts because, in most schools, grades at that time point are a good indication of the student's success over the school year. However, to assess the students prior to the end of the first semester, we needed to begin data collection in mid-November. Combined with the late start of many programs, this timing meant that even youth who were involved in the program in the second year of the study received only about three additional months of mentoring.

Had our evaluation tested outcomes at the end of Year Two, matches would have had longer to reconnect and redevelop their friendships prior to our assessment, which may have produced more positive impacts. In Year Two, most ongoing relationships had a very recent four-month break during the summer and beginning of the school year that may have impeded whatever progress the match had made in the first year of their meetings.

Second, our outcomes were assessed using strong measures of academic performance, attitudes and behavior; but these measures are not objective assessments. By assessing both teacher and youth reports and examining key outcomes in several different ways (e.g., assessing different aspects of academic performance from both the teacher's and youth's perspective), we were able to achieve a level of confidence in our findings beyond that seen in many evaluations to date. Yet, as is true of most program evaluations to date (including P/PV's 1995 evaluation of BBBS CBM), we did not include actual assessments of children's ability through, for example, their performance on standardized tests. Nor did we rely on completely "blind" (i.e., unaware of their status as Littles) observations of students' school behavior. Although our follow-up analyses did not reveal any evidence that teachers

biased their responses to reflect bigger impacts for the Littles, even a small degree of bias in teachers' ratings could affect the impacts we observed. Littles may have also biased their responses to report favorable outcomes because they understood that they were expected to make progress as a result of program participation. Their non-mentored peers and their teachers could have also been motivated to report less favorable adjustment to make clear the youth's need for a mentor. The fact that our impacts consistently covered only some of the specific outcome areas we tested and that teachers and youth independently reported similar impacts in these areas supports the idea that our findings reflect "true" changes in youth. However, these caveats must be kept in mind when assessing the strength of these findings.

Mentoring Experiences and Impacts

In addition to examining the effects of the program on all participating youth, we also conducted more preliminary analyses to explore whether matches with certain characteristics benefit youth more than others. Although results from these analyses are not as definitive as the impacts reported above, they support previous research suggesting the importance of longer and stronger matches.

Longer matches may lead to better impacts.

Our analysis of associations between match length and one-school-year outcomes suggests that longer matches may contribute to stronger impacts. The evidence from the second school year is less clear. Those youth who received mentoring in Year Two appeared to fare slightly better academically than those whose mentoring experience ended after the first school year, although only two differences between these groups were large enough to achieve statistical significance.

Thus, for impacts to persist, SBM relationships may need to persist. This is not as simple as meets the eye—programs are by nature school-based and often serve only a handful of schools in a community. When a child moves, transfers or simply transitions to middle or high school, programs often cannot continue to serve the child. Providing first mentors to fifth and eighth graders in schools ending in those grades almost guarantees at most a

one-school-year match. Using high school and college seniors as volunteers, in many cases, also limits the length of these matches. In addition, student volunteers are likely to have changing class schedules and can often only commit to volunteering for a school year or semester. Although an emphasis in the mentoring field over the past several years has been on recruiting large numbers of volunteers to serve the many youth who could benefit from mentoring (even if those volunteers are limited in how long they can be matched), consideration must also be made to serving youth in a way that ensures success—this study suggests that lasting success may require continued intervention well past the first school year.

Relationship quality may work with match length to determine the strength of benefits.

Those Littles who experienced more than one school year of very high-quality relationships received bigger benefits from program participation in several outcomes than Littles in shorter or weaker relationships. And, importantly, those Littles who were involved in weaker one-school-year relationships showed declines on some outcomes, relative to their non-mentored peers, in the second school year of the study. Although our analyses could not rule out the possibility that youth characteristics were responsible for these associations, they do hint at the importance of improving the length and quality of SBM mentoring relationships, both to boost program impacts and to avoid negative effects of program participation.

Negative associations between short match length and outcomes have similarly been noted in CBM studies examining the effects of prematurely ended relationships (Slicker and Palmer, 1993; Grossman and Rhodes, 2002; Diversi and Mecham, 2005). Strong, long-lasting relationships are clearly capable of making powerful, positive changes in youth, but negative or short-lived relationships may leave a child feeling rejected and cause setbacks in the very areas the program hoped to strengthen.

Summer meetings appear to be an important way to lengthen and strengthen relationships.

In this study, only about 21 percent of mentors communicated with their Littles at least biweekly over the summer, typically through letters or emails or at agency-sponsored events. And the vast majority (85 percent) of these matches participated in one of the five agencies that made efforts to encourage and support this communication.

These efforts paid off: Matches that communicated over the summer were more likely to carry over into the following school year and lasted significantly longer after the end of the summer than those that did not communicate. About two thirds of those mentors who communicated with their Little over the summer reported that this contact improved their relationship, and over half (56 percent) felt that summer contact helped them decide to continue their match. Quantitative analyses further revealed that those matches who communicated at least biweekly over the summer had stronger relationships in the second year of our study, regardless of the quality of their match in the previous spring.

BBBSA has recently begun encouraging its agencies to support summer communication in their SBM matches. But many agencies are uncomfortable allowing summer contact without increasing screening requirements for SBM volunteers; and some schools may prefer that matches limit their communication to the school building. There are also questions about how to proceed with this change. What kind of summer communication makes the most difference? Should agencies invest in agency-sponsored activities or does written communication suffice? How expensive are these efforts? How should parents and schools be involved in making these decisions? Answering these questions will be important as the field considers this relatively neglected component of SBM.

SBM may affect children through different processes than those outlined for CBM.

It is noteworthy that we were able to detect impacts after an average of only five months of meetings. To understand how SBM works, theories that mentoring impacts rely, in large part, on more fundamental changes in how youth see others and themselves, may have to be expanded. Perhaps short-term changes in youth's academic attitudes and behavior are made fairly quickly—as we found in this study—with a small amount of increased one-on-one attention and support in the school context.

It may be the mentor's presence in the school—and, in some cases, his or her direct connection with teachers (and, thus, knowledge about the child's classroom behavior)—and ability to help the child through homework and school-related issues that drive these initial changes in behavior, attitude and performance. Long-term, more widespread and permanent changes in youth may rely more on the types of fundamental changes that come about with longer and stronger relationships.

Yet, other short-term interventions focused on homework help have not been able to yield these kinds of performance and behavioral impacts (Dynarski et al., 2003). How does SBM, especially those programs focused in large part on academic help, differ from tutoring or homework-help programs in a way that enables them to yield impacts? Perhaps it is in the youth's understanding and expectations for the program and the mentor, as well as the volunteer's training and understanding that he or she is there to be a friend and support for the youth rather than to improve grades. Very few mentors felt that their primary objective was to improve grades—a goal associated with failing relationships (Morrow and Styles, 1995). Additionally, Littles were more likely than their non-mentored peers to report having a significant adult in their life—suggesting that their SBM mentor was perceived as an important friend, not simply a person who helps with homework.

Although in its premise and underlying goals, SBM is similar to CBM, in many important ways (related to the school environment and structure of the program) it is a different intervention. Thus it is not completely surprising that the impacts found in this study are different than those yielded by CBM. Having a friend and supporter who has a glimpse into school life that is typically reserved for only teachers and peers, and who in many cases is very close in age, is bound to have different impacts than having an adult friend who has very little if any association with school life.

Recommendations

The results of this study point to three main findings. First, we found strong evidence that BBBS SBM participation produces positive impacts for involved youth. These impacts covered a range of school-related areas, including school attitudes, behavior and performance, and they support the idea that SBM is a promising intervention.

Second, however, most of these impacts were no longer evident early in the second school year of the study. What do we make of these 15-month findings? The high attrition from the program (in large part because many youth changed schools) and the fact that Littles who continued with the program had to reestablish a relationship after a four-month break both point to challenges in the program's implementation. At the same time, high attrition and the effects of the summer gap period also limit the conclusions we can draw from the 15-month findings and our ability to understand these results. We know that the relative advantages that Littles had over their non-mentored peers at the end of the first school year of the study were neither maintained nor grew. But that is all we know confidently. Our findings suggest that the benefits of one school year of SBM may diminish soon after leaving the program, as is true of most other short-term youth interventions. But did youth who continued to be mentored continue to benefit from the program? Our results provide only hints that, approximately three months into a second school year of mentoring, they did.

Third, the patterns we found when exploring associations between outcomes and program experience (specifically with match length, relationship quality and match support) suggest several key programmatic areas that should be strengthened to enhance impacts on youth and help programs achieve the promise we saw in the first year of the study.

Taken together, these findings point to recommendations for two groups—policymakers and funders interested in SBM, and those wanting to implement the SBM model in a way that helps ensure positive experiences and benefits for youth.

Implications for Policy

Perhaps the most important question for policymakers and funders is whether SBM is a worthwhile intervention. We believe that, although there are a number of areas in which BBBS could strengthen implementation of the program (those areas are outlined in the next section), SBM is a worthwhile intervention that merits support as it further refines its program model.

SBM's strength lies in its ability to improve youth's school attitudes, behaviors and performance—impacts that make the intervention attractive and valuable to schools. Beyond that, SBM has potential to reach needy students who are struggling academically. These strengths may enable the program to have more widespread effects on teacher satisfaction, peer interactions and school climate. Our cost estimates suggest that these benefits come with a very small investment of school staff time. Although the impacts we outline in this report are modest in size, the impacts of other positive alternatives for schools (e.g., tutoring programs, after-school programs) are also modest. Although its relative advantage over other programs is a question for future research, SBM certainly appears to be a viable candidate among these options.

In addition, SBM has advantages for agencies. The intervention involves an underutilized group of volunteers—namely, high school and college students—and this enables the program to serve youth with mentors who would not have volunteered for CBM. Also, recruiting youth at schools allows agencies to reach young people who may not have otherwise been referred.

At the same time, an important issue remains: Because the costs of SBM (about $987 per youth per year) are comparable to those of CBM (about $1,088), and it appears to have a narrower range of impacts, why should agencies and funders invest in SBM when CBM could give them "more" impacts for their money? The important question, however, is not whether one strategy is "better," but whether programs and their funders can reach all of the youth, and the types of youth, they want to serve using a single model. BBBS' and other programs' experience suggests they cannot. Volunteers who are willing to come forward and commit to CBM are scarce. And the types of youth reached through CBM and SBM programs are slightly different. It is also likely that different types of youth may benefit from different types of mentoring. CBM is likely best suited for youth who need a missing role model and friend and would benefit from a long-term relationship. SBM, as it is currently implemented, is likely best suited for youth who would benefit from a mentor who could give them additional attention in school and an incentive to come to school, thereby improving their behavior and performance in this context.

Although some programs and funders may prefer to serve all youth with CBM, they would likely never reach a substantial number of the children who could benefit from mentoring but have not been reached in prior CBM efforts. And those who prefer to serve all youth with SBM may not provide as many youth with the kind of long-term relationship and more widespread benefits that can result from a strong CBM program. Different children and communities have different needs that neither option can fully address alone. A complementary approach using both strategies is likely the best way for programs and funders to reach a wide, diverse group of youth and volunteers.

BBBS is a well-established leader in SBM and the mentoring field as a whole. We believe that its clear guiding principles on program infrastructure and its commitment to continuously improve puts it in an excellent position to sharpen the SBM model to amplify its strengths and overcome the limitations we have outlined in this report.

Thus, there are a number of reasons to believe that SBM is a worthwhile intervention. At the same time, our findings also highlight several program practices that need strengthening and refinement to ensure success. Thus, the next section offers recommendations for practitioners interested in improving their current SBM programs, as well as for policymakers and funders considering supporting such efforts.

Strengthening Impacts: Recommendations for Practice

Our findings indicate that lengthening matches within a school year, extending matches beyond one school year and improving the strength of SBM relationships may all be important in ensuring that youth benefit from the program. Thus, our recommendations focus on strategies for doing so. They include:

Develop strategies to lengthen matches within a school year and extend matches beyond one school year.

Match meetings should begin as early in the school year as possible, and volunteer selection processes should be more rigorous to ensure that volunteers provide at least one school year of mentoring and

potentially more. Creating matches with seniors in high school and college increases the number of youth a program can serve in a given year, but it also increases the likelihood that those matches will last only one school year.

Explore ways to bridge the summer gap.

Matches that are sustained through the summer period, when youth are not in school, appear to become stronger and last longer than matches experiencing a break in their development. How to support summer communication in a way that is safe, seamless and cost effective is an issue that awaits further study.

Provide volunteers with the support and ongoing training they need to create effective mentoring relationships.

Although volunteers' increased accessibility to both school and BBBS program staff may be an advantage of SBM, participating programs did not appear to consistently communicate with volunteers or provide them all with adequate training. Yet, our analyses suggest that training and support may be important in creating strong, long-lasting relationships. How to provide strong support to matches in the school setting is not well understood and may be very different from what has been outlined for CBM matches. Programs should explore different types of supervision beyond monthly "check-ins." For example, they might consider developing a formal system that finds and works with those matches that are struggling.[84] Assessments that programs can use when matching to help predict which relationships will work, and those that can gauge a relationship's progress at different stages, will also be crucial as the field moves forward.

If recruiting high school volunteers, establish clear guidelines on how to work with them.

Close to half of the volunteer Bigs in this study were high school students. Involving high school volunteers is an exciting opportunity for the mentoring field, not only for the youth being served, but also for the high school students themselves (Karcher, 2006). However, we know very little about the potential of these volunteers to develop strong, consistent relationships with young people. It is likely

that these volunteers produce matches that differ from adult-youth relationships in their length, consistency and quality, as well as their impacts (hypotheses we plan to examine in an upcoming report). The types of youth who can best be served by these mentors may also differ (e.g., young volunteers may work best with younger students with less severe needs). Although a few programs noted that they provided additional training to their high school volunteers, these efforts were not consistent across the participating agencies and did not result from national standards on how to screen, match, train and support these younger volunteers. If BBBS SBM programs are to continue using this relatively untapped volunteer resource, they should have clear guidelines about how best to do that.

To help ensure continuity in youth's SBM experience, try to serve many schools within a district.

Children involved in SBM programs tend to change schools frequently. Sustaining a relationship across these moves could help children navigate this very stressful transition. Ideally, this would be done with one program that is implemented in multiple schools, but programs should also consider working together to help sustain children's matches over time.

Select schools that are supportive of the program.

Schools involved in SBM should provide both space and resources, as well as staff support for the mentors. Volunteers in this study who received more support from school staff and reported adequate access to school resources had more successful relationships. Agencies should consider these factors when selecting schools for involvement. Recruiting schools with low commitment to the program (for example, because they are overwhelmed by other school-related concerns) may help the program reach more youth who are in need of mentoring, but those youth may get less from their involvement than youth in schools that are willing to provide substantial support. Agencies should also invest the time and energy needed to maintain strong partnerships with schools that are supportive.

Develop indices of match length that reflect the summer break and are, thus, more sensitive predictors of impacts.

One of the ways that BBBS programs ensure that they are meeting high standards is by examining their progress on benchmarks of program quality that have been linked to the programs' impacts on youth. One of those benchmarks is match length. BBBS currently assesses match length in SBM the same way it does in CBM—by calculating the time that has passed between the beginning and end of the match, regardless of whether that time includes what is often a four-month break from late spring through early fall. The resulting indicator of match length does not have strong predictive value for impacts for those matches that last into a second school year. Our analyses suggest that subtracting the summer months from match length totals may not completely overcome this problem. Calculating match length separately for each school year of involvement is one approach programs can consider, although this approach will likely need refinement as programs seek out the best way to evaluate themselves and report these results to funders, schools and other stakeholders.

These recommendations for strengthening practices, and thus enhancing outcomes, suggest two additional key points:

Funding the development of program infrastructure and supports will be crucial as the field moves forward.

Findings from this study echo previous reports discussing the fact that solid infrastructure is needed to ensure impacts in mentoring. SBM matches need support to develop long-lasting, high-quality relationships that can deliver strong impacts. This support requires time and careful attention from agency staff, which may result in higher costs per match but is likely to come with improved and sustained benefits.

The SBM mentoring field may need to pace its growth to ensure that SBM programs have the support they need to continue their development.

A big emphasis in the field over the past 10 years has been on increasing the number of children served by SBM programs. BBBSA has tried to keep up with this growth by conducting high-quality research to inform the field of productive program practices. Turning this research into uniformly well-implemented practice requires time and money and may come at the expense of some growth. We believe that this kind of adjustment in focus—strengthening SBM programs so that growth is consistent with quality—is a worthwhile investment, particularly for this relatively uncharted model of mentoring.

Concluding Thoughts

This study has provided some of the first definitive information about the benefits of BBBS SBM. Our findings suggest that the program is a worthwhile intervention: Its cost is fairly low and it has the potential to provide a range of academic benefits to youth in a relatively short period of time. The extent to which these benefits carry over into a full second year of the intervention and are sustained after the intervention is over, as well as the conditions under which they might be sustained, are less well understood.

Although impact studies like this one may seem to indicate that the important questions about SBM are now fully answered, this study has only begun to shed light on a host of other questions that are pressing for the field. The diversity of these programs—even within the BBBS family of programs—suggests that we need to understand more about which program practices foster benefits and which impede them. What kind of support is needed by high school mentors? What kind of summer communication contributes to higher-quality and longer-lasting mentor-youth relationships? How should the school-year program be tailored for different age groups of students? Answering these questions will help create SBM programs that reflect the individual needs of participating schools yet ensure that a set of effective program practices is consistently implemented to provide youth with strong, long-lasting benefits.

Endnotes

1 See www.mentoring.org for a more detailed comparison of CBM and SBM programs.

2 Although random assignment evaluations of the Communities in Schools SBM program (Karcher, forthcoming) and SBM programs funded by the US Department of Education are currently underway, neither had published their results at the time this report was completed.

3 At the first follow-up, 7 percent of youth in the treatment group had not yet been matched; at the second follow-up, 5 percent of this group had still not been matched. Additionally, one child in the control group was accidentally matched with a mentor by an agency. These youth were still considered part of the original group to which they were assigned in all impact analyses presented in Chapters IV and V.

4 To make the text more readable, throughout the report we will call the youth in the treatment group "Littles" and the youth in the control group "their peers" or "similar non-mentored peers." The mentors will be referred to as "Bigs."

5 This is not the case for subgroup differences measured at baseline—for example, youth's age or academic performance. Results from analyses assessing whether youth's impacts vary as a function of these baseline differences can be definitively attributed to program participation.

6 Twenty agencies were deemed eligible for involvement in the implementation phase of this study, conducted by BBBSA. Only one of these agencies did not want to be considered for involvement. Eight of the remaining 19 agencies were selected for participation. Two additional agencies were added to this original group for involvement in the impact study.

7 These schools worked with the Colorado and Georgia agencies.

8 Source: National Center for Education Statistics public school data, 2003-2004 school year.

9 Multiple programs within a single school were identified as unique if they met at different times of the day (e.g., an after-school program with all matches meeting in one space, a school-day program allowing mentors to meet with their Littles any time during the school day, a lunch program in which all matches met during lunch). In addition, a handful of programs using college mentors served children after school at the college campus.

10 Agencies were selected for involvement in the study, in part, based on whether their entire SBM program was at least four years old and served a minimum of 150 youth total. However, some individual programs within these agencies had started more recently and served fewer than 150 youth.

11 This is not necessarily the case nationwide. At a national level, 63 percent of agencies keep an SBM waiting list (Hansen, 2002).

12 The CBM data we draw upon is primarily from the BBBS national database. While these data are representative of BBBS matches nationally, our sample is not because this was not the main purpose of the study. Thus, in many cases, we cannot directly compare the demographics of study participants with broader CBM demographics.

13 Forty-one additional youth were determined by the agencies to be "hardship cases." These youth demonstrated extenuating needs for immediate matching with mentors (e.g., had an incarcerated parent and were required to be served in the BBBS Amachi program, which provides mentors to children of prisoners) and were not placed into random assignment but were instead matched with mentors. Although they were assessed at baseline, prior to random assignment, they are not considered study participants, were not surveyed at follow-ups, and are not included in any analyses. Youth identified as hardship cases differed from our study sample at baseline in several ways. Hardship cases demonstrated poorer adjustment and performance in five of our eight non-school-related outcomes (i.e., social acceptance, prosocial behavior, global self-worth, parent-youth relationship quality, and emotional support from peers) and in 17 of our 23 school-related outcomes (i.e., youth- and teacher-reported teacher-student relationship quality, classroom affect, classroom misbehavior, serious school misconduct, college expectations, task orientation, classroom effort, quality of class work, number of assignments completed, school preparedness, skipping school, and overall academic performance, specifically in reading, science, social studies, and oral and written language). Hardship cases were also significantly more likely to be male than those youth who remained in our study sample.

14 Youth in these two groups differed in only one of our 31 outcome measures at baseline: controls were more likely than treatments to report substance use. They did not differ on any demographic variables.

15 Unlike our sample, however, BBBS programs nationwide serve more African American youth than Hispanics.

16 Our survey assessments asked some questions that would be difficult for youth younger than fourth grade to understand. That determined the minimum age for study participation.

17 Fifty-nine percent of all lunches served through the National School Lunch Program are free or reduced-price. This percentage considers only youth who participate in the program (i.e., attend a participating school and eat lunch through the program). It excludes students who take their own lunch to school or attend a school that does not participate in the program.

18 Although we tried to stress the time frame when we administered this set of questions, it is likely that some children interpreted the question as asking whether the event "ever" happened to them rather than whether it happened "in the last six months." If their responses were inflated, however, they were inflated similarly by Littles and their non-mentored peers. Responses on only two stress indicators differed between these groups at baseline: Littles were more likely than their peers to indicate that they knew someone who had been hurt or was ill ($p<0.10$) and that someone had moved into or out of their home ($p<0.05$) in the past six months. Responses to these stress items were accounted for in our impact analyses.

19 Percentages reporting the four components of substance use do not add up to 13 percent because youth could report using more than one substance.

20 Because many youth have more than one teacher, they were asked about their "teachers" rather than any single, specific teacher.

21 Of the 554 volunteers, 23 percent completed their baseline survey more than a month after the beginning of their match. These volunteers are excluded from analyses that ask about previous contact with youth and how prepared they felt before beginning their match because their answers to these questions could be affected by having met recently with youth. Mentors who completed their baseline survey more than a week after beginning their match (41 percent of mentors) were excluded from analyses asking about their most important goals for meeting with their Little. Again, we excluded these mentors because we wanted to assess mentors' goals prior to being matched. Responses to this question by recently matched mentors could be affected by having met the youth and seeing their potential needs.

22 Volunteers were asked on the survey whether they were attending college and, if so, what year of college they were in. Based on their responses, we estimate that up to 10 percent of those identified as college students were attending a graduate or professional school. At least one program specifically targeted volunteers in law school.

23 Agencies were selected for involvement in the study, in part, based on whether they used at least two sources for volunteer recruitment. However, some schools or programs within these agencies did not use more than one.

24 Percentages add up to more than 100 due to rounding.

25 High school Bigs reported having had significantly more recent contact with younger children than either college students or non-student adults.

26 Volunteers with higher levels of confidence did not differ from those with lower confidence levels in the length of their relationships or in youth reports of relationship quality; however, they themselves reported feeling closer to their Little in the first follow-up survey.

27 This association was true even when holding constant the mentor's amount of experience and involvement with youth.

28 School-day programs were less likely to have a designated space for their meetings. While over one third (35 percent) of all programs lacked a consistent designated meeting space for matches, this was true for 61 percent of school-day programs.

29 Overall, 14 percent of after-school programs and eight percent of school-day programs had a strong academic focus, with at least half of the matches' time being spent on academics. This difference between school-day and after-school programs is not statistically significant. However, the difference is significant when comparing the percentage of during- and after-school programs that spent at least 25 percent of match time on academic activities: 19 percent of school-day programs compared to 62 percent of after-school programs—which makes sense given the importance of completing homework after school and the fact that homework is not assigned until the end of a given class or school day.

30 The extent to which mentors reported talking about academic topics or providing tutoring or homework help at the first follow-up was not associated with teacher reports of the Little's overall academic performance at baseline.

31 The five options were to help the Little: make academic improvements; improve relationships with others; improve school behavior; feel good about him/herself; or for the mentor to be a friend to him/her.

32 Reports of relationship quality were similarly positive in the second year: 80 percent of Littles reported feeling at least somewhat close to their Big; 84 percent felt that their relationship was youth-centered; and 85 percent were emotionally engaged in their relationship.

33 When asking mentors about training, we specified "not only group orientation and training but also training received when you first looked into volunteering with BBBS, during your first interview with BBBS, and during contacts with BBBS staff after your match started."

34 Littles' reports of relationship quality were not associated with the amount of training received by their mentors.

35 Liaison presence at match meetings did not depend on the time of day during which the matches met.

36 The combined variables in this table present the "highest" value reported for any of the contributing items. Thus, a mentor who reported talking with BBBS staff once a month one-on-one and weekly with other mentors present would have a combined (i.e., "all contexts combined") score coded as "weekly." We also cre-

ated these variables additively. For example, if mentors reported talking one-on-one with BBBS staff monthly and talking with BBBS staff with other mentors present monthly, they were coded as having communication with BBBS staff "2-3 times a month." This method was similarly applied to the "monthly" and "every week" categories. This increased the combined levels of communication, but only slightly. For example, for total communication: monthly communication rose to 29 percent, 2-3 times a month to 25 percent and weekly to 24 percent.

37 Note that some participating programs have staff present for all SBM match meetings whether during or after school.

38 When describing results from these analyses in Chapters IV and V, we continue to call the youth in the control group, "non-mentored peers." However, because the full group of controls is used as a comparison group for these subgroups of Littles (rather than a subgroup of controls that perfectly match the Littles), the control group is no longer perfectly comparable to the Littles with whom they are being compared.

39 Including all Littles (even those who had not been matched) decreases this average to 4.9 months.

40 Bigs and Littles met less than four times a month on average both because of occasional absences and because meetings did not occur during school holidays. In addition, 19 percent of programs had meeting requirements that were less than once a week.

41 We asked the students, "Is there a special adult (not your parent or guardian) who you often spend time with? A special adult is someone who does a lot of good things for you. For example, someone (a) who you look up to and encourages you to do your best, (b) who really cares about what happens to you, (c) who influences what you do and the choices you make, and (d) who you can talk to about personal problems."

42 In this and all tables that follow, we use bold text to indicate that a comparison is statistically significant.

43 We used a p-value of $p < 0.10$ as our threshold for statistical significance. This p-value means that about one in ten statistical comparisons between Littles and their peers will yield "significant" differences between the two groups simply by chance alone. Conducting more statistical tests increases the number of significant findings yielded that do not represent true differences, but merely result from chance. Appendix B discusses how the number of significant results in our study would change if we adjusted for the number of measures we examined within each outcome area.

44 We defined "school-related" outcomes as those measuring the extent to which the child does what is asked of him or her at school (e.g., completes assignments, pays attention, does not get sent to the principal's office). The measures we defined as "non-school-related" are those that are not directly related to academic performance or to school misconduct that has implications for school punishment. Non-school-related outcomes could occur in school, but they also have broader implications for

the child's out-of-school success, and are not directly tied into a child's academic success in school.

45 Our estimates of impacts are based on the differences in the outcomes of the Littles and their non-mentored peers. However, if teachers needed to spend less time in class with children who did receive mentoring and, in this way, were able to spend more time with the non-mentored children in their class, these non-mentored students could have indirectly benefited from the program. If this were the case, the difference in outcomes at the end of the year would be an underestimate of the true impact of SBM. We hope to examine the hypothesis of this type of "spillover effect" in later research.

46 In the Tierney, Grossman and Resch (1995) study, the measure of grades was self-reported, and the impact was only a two percent increase in the mentored youth compared with the controls. The current SBM study found no statistically significant increase in self-reported grades, but teachers reported that the quality of the Littles' academic performance improved.

47 Combining all outcomes (school- and non-school-related), shows that P/PV's evaluations of BBBS SBM and CBM programs yield the same overall effect size: 0.06.

48 Researchers have calculated effect sizes for many other types of youth interventions. These meta-analyses have tended to yield higher effect sizes than those described here. For example, DuBois et al. (2002) analyzed data from 55 evaluations of a wide variety of mentoring programs and reported effect sizes ranging from 0.10 to 0.22, depending on the type of outcome area assessed—i.e., emotional (0.10), behavioral (0.21), social (0.15), academic (0.11) and employment (0.22). Lauer et al. (2004) conducted a meta-analysis of the effects of after-school and summer programs on reading and math achievement and found that, of the 53 studies they examined, overall effect sizes ranged from 0.06 to 0.13 for reading and from 0.09 to 0.17 for mathematics. Durlak and Weissberg (2007) also conducted a meta-analysis of the effects of after-school programs and found significant impacts on academic performance and grades. The average effect sizes were 0.16 on standardized test scores (which we did not measure), 0.11 on grades (similar to our teacher assessments) and 0.10 on attendance. Comparing our effect sizes with effect sizes calculated in these meta-analyses may be misleading for several reasons. First, many of the studies on which they are based do not use random assignment. In DuBois et al.'s (2002) meta-analysis, mentoring studies using random assignment had effect sizes a third smaller than those using other designs. Second, evaluations do not always report findings for those outcomes that did not yield statistically significant differences between groups. Thus, average effect sizes in meta-analyses are likely to be somewhat inflated in a way that ours are not. Finally, how an outcome is measured can also alter effect sizes (e.g., depending on the formula used, those calculated for "continuous" variables tend to be smaller than those calculated for variables measured using a "yes" (1) or "no" (0) response format).

49 These percentages do not add up to 100 due to rounding.

50 By considering only outcomes that had impacts for the sample as a whole, we could be missing outcomes that are affected only after six months of SBM. However, given that we cannot fully control for how youth characteristics affect the match length variables, examining how the insignificant impacts vary with match length makes us more likely to find spurious longer-match "impacts." Thus, we have taken the more conservative approach and only examine how statistically significant impacts vary with match length.

51 These analyses reflect match length estimates of the "last match" that Littles had at the time of the follow-up assessment, regardless of whether or not that match was currently open. All analyses involving match length in this chapter and Chapter V are based on "last match" estimates. For matches open at the time of the first follow-up ("FU1"), match length = FU1 completion date – match start date. For matches closed at the time of FU1, match length = match close date – match start date. We also conceptualized match length in several alternative ways, including longest match length (length of Little's longest lasting match), and, for only those Littles with a current ongoing match, current match length (length of Little's current open match at the time of each follow-up assessment). We also calculated total match length, in which we summed the lengths of all matches for an individual Little. This approach, however, implies that several short matches are equivalent to a single long match. We chose to present results using the length of the last match because we felt that characteristics of the most recent match would be most likely to influence youth outcomes at the time of each follow-up assessment.

52 As noted, relationship quality, on average, was quite high; the average Little rated his or her relationship as 3.3 on a 4-point scale of "1=not very close at all" to "4=very close." Thus, although we refer to a group of Littles with "lower-quality" relationships, their absolute level of quality is fairly high (i.e., an average of 2.5). Although we assessed several dimensions of relationship quality, we present the findings based only on the indicator of youth-perceived closeness to his/her mentor. These results are very similar to those found for other relationship quality indices.

53 Although we attempted to create the two relationship quality groups based on a median split, the size of the groups differs because the split was made at a cutoff score of 4.0 out of a scale of 1 to 4. In other words, 257 youth out of the 494 who responded reported having the highest level of closeness to their mentor possible, which made up the "very high-quality" group. The "lower-quality" group consisted of youth giving all other responses.

54 All impacts were assessed from measures included in the youth and teacher surveys. Fifty-four percent of youth surveys and 61 percent of teacher surveys in the second school year of the study were completed in late November and December. Thus, although some data collection efforts extended into Winter 2006, we refer to the timing as "late fall."

55 Two percent had met with their first-year mentor and 0.5 percent with a new mentor.

56 The total percentage of treatment youth in our sample who changed schools is likely higher than 32 percent. We were unable to locate an additional 11 percent of our treatment sample (i.e., we could not administer surveys to either the youth or their teachers) at the second follow-up, and the vast majority of those youth had transferred to a new school. Similar rates of school transfers were observed within the control group. Our data indicate that 30 percent of the non-mentored youth had changed schools between the first and second school years of the study, and an additional 14 percent were unable to be located for administration of either the youth or the teacher survey at the second follow-up. Thus, combining our total sample of treatment and control youth, the estimate of movers/transfers for the entire sample is closer to 44 percent.

57 We were surprised by the fact that over two-fifths of transferring Littles received mentoring in the second school year of the study. Littles in most SBM programs rarely continue to see their mentor when they transfer to a new school because often the new school does not have a BBBS SBM program. One of the larger participating agencies served all schools within its district, which helped that agency continue its matches despite some moves by the Littles. Another agency made efforts to establish new programs in schools to which several Littles transferred.

58 This estimate may be slightly shorter than what youth actually experienced. Some matches may have ended in the previous school year and were recorded as ending in the beginning of the second school year. Many mentors (65 percent) told the agencies that they planned to continue meeting with their Little in the second school year; however, when the program started up again, 28 percent of the "continuing" mentors ended their matches within the first month. Thus, although we treat the match as having ended on the official second-year closure date (i.e., we did not backdate these matches), as many as 28 percent of these matches may have effectively ended in the prior May. We asked agencies to "backdate" match closure dates for those matches that they had thought would stay together but ended up closing before meeting in the fall (i.e., not meeting at all in the fall). Most cases were corrected in this way, but some errors may have occurred such that a match recorded as ending in the fall effectively ended in the previous spring.

59 The precise increase in the college expectation score was 0.082, which was statistically significant at a 0.10 level. It translates into a standardized mean difference of 0.11.

60 Given the large proportion of high school mentors in the study, we added a question about a "special older peer" in our second follow-up youth survey. We asked the students, "Is there a special older youth (not your brother or sister) who you often spend time with? A special older youth is someone who does a lot of good things for you. For example someone (a) who you look up to and encourages you to do your best, (b) who really cares about what happens to you, (c) who influences what you do and the choices you make, and (d) who you can talk to about personal problems." Littles were significantly more likely than their non-mentored peers (57 percent vs. 35 percent) to report that they had a special older peer in their lives. Note that "special older peers" were not included in our count of special non-parental adults.

61 Youth were considered "one-school-year Littles" if they were matched with a mentor for any amount of time only during the first school year of the study. Youth were identified as "15-month Littles" if they were matched at any point during both the first and second school years of the study. In addition, nine Littles were matched in only Year Two; these youth were considered 15-month Littles.

62 In fact, analyses found no significant associations between 15-month outcomes and a measure of match length that incorporates summer and "start-up" time. Follow-up analyses examining associations between match length and outcomes excluding these summer and start-up breaks yielded similar results. Because match length was associated with youth outcomes at the end of the first school year, the lack of an association in the second school year supports the need for a more sensitive indicator of match length for matches that span multiple school years.

63 When we tested differences between these two groups of Littles at the end of the first school year, we found that the first-school-year impacts were statistically the same for 19 of the 23 school-related outcomes. Those Littles who ultimately became the "one-school-year Littles" experienced better impacts in the other four outcomes: oral and written language, school preparedness, college expectations and unexcused absences.

64 We were concerned by the possibility that the differences we found between groups of one-school-year and 15-month Littles may reflect the fact that one-school-year Littles were significantly more likely than 15-month Littles to have changed schools before the second follow-up. School transitions are difficult for students and could very well be responsible for some of the differences we saw in the outcomes for these two groups. Thus, we tested whether these patterns existed for only those youth who did not transition, relative to their non-transitioning non-mentored peers (the number of youth who transitioned was too small to analyze this group with confidence). Among youth who remained at the same school for both school years of the study, the pattern of school-related differences endured. In fact, this group of 15-month Littles demonstrated significant benefits relative both to non-transitioning Littles who received no mentoring after the first school year and to their non-transitioning non-mentored peers in their classroom preparedness and task orientation. Non-transitioning 15-month Littles also outperformed non-transitioning one-school-year Littles on several additional school-related outcomes, including classroom affect, classroom misbehavior, teacher-reported relationship quality, overall academic performance, and performance in math, social studies, and reading.

65 As mentioned in Chapter IV, Littles who are able to form very close relationships are likely to differ from other youth in many ways. In fact, those Littles in very high-quality relationships with their mentors were younger than those in lower-quality relationships; they were also more likely to be female. At baseline, those Littles who would later go on to form very high-quality mentoring relationships scored higher on seven self-reported outcome measures: grades, scholastic efficacy, academic self esteem, global self worth, teacher relationship quality, school attitudes and expectations to go to college. These Littles were also more involved in extracurricular activities and were more likely to have a special adult in their lives. Although this group of Littles also scored lower in teacher-reported social acceptance, the other teacher-reported variables were similar for the two groups. These baseline differences are accounted for in analyses conducted for each outcome. For example, when testing for differences in teacher relationship quality at either follow-up, the child's baseline score on this variable is accounted for statistically. However, there could be other differences for which we were unable to control.

66 We were concerned that the negative 15-month outcomes we found for these one-school-year Littles in lower-quality matches may reflect the fact that one-school-year Littles were significantly more likely than 15-month Littles to have changed schools before the second follow-up. It could be that the transition, not their mentoring experience, affected Littles negatively. Thus, we tested whether these patterns for relationship quality existed for only those one-school-year Littles who did not transition, relative to their non-transitioning non-mentored peers. Among youth who remained at the same school for both school years of the study, the pattern of differences between very high-quality and lower-quality matches was almost identical to that seen in the full group of one-school-year Littles. A few differences were no longer statistically significant within this smaller sample of non-transitioning youth (i.e., quality of class work, number of assignments completed, and quality of relationships with parents among youth of lower-quality matches; school preparedness and academic self-esteem among youth of very high-quality matches). However, all associations remained in the same direction as the findings using the full sample of one-school-year Littles.

67 Personal communication with BBBSA, March 2007.

68 BBBS SBM programs typically require an interview, completion of an application, a criminal background check and two or more references. However, they do not typically require the home visit or driving record check required by CBM programs because SBM matches cannot meet at the mentor's home, and mentors are not allowed to transport their Little.

69 Although rare in BBBS SBM programs, one agency continued a weekly, supervised summer program in two of its schools.

70 Open matches were defined as those which mentors indicated (to program staff) were open at the end of the school year and, for that reason, could have lasted through the summer and into the following school year. A handful of mentors knew that they would not be able to continue their match in the following school year, but indicated that they might be able to communicate with their Little over the summer, so their matches were also left open and are included in this discussion.

71 This is likely an overestimate of summer contact. Seventy-eight percent of mentors in open matches responded to the summer survey. It is likely that most of those mentors who did not respond had little to no contact with their Littles over the summer because, for many of them, their match was effectively over. Assuming this group had no contact, only 32 percent of mentors communicated with their Littles at least monthly.

72 Summer contact was considered additively across the six different forms of contact we asked about (i.e., phone, email, letters, postcards, face-to-face at agency events, and face-to-face outside of agency events). For example, matches were said to have "monthly" communication if they communicated using a single method at least once a month or if they communicated in three or more different ways at least once throughout the summer. For example, both of the following scenarios would count as monthly contact: (a) match communicated through letters at least once per month and (b) match wrote a letter once during the summer, wrote a postcard once during the summer, and wrote an email once during the summer. Similarly, contact every two weeks was based on using a single method of communication twice a month or using two different types of communication monthly.

73 Although our findings did indicate that Littles with summer contact were doing better in a few school-related areas compared to youth who were not mentored, we found no evidence that these advantages were above and beyond those evidenced for Littles who had no summer contact. Relative to their non-mentored peers, teachers reported more assertive behavior and school preparedness among Littles who had at least monthly contact with their mentors. These youth were also less likely to start skipping school and had stronger expectations of attending college. Littles with matches lasting into the summer months but who had no summer contact with their mentors fared similarly well: they demonstrated a lower likelihood of starting to skip school and reported feeling more competent at their schoolwork.

74 As noted, one agency implemented an intensive summer program for participants, which even offered continued weekly meetings to approximately half of the Littles from that agency (n=38). We examined associations between match length and impacts among youth only from this agency (N=154 total, including both Littles and their non-mentored peers) because many of the Littles in this group were in matches that, in many ways, were virtually unaffected by the summer break. For these youth, longer matches were associated with better overall academic performance, being less likely to skip school or seriously misbehave in school, and feeling more confident about doing their school work at the second follow-up. These results provide some added support that, when the mentoring relationship continues without major interruption, positive impacts seen after the first school year may be sustained. (Although, as before, we do not know how much of the observed differences are due to uncontrolled-for traits among the youth with longer matches.)

75 We asked agencies to report on the 2005 fiscal year. For six agencies, this covered January to December; for four, July through June. Because none of the agencies had experienced significant changes in their programs in the year prior to our survey, annual program costs should be comparable regardless of when the fiscal year began.

76 These affiliates are members of the Large Agency Alliance, which is comprised of the 30 largest BBBS agencies. All have annual budgets over $1 million and serve more than 1,000 youth a year.

77 Although several of the individual SBM programs within participating agencies were new (i.e., some schools had only recently started a program), all participating agencies had been serving youth through SBM for several years.

78 While the salaries of general agency staff are an important part of cost, there is no clear association between the proportion of total staff costs they comprise and per-youth costs.

79 Some agency costs were distinctly associated with either their CBM or their SBM program, but when staff salary or other costs applied to both the CBM and SBM programs, agencies were asked to estimate the portion devoted to SBM. As a result, part of this similarity likely reflects the difficulty agencies had disentangling some of the shared overhead costs that result from operating both SBM and CBM programs. However, we split the shared costs that were difficult for agencies to divide according to program costs that were already established. For example, if "known" costs were split 40/60 between SBM and CBM, then 40 percent of an unknown cost like fundraising would be attributed to SBM and 60 percent to CBM. Therefore, the effect of unknown costs should mainly reinforce what is already known rather than draw SBM and CBM costs closer together.

80 BBBS requires CBM mentors to submit three references versus the two required for SBM. Additionally, mentors wishing to participate in CBM must have their home environment observed by BBBS staff to ensure that it is a safe place for children. Screening requirements for CBM are also more time-consuming for parents and children. In addition to obtaining parental permission and conducting an in-person interview with the child, which both occur in SBM, children wishing to participate in CBM must also have an in-person interview together with their parent/guardian and an assessment of their home environment.

81 In most cases, these were after-school programs. Only one agency conducted before-school programs, and none of those programs participated in this study.

82 These figures were reported by the agencies on the cost survey. They reflect the carryover percentages for the agency as a whole, not just the youth participating in this study. The average percentage of carryover matches in BBBS SBM at a national level is higher: about 50 percent of BBBS SBM matches nationwide continue into the following school year.

83 The question about "feeling close" was asked in a slightly different way to mentors involved in the current study and those involved in the Herrera et al. national study, which could have contributed to the difference in these percentages. The length of the match when these assessments were made also likely differs, but, if so, reflects the fact that the average SBM match is shorter than the average CBM match. And the national study found similar differences between mentor-reported closeness in SBM and CBM matches.

84 As our study was concluding, BBBS programs began using a system to flag matches that were having difficulties and ensure that they got the additional support they needed. The system is currently being used to support about 40 percent of all BBBS matches (both CBM and SBM) nationwide.

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Appendices

Appendix A
Methodology

This appendix presents details on the selection and administration of the measures used in this study. First, we describe the development of the instruments used in the youth, teacher and mentor surveys. We next describe administration of the baseline, first follow-up and second follow-up surveys for youth, teachers and mentors. A final section briefly describes other survey instruments and data sources used for this report.

Development of the Youth, Teacher and Mentor Surveys

All of the outcome measures used in this study were collected through surveys administered to either the youth or their teachers. We developed these survey instruments based on existing theories of how mentoring works, the outcomes that the literature suggests are most likely to be affected by SBM, and those outcomes of greatest import to schools and policymakers. We reviewed a number of existing attitudinal and behavioral instruments that measured these outcomes and were appropriate for use with youth in fourth through ninth grades and their teachers. In some cases, we also added our own measures. Combining these instruments, we developed drafts of the youth and teacher surveys, which also included several background measures.

We also developed survey instruments to collect information from the mentors on their backgrounds and on match activities, supervision, training and relationship development.

All measures and the survey instruments that resulted from them were selected and developed in close consultation with BBBSA and our technical advisory group of experts in research design, mentoring and statistics: Amanda Bayer, David DuBois, Michael Karcher, Steven Liu and Jean Rhodes. This group contributed to our research design and survey development, provided guidance on our impact analyses and reviewed the study's final report. In addition, all surveys, consent forms and youth assent forms were reviewed, revised and approved by an independent, federally registered Institutional Review Board.

The youth and teacher surveys were piloted with 37 youth (in small groups and by phone) and six teachers (all self-administered) in July 2004. The youth survey required about 35 minutes to administer, and the teacher survey required from 10 to 35 minutes.

Measures Included

Tables A.1 and A.2 at the end of this appendix describe the attitudinal and behavioral measures included in the youth and teacher surveys. The baseline and two follow-up surveys included 12 youth-reported and 19 teacher-reported attitudinal and behavioral outcomes. In particular, we measured outcomes in seven domains hypothesized to change: youth's academic performance (nine measures); attitudes toward school and learning (five); behaviors indicative of engaging in learning (three); school-related misbehavior (four); social skills and relationships (seven); engagement in risky behaviors (two); and overall self worth (one measure). In total, between the teachers and students, we measured 23 school-related and eight out-of-school outcomes.

Table A.3, also at the end of this appendix, describes the measures included in the mentor surveys. These scales measured the volunteer's attitudes about and involvement with youth, their efficacy, or confidence in being a mentor, match characteristics and activities, and program training and support.

For all measures, we used single items or scales that had been previously validated in prior studies, items used in previous P/PV evaluations or items created specifically for this study. After conducting both factor and reliability analyses on these measures, we combined a few previously validated scales in some cases where they were effectively measuring the same outcome.

Reliability

We assessed the reliability, or internal consistency, of each scale for our study sample at baseline, the first follow-up and the second follow-up to assess whether the scales were reliable measures of our outcomes. The reliability of a scale refers to how consistently the items measure an underlying construct. Coefficient alpha (Cronbach, 1951) is a statistic used to assess this "internal reliability." Alpha values range from 0 (indicating no internal consistency; the items have nothing in common) to 1 (indicating perfect consistency among the items). We consider values at or above 0.70 to be acceptable for those scales used as outcomes.

Alpha values were calculated for all scales. Internal consistencies for all outcome measures were acceptable, ranging from 0.70 to 0.89 at the baseline administration, 0.72 to 0.92 at the first follow-up administration, and 0.73 to 0.92 for the second follow-up administration (see Tables A.1 and A.2).[1] Alpha values were also calculated for measures included in the mentor survey. These values ranged from 0.69 to 0.92 (see Table A.3).

Survey Administration

Data were collected using the mentor, youth and teacher survey instruments and several additional surveys (described in the next section) at three time points, as outlined in Table A.4.

The Baseline

Each youth receiving parent permission completed a baseline survey.[2] Baseline surveys were administered by BBBS agency staff hired as on-site researchers as part of the study. Surveys were administered in small groups of three to ten youth at their school. Surveys were read out loud. The entire testing session took about 45 to 60 minutes to complete. Youth were given a small treat (e.g., a McDonald's coupon, pencils) chosen by each on-site researcher.

After the youth completed the baseline survey, their names were sent to the Institute for Survey Research (ISR) at Temple University for random assignment. Assignment was stratified by school, so that in each of the schools studied approximately 50 percent of the youth were assigned to the treatment group and 50 percent were assigned to the control group. In all, 565 youth were assigned to the treatment group and would be offered a mentor in the program, while 575 youth were assigned to the control group and would not be offered a mentor until the end of the 15-month study period. One youth in the control group subsequently withdrew permission for study participation, leaving 574 youth in the control group and a total of 1,139 study participants. All youth assigned to the treatment and control groups at this point, regardless of match status over the course of the study, were considered a part of these groups, followed throughout the study and included in all impact analyses.

Table A.4
Data Collection Timeline

Type of Data	Baseline: Beginning of First School Year (Fall 2004)	First Follow-Up: End of First School Year (Spring 2005)	Second Follow-Up: Late Fall of Second School Year (Late Fall 2005)
Youth Survey	X	X	X
Teacher Survey	X	X	X
Mentor Survey	X	X	X
Summer Survey			X
Program Survey		X	
Principal Survey		X	
Cost Survey			X
School Web Data		X	
Agency Phone Interviews	X		
School and Agency In-Depth Interviews		X	
Match Closure Form	Completed by volunteers whose match ended during the 15-month study period		
Match Length	Start and end dates provided by agency staff throughout the 15-month study period		

Volunteer recruitment began in Spring 2004. Recruited volunteers completed a consent form and a brief baseline survey. Those volunteers attending high school were also required to get parental permission prior to participation. Volunteers were not given an incentive to complete the baseline survey. Ninety-three percent of participating mentors completed a baseline survey. This survey asked about the mentor's background (e.g., demographics, volunteer experience, marital and student status); past experience interacting with and mentoring youth; goals for the mentoring relationship; opinions about youth; BBBS training; and how confident he or she felt about mentoring a young person ("mentor efficacy"). (Measures included in the baseline and follow-up mentor surveys are described in Table A.3.)

Starting in November 2004, the on-site researchers distributed paper surveys with an option for completing the survey online, to the homeroom, ESL, social studies or science teacher of each of the participating youth. Teachers were given a $10 incentive for their participation plus an additional gift worth $5 chosen by the on-site researcher. Follow-up was conducted by ISR and included postcards, faxed reminders, letters and e-mails. Individual personal reminders were also provided by the on-site researchers and school liaisons. Teachers for 1,009 (89 percent) of the youth completed the survey at baseline.

All match meetings in the first year of the study occurred after the youth completed their baseline survey. However, because identifying teachers and ensuring their participation was time consuming, most teachers (88 percent) who completed the baseline survey did not do so until after matches began meeting. Most were completed shortly after the match was made, with only a third (33 percent) completed a month after the start of the match.

First Follow-Up (FU1)

Follow-up youth and teacher surveys were administered by ISR. Starting in April of 2005, ISR tracked and attempted to contact all randomly assigned youth, regardless of whether or not they had moved, transferred to a new school or (for treatments) had been matched. All youth whom they could locate were asked to complete the follow-up survey. In total, 1,014 youth agreed to take the survey in small groups at their schools; 53 others completed the survey by phone—either because they had moved or because they were absent during group administrations. Youth completing the survey at school were given a small treat for the participation; those completing the survey by phone were given a $10 gift card. In all, 1,067 (94 percent) completed the survey.

In April of 2005, youth's teachers were also asked to complete a follow-up survey. Many teachers (51 percent of those who completed a survey) had more than one participating child in their classroom. To make our incentives reflect the heavier burden on the teachers with multiple student participants, teachers were offered $25 for each of the first four surveys they completed; $30 for each of the next five surveys they completed; and $35 for all surveys past the ninth that they completed. Again, teachers who completed their survey(s) were given a gift worth $5 chosen by the on-site researcher. Substantial follow-up (by mail, fax and in-person) was needed. Ultimately, teachers completed surveys for 959 (84 percent) of the youth.[3]

Mentor surveys at eight agencies were administered by the agency; the others (at two agencies) were administered by mail by ISR. Mentors were given the option of completing the survey on paper or online and were given a $10 incentive for their participation. The follow-up survey repeated some questions from the baseline survey, asking about the mentors' experience with and opinions of youth. We also asked mentors about the level and types of training and support they received; the types of activities they engaged in with their Little; the frequency, context and length of these match meetings; and the quality of their relationship with their Little. If the match had ended (or was ending), we also asked mentors to tell us why the match was ending and how they felt about it. Eighty-seven percent of volunteers completed the first follow-up survey.

As matches closed over the course of the school year (and throughout the duration of the study), mentors were also given a brief match closure form to complete. This form contained questions about match activities and the match's closure that were also included in the first and second follow-up mentor surveys. Mentors were given a $10 gift card for completing this form. We received either a match closure form or closure information in the follow-up survey from mentors representing 75 percent of all matches that closed over the course of the study.

Second Follow-Up (FU2)

Starting in mid-November of 2005, students and their current teachers were asked to complete a second follow-up survey.[4] ISR administered surveys to teachers in eight of the ten agencies; the other two agencies administered surveys to teachers in their schools and provided reminders to those teachers who failed to respond. In all, 968 youth (85 percent) and teachers for 920 youth (81 percent) completed the final survey.[5] A total of 94 percent of the youth surveys

at the second follow-up were completed in person at the youth's school, and six percent were completed by phone. Incentives for both the teacher and youth surveys were the same as those used for the first follow-up survey.

Mentor surveys were also administered at this time. Again, surveys for mentors at two agencies were administered by ISR; those for the remaining agencies were administered by BBBS program staff. Mentors had the option of completing the survey on paper or online and received a $10 incentive for their participation. The second follow-up survey included all of the questions asked in the first follow-up survey, and also included questions about potential mentor benefits from participation; challenges experienced; the importance of different types of support; and, for those who met with their Little in the context of a larger group (for example, had their meetings in the school cafeteria, where other matches were also meeting), how this contributed to their experience. Eighty-two percent of mentors completed the second follow-up survey.

Other Survey Instruments and Data Sources

In addition to the youth, teacher and mentor surveys, we used several other instruments and approaches to collect data for this study. This section describes these data sources.

Agency Interviews

At the first follow-up, we visited each participating agency, interviewing staff about their experiences running the programs and working with involved schools. We also visited two schools working with each agency and met with the school liaison, principal and involved teachers. Our qualitative interviews focused on understanding what the stakeholders believed to be the program's benefits and challenges. In addition, we explored whether there were potential classroom and school-level effects of involvement in the program. When possible, we observed match meetings. These data were not used in any quantitative analyses in the current study; rather, they helped us understand the context in which these matches developed.

Program Survey

At the first follow-up, BBBS staff working with each of the 71 involved schools completed a survey asking about program structure and supervision, match activities, liaison involvement and other school and program characteristics. Data from this survey were used in Chapters II and III to describe several program characteristics (e.g., academic focus, recruitment

sources); however, when possible, we relied on mentor rather than program staff reports. Program surveys were self-administered. Program staff received $25 for their participation.

Principal Survey

Also at the first follow-up, principals from each of the 71 participating schools were given a survey that asked about the demographics of their student body and their experiences with the BBBS program. Fifty-one (72 percent) of the principals completed a survey. Surveys were sent to principals by mail and were self-administered. Principals received $40 for their assistance.

Web Data

To supplement the information reported in the principal survey, we conducted additional web research. This research provided more detailed information on each school, including standardized test scores, student-to-teacher ratios (see http://www.schoolmatters.com; http://www.greatschools.net) and Title I status (see http://nces.ed.gov/ccd/schoolsearch/).

Summer Survey

In fall of the second school year of the study, mentors in all ongoing matches were given a brief survey to assess whether and how they had communicated with their Littles over the summer, to what extent BBBS supported these efforts, and whether they felt this communication affected their relationship with their Littles. Most surveys were administered by the agency; however, for cases in which the agency no longer had contact with the mentor, P/PV mailed the survey directly to the mentor for self-administration. Seventy-eight percent of mentors in ongoing matches completed the summer survey.

Cost Survey

After the second follow-up, we administered a cost survey to each of the 10 participating agencies asking about various costs associated with implementing their SBM and CBM programs. In most cases, the survey was completed by staff in the agency's fiscal department, with input from individual program staff on the proportion of their time spent on CBM and SBM tasks.

Administration of each survey was followed by a phone call to the staff member who completed the survey to ensure that we understood the intent of his or her responses. Agencies received incentives ranging from $100 to $250 for their participation, based on the size of the agency (larger agencies from whom we asked the most time received larger incentives).

Table A.1

Information and Reliability for Youth-Reported Measures[a]

Youth Survey Outcomes	Title of Measure	Author(s) of Measure	
School-Related Outcomes			
Academic Self-Esteem[b]	Self-Esteem Questionnaire (SEQ)	DuBois, Felner, Brand, Phillips and Lease (1996)	
Connectedness to School[c]	School Connectedness; School Liking	Karcher (2003), plus three items adapted from a scale tested by Jacque Eccles[d]	
Grades			
College Expectations		Dynarski et al. (2001); adapted by Vandell (2003)	
Scholastic Efficacy	Adapted from the Manual for the Self-Perception Profile for Children	Harter (1985)	
Skipping School			
Teacher Relationship Quality[f]	Teacher Connectedness; Teacher Relationship Quality	Karcher (2003), plus 5 additional items	
Non-School-Related Outcomes			
Misconduct Outside of School[g]		Brown, Clasen and Eicher (1986); adapted by Posner and Vandell (1994)	
Substance Use[g] (i.e., alcohol, tobacco, marijuana, other drugs)		Policy Studies Association (2003)	
Relationship with Parent	Inventory of Parent and Peer Attachment (IPPA)[i]	Armsden and Greenberg (1987)	
Sense of Emotional Support from Peers (Peer Self Esteem Enhancement)		Berndt and Perry (1986)	
Global Self Worth	Self-Esteem Questionnaire (SEQ)	DuBois, Felner, Brand, Phillips and Lease (1996)	
Match-Related Measures			
Youth-Centered Relationship		Grossman and Johnson (1999)	
Youth's Emotional Engagement		Grossman and Johnson (1999)	
Relationship Closeness			

Notes:

a   We were unable to find source information for some measures; others were developed specifically for this study. These measures do not have titles or authors listed in this table.

b   The short form was used; this form excludes four items from the original measure.

c   Eccles' three-item School Liking scale was combined with Karcher's six-item School Connectedness scale to create the nine-item measure used in the current study.

d   Eccles' three-item School Liking scale is adapted from a scale tested with middle-school youth.

e   For outcomes at the first and second follow-up, youth's response was coded to reflect initiation since baseline.

f   Teacher Relationship Quality consists of the six items from Teacher Connectedness (Karcher, 2003) and an additional five items.

	Sample Items	Number of Items	Alphas		
			Baseline	Year 1	Year 2
	I am as good a student as I would like to be.	4	0.76	0.78	0.81
	Doing well in school is important to me. In general, I like school a lot.	9	0.84	0.84	0.85
	Which of the following best describes the grades you got on your last report card? Mostly...	1	--	--	--
	How sure are you that you will go to college?	2	0.88	0.87	0.91
	I do very well at my class work.	6	0.70	0.72	0.73
	In the last three months, have you skipped school without permission?[e]	1	--	--	--
	I always try hard to earn my teachers' trust. My teachers this year look out for me and help me.	11	0.82	0.82	0.85
	In the last three months, have you taken something on purpose that didn't belong to you?[h]	10	--	--	--
	In the last three months, have you drunk alcohol without your parents knowing?[h]	4	--	--	--
	My parents accept me as I am. My parents help me to talk about my difficulties.	16	0.89	0.91	0.92
	Do your friends make you feel that your ideas and opinions are important and valuable?	4	0.76	0.79	0.80
	I like being just the way I am.	8	0.76	0.80	0.83
	My mentor is always interested in what I want to do. My mentor thinks of fun and interesting things to do.	5	n/a	0.74	0.80
	When I'm with my mentor, I feel special. When I'm with my mentor, I feel happy.	8	n/a	0.84	0.87
	How close do you feel to your mentor?	1	n/a	--	--

g   This measure was converted into a dichotomous variable (i.e., 0=No; 1=Yes) indicating whether the child had ever engaged in any of the behaviors indicated.

h   Although the questions we asked youth specified "in the last three months…," youth could also indicate that they had exhibited the behavior, but not in the last three months. The outcome measure we used in our analyses examined whether or not respondents had "ever" engaged in the behavior.

i   Parent Trust and Parent Communication subscales were combined.

--   Single item or dichotomized measure.

Table A.2

Information and Reliability for Teacher-Reported Measures[a]

Teacher Survey Outcomes	Title of Measure	Author(s) of Measure	
School-Related Outcomes			
Grades: • Written and Oral Language • Math • Reading • Social Studies • Science • Overall		Pierce, Hamm and Vandell (1999)	
Number of Assignments Completed (i.e., homework, in-class)			
Quality of Class Work (i.e., completeness, neatness, correctness)			
Unexcused Absences			
Classroom Effort	Research Assessment Package for Schools-Teachers (RAPS-T)	Institute for Research and Reform in Education (IRRE; 1998)	
Task Orientation[b]	Teacher-Child Rating Scale (TCRS)	Hightower et al. (1986)	
School Preparedness			
Classroom Affect		Herrera (2004)	
Is Difficult in Class (Classroom Misbehavior)[b,c]	Teacher-Child Rating Scale (TCRS)	Hightower et al. (1986), plus 5 additional items	
Engaging in Serious School Misconduct[d] (i.e., principal's office referral, suspension, physical fighting)		Herrera (2004)	
Teacher-Student Relationship Quality[b,e]	Student-Teacher Relationship Scale (STRS)—short version	Pianta (1991)	
Non-School-Related Outcomes			
Social Acceptance	Adapted from the Self-Perception Profile for Children	Harter (1985)	
Assertiveness[b]	Teacher-Child Rating Scale (TCRS)	Hightower et al. (1986)	
Pro social Behavior	The Child Behavior Scale	Ladd and Profilit (1996)	

Notes:

a   We were unable to find source information for some measures; others were developed specifically for this study. These measures do not have titles or authors listed in this table.

b   Copyright does not permit reporting items.

c   Child's Contribution to Classroom and the Behavior Control subscale of the TCRS were combined to create the 13-item measure used in the current study.

d   This measure was converted into a dichotomous variable (i.e., 0=No; 1=Yes) indicating whether the child had engaged in any of the behaviors indicated in the previous four weeks.

e   Close with Teacher and Conflict with Teacher subscales were combined.

--   Single item or dichotomized measure.

	Sample Items	Number of Items	Alphas		
			Baseline	**Year 1**	**Year 2**
	Please rate this child's academic performance in these areas… (1=Below grade level; 2=Needs improvement; 3=Satisfactory; 4=Very good; 5=Excellent)	6 single items	--	--	--
	Please rate this child's class work in…the number of homework assignments turned in, in the last 4 weeks. (1=Well below average; 2=Below average; 3=Average; 4=Above average; 5=Well above average)	2	0.93	0.94	0.94
	Please rate this child's class work in…completeness of work in the last 4 weeks.	3	0.88	0.90	0.89
	In the last four weeks in your classroom, how many times has this child been absent without an excuse?	1	--	--	--
	This child works hard in my class.	6	0.90	0.90	0.89
	(The TCRS is copyrighted.)	8	0.93	0.93	0.93
	This child displays an age-appropriate attention span.	4	0.82	0.85	0.84
	In my class, this child appears angry.	3	0.77	0.77	0.76
	(The TCRS is copyrighted.)	13	0.94	0.94	0.93
	In the last four weeks in your classroom, how many times has the child been sent to the principal's office for misbehavior?	3	--	--	--
	(The STRS is copyrighted.)	15	0.90	0.91	0.89
	This child is popular with others his/her age.	3	0.89	0.89	0.87
	(The TCRS is copyrighted.)	8	0.83	0.82	0.85
	This child compromises in conflicts with classmates.	8	0.92	0.92	0.92

Table A.3
Information and Reliability for Mentor-Reported Measures[a]

Mentor Survey Measures	Title of Measure	Author(s) of Measure	
Attitudes about Youth			
Involvement with Youth			
Self-Efficacy	Mentor Self-Efficacy Scale	Parra, DuBois, Neville and Pugh-Lilly (2002)	
Program Quality		Karcher, Nakkula and Harris (2005)	
Staff Support		Karcher (2007c)	
Resources and Space		Karcher (2007c)	
Missed Match Time (i.e., due to: school activity, something on your part, something on Little's part, other reason)			
Relationship Closeness	Single item from Relationship Quality	Karcher, Nakkula and Harris (2005)	
Match Activities	Match Engagement in Activities	Karcher (2007b)	
Communication with BBBS Staff (i.e., with other mentors present, one-on-one, with Little present)			
Communication with School Staff (i.e., Little's teacher, other school staff)			
Helpfulness of BBBS Staff			
Helpfulness of School Staff (i.e., Little's teacher, prinicpal, school liaison, other school staff)			
Group Training			
Pre-Match Individual Training			
Post-Match Individual Training			

Notes:

a   We were unable to find source information for some measures; others were
    developed specifically for this study. These measures do not have titles or
    authors listed in this table.

-- Single item measure or sum score.

n/a The measure was not assessed at this time point.

	Sample Items	Number of Items	Alphas		
			Baseline	Year 1	Year 2
	How many kids in your community are trouble makers?	7	0.77	0.83	0.83
	Have you volunteered for Boy Scouts or Girl Scouts or some similar program?	Sum of 8 items	--	--	--
	How confident are you in your ability to be a role model to a mentee? How confident are you in your ability to help a mentee with school work?	19	0.92	n/a	n/a
	The training I have received helps me to be a better mentor. I get regular guidance/supervision from staff.	7	n/a	0.87	0.89
	BBBS staff seem truly concerned about how well our match is going.	4	n/a	0.82	0.81
	At my school, I have easy access to resources I can use with my Little (e.g., college information).	3	n/a	0.83	0.69
	Total number of missed meetings over course of school year	Sum of 4 items	n/a	--	--
	I feel close with my Little.	1	n/a	--	--
	About how much of your time with your Little did you spend engaging in… • Tutoring/homework (helped with reading, library, computer work, etc.)? • Indoor games (board games, cards, chess, puzzles, computer games, etc.)?	17	n/a	--	--
	How often did you talk one-on-one with BBBS staff for support or advice?	Highest of 3 items	n/a	--	--
	How often did you talk to your Little's teacher?	Highest of 2 items	n/a	--	--
	How helpful have BBBS staff been with your match?	1	n/a	--	--
	How helpful has your school liaison been with your match?	4	n/a	0.78	0.79
	How much time was spent in group training?	1	n/a	--	--
	How much time was spent in individual training before the start of your match?	1	n/a	--	--
	How much time was spent in individual training after the start of your match?	1	n/a	--	--

Appendix B
Impact Analyses

To assess the impact of BBBS SBM on program participants, we conducted a set of intent-to-treat analyses. We describe these analyses here for both the full sample as well as for subgroups of youth by gender, race or ethnicity, grade in school and academic standing. In addition, we describe how we addressed issues of missing data for both covariates and outcome measures. Lastly, we present a strategy to address the risks associated with multiple hypothesis testing in this study and its implications for our impact findings.

Intent-to-Treat Analysis

The intent-to-treat analysis examined how offering youth the opportunity of program involvement affected the attitudinal and behavioral measures outlined in Appendix A. Recruited youth were randomly assigned to either the treatment group (who could be offered a mentor) or to the control group (who were told they could receive a mentor in January of the following year). Approximately half the applicants in each school were assigned to the treatment group and half to the control group. The intent-to-treat impact is how the average outcomes of youth assigned to the treatment group differed from the average outcomes of the control youth.

While impacts could have been estimated simply by examining differences between average scores on outcome measures for the treatment and control groups at our follow-up assessments, we obtained more precise impact estimates by estimating them using the following regression model:

$$y_{ij} = \beta_0 + \beta_1 Pre_{ij} + \beta_2 T_{ij} + \beta_k X_{ijk} + \mu_j + \varepsilon_{ij} \quad (1)$$

for $i = 1, \ldots,$ n individuals per school
      $j = 1, \ldots,$ J schools
      $k = 1, \ldots,$ K baseline individual level covariates

where y_{ij} is the outcome of interest for student i in school j at follow-up

   β_0 is the intercept

   β_1 is the "fixed effect" estimate of the association between the outcome variable at baseline and the outcome variable at follow-up for student i in school j

   Pre_{ij} is the baseline score of the outcome variable

   β_2 is the "fixed effect" estimate of the treatment effect

   T_{ij} is an indicator variable equal to 1 if student i in school j is assigned to the treatment group

   β_k is the "fixed effect" estimate of the vector of coefficients for baseline student-level covariates

   X_{ijk} is a vector of baseline student-level covariates

   μ_j is the school-level error component

   ε_{ij} is the individual-level error component

Because the youth in our sample are grouped by school and youth in a given school are likely to be exposed to similar environments, we have included a school-specific error term. We account for this clustering by estimating a two-level random-intercept model.

β_2 is a "fixed effect" estimate that addresses the question: What is the program effect of SBM for the average student in the sample? This approach is taken because the agencies chosen for the study were not a randomly chosen set of BBBS agencies. Instead, they were selected because they can provide a "fair test" of the benefits of SBM. Thus, statistically, we cannot generalize the impacts we estimate here to all BBBS agencies. Such generalizations must be done judgmentally.

In cases where the outcome is measured dichotomously, we used logistic regression analyses within the same random-intercept modeling framework described above. The dependent variable, y_{ij}, takes the form of the log odds of observing the outcome:

$$y_{ij} = \log\left(\frac{\Phi_{ij}}{1-\Phi_{ij}}\right) \quad (2)$$

where Φ_{ij} is the probability of observing the outcome and $1-\Phi_{ij}$ is the probability of not observing the outcome.

In addition to the two-level random-intercept model, we also tested two additional random effects models: (1) a three-level random-intercept model in which youth are clustered within schools, and schools are clustered within BBBS agencies;[6] and (2) a two-level random-intercept and slope model in which both the intercept and treatment "dummy" (i.e., dichotomous variable) were allowed to vary randomly across schools.[7] We chose to report impact findings from the two-level random-intercept model in this report because

alternative models yielded little additional information. Significant impacts found at both the first follow-up (FU1) and the second follow-up (FU2) continued to exist in both alternative sets of random effects analyses.[8]

Intent-to-Treat Subgroup Analysis

We also tested whether the BBBS SBM program had different effects on different types of youth, based on their baseline characteristics (for example, elementary-school-age youth or middle/high-school-age youth; boys or girls). To do this, we included interaction terms in equation (1) between treatment status and individual level covariates:

$$y_{ij} = \beta_0 + \beta_1 \text{Pre}_{ij} + \beta_2 T_{ij} + \beta_k X_{ijk} + \gamma_k T_{ij} X_{ijk} + \mu_j + \varepsilon_{ij} \ (3)$$

where $T_{ij} X_{ijk}$ is the interaction of the treatment dummy with one of the two possible subgroup dummy variables, such as starting the program as a middle school student, or being a girl. All the subgroups we examine have only two categories (girl or boy, elementary or middle/high school).

β_2 is the "fixed effect" estimate of the average treatment effect on the group chosen as the reference category within a particular subgroup

γ_k is the "fixed effect" estimate of the *differential* treatment effect between the two categories within a particular subgroup

Thus, for example, if the interaction is between treatment status and being female, β_2 would be the impact on male treatments and $\beta_2 + \gamma_f$ would be the estimated "fixed effect" impact on female treatments.

Covariates

As noted, covariates were included in our analysis models to reduce variance and enable us to obtain more precise estimates of the program's impacts. We chose variables that were theoretically associated with the outcomes. They included the baseline value of the outcome measure, youth's age, minority status, gender, number of youth-reported stressful life events in the six months prior to the baseline interview, whether the child qualifies for free or reduced-price lunch,[9] and the child's extracurricular activity involvement. Another covariate, youth's baseline substance use, was also included in all of our models because treatment and control youth differed on this measure at baseline (specifically alcohol use) at the p<0.10 level. Control youth were

slightly more likely than those in the treatment group to have drunk alcohol prior to baseline.

Treatments and controls did not statistically differ on any other baseline outcome or demographic measures at the p<0.10 level. All group differences are summarized in Table B.1.

Missing Data

To keep the sample as complete as possible, researchers have developed many different ways to handle items for which a given respondent did not complete the question (i.e., "missing data"). In this section we describe the strategy we used for dealing with missing data in our covariate measures. We then discuss the implications of missing data for our outcome measures.

Covariates

For those few covariates that were missing data for more than 10 percent of the sample, we chose to substitute the mean value of that variable for all the children whose value was missing. The way regression coefficients are calculated ensures that the estimated coefficient on that variable is no different from the estimate that would have been calculated had the individual's data been omitted entirely. Most variables with missing data were missing data for less than 10 percent of the sample, with the exception of free or reduced-price lunch. Many children were unable to answer whether or not they received free or reduced-price lunch on their surveys. For these children (approximately 30 percent), we used their teachers' responses, as we had asked teachers the same question about each child. Because we still had 11 percent missing after the teacher substitution, we substituted the youth-reported mean for the remaining missing values. No mean substitutions were made for variables missing data for less than 10 percent of the sample.

Outcome Measures

Having missing data for outcome measures poses a problem that is more serious because it requires omitting sample members from the impact analysis, which can produce selection bias if this attrition is substantial and non-random. At the first follow-up, we experienced only a 6 percent attrition rate among youth (5.8 percent among the treatment group and 6.8 percent among the control group), resulting in an analysis sample of 1,067 youth. Although we would expect the "attriters" (i.e., those who were no longer in the sample for these analyses) and the non-attriters to significantly differ by chance (p<0.15) on only six of the 37 baseline char-

Table B.1
Equivalence in Baseline Means between Treatment (n=565) and Control Groups (n=574)

Baseline Characteristic	Control Mean	Treatment Mean	Group Difference (Control - Treatment)	Statistical Significance (p-value)
Demographics				
Age	11.23	11.24	−0.02[a]	0.86
Minority (%)	60.80	64.42	−3.62	0.21
Female (%)	54.36	53.98	0.38	0.90
Risk Indicators				
Stress	4.41	4.64	−0.22[a]	0.14
Involvement in Extracurricular Activities	2.43	2.40	0.03	0.73
Special Adult (%)	63.04	58.21	4.83	0.10
School-Related Outcomes				
GPA (youth-reported grades)	5.63	5.75	−0.13[a]	0.29
Math Performance	2.35	2.44	−0.10[a]	0.23
Science Performance	2.57	2.65	−0.08	0.25
Social Studies Performance	2.61	2.70	−0.08[a]	0.25
Reading Performance	2.42	2.52	−0.10	0.19
Written and Oral Language Performance	2.53	2.61	−0.08	0.18
Overall Academic Performance	2.48	2.56	−0.08	0.25
Quality of Work	2.83	2.84	−0.01	0.74
Number of Assignments Completed	2.96	3.00	−0.04	0.56
Scholastic Efficacy	2.75	2.80	−0.05	0.16
Academic Self-Esteem	3.21	3.24	−0.03	0.49
College Expectations	3.23	3.30	−0.07	0.21
Connectedness to School	3.13	3.19	−0.06	0.11
Positive Classroom Affect	3.21	3.24	−0.03	0.50
Classroom Effort	2.77	2.76	0.01	0.89
Task Orientation	3.00	3.01	−0.01	0.80
School Preparedness	3.30	3.28	0.03[a]	0.65
Teacher-Student Relationship Quality	3.81	3.83	−0.02	0.60
Teacher-Student Relationship Quality (youth-report)	3.31	3.34	−0.03	0.33
Engaging in Serious School Misconduct (%)	13.25	10.75	2.50	0.23
Skipping School (%)[b]	9.29	7.80	1.49	0.38
Absence without an Excuse (%)	12.22	11.63	0.59	0.78
Is Difficult in Class	2.23	2.21	0.02	0.65
Non-School-Related Outcomes				
Sense of Emotional Support from Peers	3.00	3.03	−0.03	0.58
Social Acceptance	2.76	2.81	−0.05	0.22
Prosocial Behavior	3.13	3.11	0.02	0.64
Relationship with Parent	3.22	3.21	0.01	0.72
Assertiveness	3.33	3.34	−0.01	0.75
Global Self-Worth	3.18	3.19	−0.01	0.79
Misconduct Outside of School (%)	87.19	86.19	1.00	0.62
Substance Use (%)	**15.47**	**11.17**	**4.30**	**0.03**

Notes:

a   This difference between Column 1 and Column 2 is accurate and due to rounding.

b   The "skipping school" outcome variable used throughout the report reflects whether or not respondents started skipping school since the baseline assessment. Because this table reflects group means at baseline only, we report the proportion of each group who had reported ever skipping school at baseline.

Table B.2

Baseline Differences between Youth Attriters and Non-Attriters at FU1 And FU2

Baseline Characteristic	Baseline Group Difference (FU1 Attriter - FU1 Non-Attriter)	Baseline Group Difference (FU2 Attriter - FU2 Non-Attriter)
Demographics		
Age	0.83***	0.53***
Minority (%)	8.79+	11.66***
Female (%)	−13.34**	
Risk Indicators		
Stress	0.52*	0.70***
Special Adult (%)		8.25**
School-Related Outcomes		
GPA (youth-reported grades)	−0.64**	
Task Orientation	−0.55***	
Positive Classroom Affect	−0.33***	−0.11*
Classroom Effort	−0.45***	
Math Performance	−0.47**	
Science Performance	−0.26+	
Social Studies Performance	−0.34**	
Reading Performance	−0.32*	0.18*
Written and Oral Language Performance	−0.37***	0.14+
Overall Academic Performance	−0.39**	
Is Difficult in Class	0.42***	0.18**
Quality of Work	−0.51***	
Number of Completed Assignments	−0.57***	−0.18**
School Preparedness	−0.61***	
College Expectations	−0.18+	
Teacher-Student Relationship Quality	−0.43***	−0.19**
Teacher-Student Relationship Quality (youth-report)		−0.07+
Engaging in Serious School Misconduct (%)	8.84*	9.67***
Skipping School (%)[a]	7.88**	5.07**
Absence without an Excuse (%)	7.73*	4.36+
Non-School-Related Outcomes		
Assertiveness	−0.18*	
Prosocial Behavior	−0.33***	−0.14***
Social Acceptance	−0.26***	
Substance Use (%)	9.50**	5.89**

Notes:

n FU1 Youth Attriters = 72; Non-Attriters = 1067

n FU2 Youth Attriters = 171; Non-Attriters = 968

a   The "skipping school" outcome variable used throughout the report reflects whether or not respondents started skipping school since the baseline assessment. Because this table reflects differences in group means at baseline only, we calculated these differences based on the proportion of each group who had reported ever skipping school at baseline.

***   The true impact is not equal to zero at a 0.01 level of significance.

**   The true impact is not equal to zero at a 0.05 level of significance.

*   The true impact is not equal to zero at a 0.10 level of significance.

\+   The true impact is not equal to zero at a 0.15 level of significance.

acteristics we examined, our FU1 attrition analyses indicate that the two groups differed on 27 characteristics. These results suggest that FU1 youth attriters were significantly needier at baseline than non-attriters.[10] In addition, we collected data from 968 youth at the second follow-up, yielding a 15 percent attrition rate (12.7% of the treatment youth and 17.3% of the control youth). Results from our FU2 attrition analyses indicate that the two groups differed on 16 characteristics at baseline and that the attriters again represent a more needy group of youth.[11] Results from both sets of analyses are summarized in Table B.2.

Because the outcomes we examined relied not only on youth-reported data but on data reported by teachers as well, we also examined attrition in teacher-reported data. We received baseline surveys from teachers for 1,009 (89 percent) of the youth participating in our study. Teachers for 886 of those 1,009 youth completed the first follow-up survey at the end of the first school year,[12] resulting in an 11.7 percent and 12.7 percent attrition among control and treatment youth, respectively. Teacher attrition analyses yielded a pattern of results similar to those examining youth attrition: at baseline, youth of teachers who did not complete the first follow-up survey were experiencing more difficulties than those whose teachers completed their follow-up surveys.[13] By the second follow-up, 18.6 percent of youth whose teachers in the previous school year had submitted baseline surveys did not have a follow-up teacher survey completed (19.6 percent taught control youth; 17.7 percent taught treatment youth), yielding an analysis sample of 821 youth.[14, 15] Again, attrition analyses evidenced the same pattern in which youth of teachers who did not complete a follow-up survey showed higher levels of neediness than those whose teachers completed FU2 surveys.[16] These significant differences in baseline characteristics are presented in Table B.3.

These attrition results suggest that our impact analyses may omit the neediest group of youth served by the participating BBBS SBM agencies. As such, we cannot be certain that the impact findings reported in the text generalize to youth with characteristics similar to those whom we were unable to survey later in the study.

Differential Attrition

Attrition is not only a concern for our ability to generalize our findings to the general population. When we experience differential attrition—that is, when the types of youth who attrited from the control group differ from those who attrited from the treatment group—it can also be of concern for accurately interpreting our impact findings. For

instance, it is possible that youth who remain in the study (the non-attriters) from the control group may represent a less needy group of youth from those who remained in the study within the treatment group. If this is the case, we may incorrectly attribute any positive (or negative) changes we see among participants to their involvement in the SBM program, when the change is actually due to inherent differences between the treatment and control groups among the individuals who continued to participate in the study. As such, while the impact analyses must be based on only the respondents for whom we have data, we wanted to ensure that there was no differential attrition between treatments and controls that could create selection bias in our impact estimates. In other words, we conducted analyses to confirm that the treatment and control groups from our analysis sample remained comparable even after experiencing attrition over the course of the study.

To test the comparability of the treatment and control samples we use in our impact analyses, we compared the baseline levels in outcomes for treatment and control youth among those who remained in the study at either FU1 or FU2. Among non-attriters at both the first and second follow-up assessments, we found no baseline differences between the treatments and controls outside the range of normal chance variation ($p<0.15$).[17] Similar results were found for sample members based on teacher reports at both follow-ups.[18] Taken together, our attrition analyses suggest that, although our impact analyses may omit those youth who appeared the neediest at baseline, we do not suffer from selection bias that would lead to our falsely accepting or rejecting the hypothesis that the program has no effect on participants.

Multiple Hypothesis Testing

All statistical analysis runs the risk of yielding a false positive result (incorrectly determining that the program works when it really does not—known as a "Type 1 error"). The more statistical tests one conducts, the greater the probability of finding, purely by chance, a statistically significant impact estimate when in reality there is no true impact. For example, if we test 10 independent and normally distributed impact estimates, we are likely to find at least one that is statistically significant at the $p<0.10$ level, simply by chance. One common strategy for adjusting significance levels for multiple hypothesis testing is the Bonferroni adjustment, which establishes a statistical significance criterion by dividing the standard used in the study (e.g., $p<0.10$) by the total number of tests being performed. This strategy, however, is

Table B.3

Baseline Differences between Teacher Attriters and Non-Attriters at FU1 and FU2

Baseline Characteristic	Baseline Group Difference (FU1 Attriter - FU1 Non-Attriter)	Baseline Group Difference (FU2 Attriter - FU2 Non-Attriter)
Demographics		
Age	0.50**	0.26*
Minority (%)	8.99*	11.68***
Female (%)	−20.52***	
Risk Indicators		
Stress	0.38+	0.56***
Special Adult (%)		5.86+
School-Related Outcomes		
GPA (youth-reported grades)	−0.78***	
Math Performance	−0.22*	−0.17*
Science Performance	−0.24**	
Written and Oral Language Performance	−0.15+	
Overall Academic Performance	−0.27**	
Quality of Work	−0.30***	−0.25***
Number of Assignments Completed	−0.33***	−0.30***
School Preparedness	−0.36***	−0.22***
Academic Self-Esteem	−0.14**	
Teacher-Student Relationship Quality	−0.30***	−0.16****
Teacher-Student Relationship Quality (youth-report)	−0.09*	−0.11**
Connectedness to School	−0.13**	
Task Orientation	−0.37***	−0.20**
Positive Classroom Affect	−0.15**	−0.09*
Classroom Effort	−0.29***	−0.19***
Is Difficult in Class	0.27***	0.20***
Engaging in Serious School Misconduct (%)	10.99***	4.71*
Skipping School (%)[a]	11.00***	
Non-School-Related Outcomes		
Sense of Emotional Support from Peers		−0.10+
Social Acceptance	−0.14**	
Prosocial Behavior	−0.19***	−0.14***
Misconduct Outside of School (%)		4.18+
Substance Use (%)	10.82***	

Notes:

n FU1 Teacher Attriters = 123; Non-Attriters = 886

n FU2 Teacher Attriters = 188; Non-Attriters = 821

a   The "skipping school" outcome variable used throughout the report reflects whether or not respondents started skipping school since the baseline assessment. Because this table reflects differences in group means at baseline only, we calculated these differences based on the proportion of each group who had reported ever skipping school at baseline.

***   The true impact is not equal to zero at a 0.01 level of significance.

**   The true impact is not equal to zero at a 0.05 level of significance.

*   The true impact is not equal to zero at a 0.10 level of significance.

+   The true impact is not equal to zero at a 0.15 level of significance.

Table B.4

Statistical Significance of BBBS SBM Impacts at the End of the First School Year Using the Benjamini-Hochberg Adjustment: School-Related Outcomes

(all outcomes are scales from 1=Low to 5=High, unless another range is stated)

School-Related Outcomes (as reported by teacher, unless stated)	Effect Size (Standardized Mean Difference)	Estimated p-value	B-H Criterion	Adjusted Significance
Academic Performance				
Number of Assignments Completed	**0.14**	**0.01**	**0.01**	*
Quality of Class Work	**0.12**	**0.01**	**0.02**	*
Overall Academic Performance	0.09	0.04	0.03	
Science	0.10	0.07	0.04	
Written and Oral Language	0.09	0.07	0.06	
Reading	0.06	0.19	n/a	
Social Studies	0.06	0.29	n/a	
GPA (youth report, 1-4)	0.04	0.50	n/a	
Math	0.02	0.68	n/a	
Academic Attitudes				
Scholastic Efficacy (youth report, 1-4)	0.11	0.04	0.01	
College Expectations (youth report, 1-4)	0.05	0.35	n/a	
Academic Self-Esteem (youth report, 1-4)	0.04	0.45	n/a	
Connectedness to School (youth report, 1-4)	0.02	0.65	n/a	
Positive Classroom Affect (1-4)	0.00	0.94	n/a	
Academic Competency Behaviors				
Classroom Effort (1-4)	0.07	0.12	n/a	
Task Orientation	0.06	0.19	n/a	
School Preparedness	0.03	0.59	n/a	
School-Related Misbehavior				
Start to Skip School (youth report; 0,1)	**−0.25**	**0.04**	**0.03**	*
Engaging in Serious School Misconduct (0,1)	**−0.24**	**0.05**	**0.05**	*
Absence without an Excuse (0,1)	**−0.26**	**0.06**	**0.08**	*
Is Difficult in Class	−0.04	0.37	n/a	
Social Skills/Relations				
Sense of Emotional Support from Peers (youth report, 1-4)	0.08	0.15	n/a	
Social Acceptance (1-4)	0.06	0.20	n/a	
Prosocial Behavior (1-4)	0.05	0.35	n/a	
Relationship with Parent (youth report, 1-4)	0.05	0.36	n/a	
Teacher-Student Relationship Quality	0.04	0.35	n/a	
Assertiveness	−0.02	0.73	n/a	
Teacher-Student Relationship Quality (youth report, 1-4)	0.00	0.94	n/a	
Antisocial Behavior				
Substance Use (youth report; 0,1)	0.11	0.37	n/a	
Misconduct Outside of School (youth report; 0,1)	0.07	0.61	n/a	
Self-Worth (youth report, 1-4)	0.03	0.57	n/a	

Notes:

n/a A B-H Criterion was not calculated because the estimated p-value is not less than 0.10.

*   This estimate is statistically significant using the B-H criterion where the False Discovery Rate is less than 0.10.

often highly criticized for being overly stringent and severely increasing the likelihood that one would miss finding a true impact, declaring that the program is not effective when in fact it is effective (a "Type II error").

An alternative strategy that balances the risks of Type I and Type II errors better is the Benjamini-Hochberg (1995) family-wise adjustment, advocated by the What Works Clearinghouse.[19] This adjustment compares each estimated p-value with an adjusted p-value criterion. First, statistically significant findings within a specific domain (e.g., academic performance) are rank-ordered in ascending order of the estimated p-values, such that $p_1 \leq p_2 \leq p_3 \leq \ldots \leq p_m$, where m is the total number of significant findings within the domain. To compute each adjusted p-value criterion (p_i'), the following formula is used, $p_i' = i * (\alpha/M)$, where:

α = the target level of statistical significance (in this report set to 0.10)

M = the total number of p-values estimated within the specific domain of outcomes

i = the rank for p_i, with i = 1, 2 … m

Adjusted statistical significance of a coefficient is then determined by starting at the bottom of the list, comparing the largest p-value with the corresponding value of $i * (\alpha/M)$, and continuing up through the list until reaching the first p-value to satisfy the constraint that the estimated p-value $< i * (\alpha/M)$. Subsequently, all smaller estimated p-values are judged to be significant as well.

The adjustment is conducted separately for each domain of outcomes. We examined seven distinct outcome domains in this study: (1) academic performance, (2) behaviors indicative of engaging in learning ("academic competency behaviors"), (3) academic attitudes, (4) school-related misbehavior, (5) antisocial behavior, (6) social skills/relations, and (7) self-worth. The estimated p-values for our impact analyses, their corresponding Benjamini-Hochberg criterion, and indications of adjusted significance are presented in Table B.4.

After applying this adjustment for multiple hypothesis testing, five of nine impacts remained significant (i.e., all three impacts related to school misbehavior and two academic performance impacts). To maintain consistency with previous mentoring impact studies and allow greater comparability with prior research, we chose to present the impact findings in this report without applying this correction.

Appendix C
Participating Schools

The study would not have been possible without the assistance and support of staff from the participating schools. At baseline, 71 schools were involved in the study. Five more joined the study in the second school year, as a result of Littles transferring to these schools and continuing their program involvement. The following is a list of these 76 schools:

BBBS of Central Ohio (Columbus, OH)

Holt Crossing Intermediate School
Norton Middle School
Olentangy Liberty Middle School
Olentangy Orange Middle School
Olentangy Shanahan Middle School
Prairie Norton Elementary
South Mifflin Elementary School

BBBS of Colorado, Inc. (Denver, CO)

Archuleta Elementary School
Barrett Elementary School
Eastridge Community Elementary School
Fulton Elementary School
M. Scott Carpenter Middle School
McMeen Elementary School

BBBS of Eastern Maine (Ellsworth, ME)

Bucksport Middle School
Calais Middle School
Ellsworth Middle School
Fort O'Brien School
General Bryant E. Moore School
Leroy H. Smith School
Samuel L. Wagner School

BBBS of Eastern Missouri, Inc. (St. Louis, MO)

Barnwell Middle School
Brittany Woods Middle School
Festus Intermediate School
Fox Elementary School
Langston Middle School
Saeger Middle School
Seckman Elementary School
West Middle School

BBBS of Greater Cleveland (Cleveland, OH)

Alfred A. Benesch Elementary School
Mary M. Bethune Elementary School
North Royalton Middle School
Robinson G. Jones Elementary School
Thomas Jefferson Middle School

BBBS of Island County (Oak Harbor, WA)

Hillcrest Elementary School
Langley Middle School
North Whidbey Middle School
Oak Harbor Elementary School
Olympic View Elementary School
South Whidbey Intermediate School

BBBS of North Texas (Dallas, TX)

Henry W. Longfellow Middle School
Hillcrest High School
Maple Lawn Elementary School
Pinkston High School
T. J. Rusk Middle School
Thomas Jefferson High School

BBBS of Northeastern Arizona (Show Low, AZ)

Blue Ridge Middle School
Capps Middle School/Jr High School (Heber)
Thomas Jefferson Elementary School (Winslow)
Washington Elementary School (Winslow)
Winslow Jr/Sr High School

BBBS of Northwest Georgia Mountains, Inc. (Dalton, GA)

Bagley Middle School
Chatsworth Elementary School
City Park Elementary School
Cohutta Elementary School
Coker Elementary School
Dalton Middle School
Dawnville Elementary School
Eastside Elementary School
Eton Elementary School
Gladden Middle School
New Hope Elementary School
North Whitfield Middle School
Northwest Elementary School
Pleasant Grove Elementary School
Spring Place Elementary School
Valley Point Elementary School
Varnell Elementary School
Westside Elementary School
Westside Middle School

BBBS of The Bridge (Wilkes-Barre, PA)

Daniel J. Flood Elementary School
Dr. David W. Kistler Elementary School
Hazle Elementary School
Heights Murray Elementary School
Roslund Elementary School
Tunkhannock Middle School
West Hazleton Elementary/Middle School

Appendix D
Associations between Match Support and Training and Indicators of Match Success

In Chapter III, we discussed several program practices and their implications for two measures of match success: mentor-reported relationship closeness and whether or not the match was sustained into the second school year of the study. This appendix presents the bivariate correlations among the variables discussed in the text. Correlations are indicators of the strength and direction of a linear association between two variables. Correlations can range from –1.00 to 1.00, with –1.00 representing a perfect negative association between two variables (the higher the value of

one variable, the lower the value of the other), 0 suggesting no association between the two variables, and 1.00 representing a perfect positive association between the two variables (the higher the value of one variable, the higher the value of the other).

Table D.1 presents these correlations. Those associations with the highest values suggest relatively strong associations between the variables listed, while those with smaller values suggest relatively weak associations between the variables.

Table D.1
Correlations between Match Support and Training and Indicators of Match Success

	Correlation with Mentor-Reported Closeness	Correlation with Match Continuation into Year Two
Match Support		
Staff Support[a]	0.25***	0.10**
Program Quality[a]	0.26***	0.18***
Helpfulness		
BBBS Staff	0.14***	0.14***
School Staff	0.27***	0.03
Frequency of Communication		
BBBS Staff	0.03	0.04
School Staff	0.16***	0.00
Training		
Group Training	0.07	0.20***
Individual Pre-Match Training	0.17***	0.14**
Individual Post-Match Training	0.15**	0.12**
School Resources		
Adequacy of School Resources and Space[a]	0.29***	0.09*

Notes:

a   See Appendix A for a description of this scale.

***   The association between these two variables is not equal to zero at a 0.01 level of significance.

**   The association between these two variables is not equal to zero at a 0.05 level of significance.

*   The association between these two variables is not equal to zero at a 0.10 level of significance.

Appendix E
Effect Sizes

The outcome variables presented in this report are often discussed in terms of the child's score on a "scale"—for instance, a scale ranging from 1 to 5. But what does it really mean that the average Little increased 0.11 units more in overall academic performance than his or her non-mentored peers during the first school year of the study? If these outcomes were on meaningful scales—for instance, in terms of school-reported GPA (grade point average)—it would be easier to understand the practical significance of differences

between youth in the treatment and control groups. "Effect size" represents one way of creating a meaningful standardized scale that can be compared across different variables and studies. It is expressed as the standardized difference between the treatment group's average score on an outcome and the control group's average on that outcome. As such, it represents an index of how effective a particular program is. Researchers often discuss their findings in terms of statistical significance—how confident they are that the

Table E.1
Percentile Ranking of Effect Sizes for School-Related Outcomes

(all outcomes are scales from 1=Low to 5=High, unless another range is stated)			
Outcomes (as reported by teacher, unless stated)	Impact Coefficient (Mean Difference)	Effect Size (Standardized Mean Difference)	Percentile Ranking[a] (%)
Overall Academic Performance	**0.11****	**0.09**	**53.6**
Written and Oral Language	**0.09***	**0.09**	**53.6**
Reading	0.07	0.06	52.4
Science	**0.11***	**0.10**	**54.0**
Social Studies	0.06	0.06	52.4
Math	0.03	0.02	50.8
GPA (youth report, 1-4)	0.07	0.04	51.6
Quality of Class Work	**0.11****	**0.12**	**54.8**
Number of Assignments Completed	**0.14*****	**0.14**	**55.6**
School Preparedness	0.02	0.03	51.2
Classroom Effort (1-4)	0.06	0.07	52.8
Task Orientation	0.05	0.06	52.4
Absence without an Excuse (0,1)	**–0.42***	**–0.26**	**39.7**
Start to Skip School (youth report; 0,1)	**–0.41****	**–0.25**	**40.1**
Engaging in Serious School Misconduct (0,1)	**–0.40***	**–0.24**	**40.5**
Is Difficult in Class	–0.03	–0.04	48.4
Teacher-Student Relationship Quality	0.03	0.04	51.6
Teacher-Student Relationship Quality (youth report, 1-4)	0.00	0.00	50.0
Positive Classroom Affect (1-4)	0.00	0.00	50.0
Scholastic Efficacy (youth report, 1-4)	**0.07****	**0.11**	**54.4**
Academic Self-Esteem (youth report, 1-4)	0.03	0.04	51.6
Connectedness to School (youth report, 1-4)	0.01	0.02	50.8
College Expectations (youth report, 1-4)	0.05	0.05	52.0

Notes:

a   Percentile ranking indicates the ranking of the average Little within the distribution of control youth.

***   The true impact is not equal to zero at a 0.01 level of significance.

**   The true impact is not equal to zero at a 0.05 level of significance.

*   The true impact is not equal to zero at a 0.10 level of significance.

differences they find between groups are not simply due to chance. Effect size acts as a better indicator of practical significance—how large a difference there is between groups or how well the program worked.

For many measures, participants' responses can be plotted on curves. If these outcomes are "normally distributed" around the average score of the group, the curve has a bell shape. Effect size can be thought of as an indicator of the extent to which these curves, or distributions, of the treatment and control groups overlap. If there is little overlap between the two distributions, the effect of the program (i.e., the effect size) is large. In contrast, a small effect size indicates a great deal of overlap in the distributions of the two groups, suggesting that the groups do not differ by much. An effect size of 0.0 indicates that the averages and corresponding distributions of the two groups perfectly overlap.[20]

In this study, consider the case of overall academic performance. Our analyses suggest that, relative to their non-mentored peers, BBBS SBM increased Littles' overall academic performance by + 0.11, yielding an effect size of 0.09.[21] This size of effect indicates that the distributions between treatment and control youth mostly overlap—in fact, only about 7 percent of the treatment group's

distribution does not overlap with the distribution of the control group.[22] Thus, in this example, although mentoring does improve academic performance, Littles would only be outperforming a small minority of their non-mentored peers. As illustrated in Tables E.1 and E.2, effect sizes in this study ranged from 0.0 to 0.26. Accordingly, the amount of non-overlap between the distributions among all school-related and non-school-related outcomes examined in this study ranged from 0 percent to approximately 20 percent (for skipping school).

Another way to conceptualize effect size is to view it as an indicator of where the average treatment youth would fall within the distribution of control youth. With an effect size of 0.09, a Little demonstrating the average level of overall academic performance for the entire group of Littles would score better than approximately 54 percent of the control youth.[23] In other words, if the treatment and control groups each consisted of 100 youth, the treatment youth whose academic performance ranked 50th highest in the treatment group would have ranked 54th in the control group. Tables E.1 and E.2 also display the relative percentile ranking of the average Little within the distribution of controls for all school-related and non-school-related outcomes examined in this study.[24]

Table E.2
Percentile Ranking of Effect Sizes for Non-School-Related Outcomes

(all outcomes are scales from 1=Low to 5=High, unless another range is stated)			
Outcomes (as reported by teacher, unless stated)	Impact Coefficient (Mean Difference)	Effect Size (Standardized Mean Difference)	Percentile Ranking[a] (%)
Substance Use (youth report; 0,1)	0.18	0.11	54.4
Misconduct Outside of School (youth report; 0,1)	0.11	0.07	52.8
Prosocial Behavior (1-4)	0.03	0.05	52.0
Social Acceptance (1-4)	0.05	0.06	52.4
Sense of Emotional Support from Peers (youth report, 1-4)	0.07	0.08	53.2
Self-Worth (youth report, 1-4)	0.02	0.03	51.2
Assertiveness	−0.01	−0.02	49.2
Relationship with Parent (youth report, 1-4)	0.03	0.05	52.0

Note:

a   Percentile ranking indicates the ranking of the average Little within the distribution of control youth.

Appendix F
Does BBBS SBM Provide Different Benefits for Different Groups of Littles?

In this appendix, we discuss impacts for several important subgroups of Littles—by gender, grade level, race and ethnicity, and academic proficiency at baseline. In theory, mentoring could affect each of these groups differently. For example, elementary school students may be more open to listening to the advice of a mentor than middle school students. And academically struggling students may benefit more from a mentor than academically successful students. We examine these subgroup findings for the two follow-ups in our study to explore whether programs should target their SBM services to particular children and/or whether programs should explore additional strategies to ensure that all groups of youth targeted by their services are benefiting as much as possible. The reader is reminded, however, that when one looks for impacts on many variables and among many subgroups, spurious significant findings will appear randomly. If, for example, SBM had no impact on any stu-

dents, on average, one in ten comparisons would appear significant simply by chance at a p<0.10 level. Thus, while we did find some differences in impacts by subgroup, the data did not produce strong evidence in favor of targeting SBM to particular groups of students. However, as we stated in the text, some interesting patterns appear that warrant additional research.

Year One Follow-Up

Tables F.1 through F.4 present the impacts of SBM on each subgroup in Year One. Two types of statistical tests are indicated. The stars next to each impact reflect how certain we are that the subgroup impact (i.e., the comparison between treatments and controls within that particular subgroup) is a "real" difference and not simply due to chance—in particular, that the impact is not really equal to zero. The final column indicates how certain we are that the two impact

Table F.1

Impact of BBBS SBM at the End of the First School Year on School-Related Outcomes by Gender

School-Related Outcomes (as reported by teacher, unless stated)	Impact on Girls (n=292)[a]	Impact on Boys (n=240)[a]	Are the Impacts Statistically Different from Each Other?
Overall Academic Performance	**0.17*****	0.02	No
specifically in:			
Written and Oral Language	0.10	0.07	No
Reading	0.09	0.06	No
Science	**0.14***	0.07	No
Social Studies	0.11	−0.01	No
Math	0.07	−0.04	No
Quality of Classwork	**0.18*****	0.02	**YES+**
Number of Assignments Completed	**0.17****	0.10	No
Absence without an Excuse (0,1)	−0.27	−0.46	No
Start to Skip School (youth report; 0,1)	−0.30	−0.37	No
Engaging in Serious School Misconduct (0,1)	**−0.45***	−0.23	No
Scholastic Efficacy (youth report, 1-4)	0.05	**0.08***	No

(all outcomes are scales from 1=Low to 5=High, unless another range is stated)

Notes: The estimates were calculated using subgroup specifications described in Appendix B.

Sample size:
   N=1067 for youth-reported outcomes;
   N=959 for teacher-reported outcomes.

a   Sample sizes for subgroups are based on youth attrition at FU1.

+   The impacts are statistically different across genders at a 0.10 level of significance.

***   The true impact is not equal to zero at a 0.01 level of significance.

**   The true impact is not equal to zero at a 0.05 level of significance.

 *   The true impact is not equal to zero at a 0.10 level of significance.

Table F.2
Impact of BBBS SBM at the End of the First School Year on School-Related Outcomes by Age

(all outcomes are scales from 1=Low to 5=High, unless another range is stated)

School-Related Outcomes (as reported by teacher, unless stated)	Impact on Elementary School Students (n=330)[a]	Impact on Middle/ High School Students (n=202)[a]	Are the Impacts Statistically Different from Each Other?
Overall Academic Performance	**0.11***	0.09	No
specifically in:			
Written and Oral Language	0.09	0.08	No
Reading	0.07	0.09	No
Science	0.10	0.11	No
Social Studies	0.00	**0.19****	**YES+**
Math	0.00	0.09	No
Quality of Classwork	0.09	**0.15****	No
Number of Assignments Completed	0.10	**0.21****	No
Absence without an Excuse (0,1)	–0.30	–0.41	No
Start to Skip School (youth report; 0,1)	–0.26	**–0.43***	No
Engaging in Serious School Misconduct (0,1)	**–0.41****	–0.20	No
Scholastic Efficacy (youth report, 1-4)	**0.06***	0.07	No

Notes: The estimates were calculated using subgroup specifications described in Appendix B.

Sample size:
    N=1067 for youth-reported outcomes;
    N=959 for teacher-reported outcomes.

a   Sample sizes for subgroups are based on youth attrition at FU1.

+   The impacts are statistically different across age groups at a 0.10 level of significance.

**   The true impact is not equal to zero at a 0.05 level of significance.

*   The true impact is not equal to zero at a 0.10 level of significance.

estimates (e.g., that for boys and that for girls) are statistically different from each other. If the answer to this latter question is "no," then the most statistically conservative conclusion is that the impacts for the two groups are the same and are equal to the impact for the sample as a whole reported in the main text of this report.

When one conducts two statistical tests, there is always a chance that conclusions of the two tests will differ. For example, in some cases, only one of the two subgroup impacts is statistically different from zero, but the two impact estimates are not different from each other. In general, the results in the third column, comparing the two impacts, represent the stronger (more powerful) test and thus should be the ones on which conclusions should be based. Thus, in the example above, one would conclude that the two impacts are the same for both subgroups, in which case one would focus solely on the overall average impact for the entire treatment group. Many methodologists would not present subgroup estimates unless they could prove that the estimates differ from each other. However, below, we present all the subgroup impact estimates to spur the thinking of researchers and program

operators on potential differences between these groups. The differences may be spurious, but they also may not be, especially if there is a consistent pattern worth considering.

Although, below, we discuss the results for each group, taken as a whole, the subgroup analyses show that SBM had fairly similar effects on students of all types. There were some differences by subgroup, but either the impacts were not large enough to be statistically significant or there is no consistent pattern of results to convincingly support the hypothesis that SBM is significantly more or less effective for one group over another.

Effects by Gender

Table F.1 shows that for most of the significant academic impacts, the effects on girls were numerically larger than on boys. The program's impacts were particularly apparent on girls' overall academic performance, their science performance, the quality of their class work, the number of assignments completed and the reduction in school misconduct. The impact on male Littles, on the other hand, was more pronounced than that on female Littles for the youth's sense of scholastic competence (their perceived ability to do

Table F.3
Impact of BBBS SBM at the End of the First School Year on School-Related Outcomes by Race and Ethnicity

(all outcomes are scales from 1=Low to 5=High, unless another range is stated)

School-Related Outcomes (as reported by teacher, unless stated)	Impact on Whites (n=192)[a]	Impact on Minorities (n=340)[a]	Are the Impacts Statistically Different from Each Other?
Overall Academic Performance	0.02	**0.16****	No
specifically in:			
Written and Oral Language	0.09	0.09	No
Reading	0.03	0.10	No
Science	0.12	0.10	No
Social Studies	0.03	0.08	No
Math	0.01	0.04	No
Quality of Class Work	0.11	**0.11***	No
Number of Assignments Completed	0.12	**0.15****	No
			No
Absence without an Excuse (0,1)	–0.16	**–0.44****	No
Start to Skip School (youth report; 0,1)	–0.46	–0.27	No
Engaging in Serious School Misconduct (0,1)	–0.35	–0.32	No
Scholastic Efficacy (youth report, 1-4)	**0.12****	0.03	No

Notes: The estimates were calculated using subgroup specifications described in Appendix B.

Sample size:
    N=1067 for youth-reported outcomes;
    N=959 for teacher-reported outcomes.

a   Sample sizes for subgroups are based on youth attrition at FU1.

None of the impacts are statistically different across race and ethnicity subgroups at a 0.10 level of significance.

**   The true impact is not equal to zero at a 0.05 level of significance.

*   The true impact is not equal to zero at a 0.10 level of significance.

their school work well). The impact difference between the girls and boys was statistically significant, however, for only teacher-assessed quality of classwork, for which the impact was larger for girls than for boys.

Effects for Elementary School Students versus Middle/High School Students

Table F.2 on page 111 indicates that middle/high school students may have benefited more from SBM than did elementary school students, though both benefited. Teachers reported that the improvements in the academic performance of both groups of Littles relative to their peers were fairly similar across most subjects and overall, with the exception of social studies and math. In the latter subjects, the relative improvement was larger for the middle/high school Littles than the elementary school Littles; however, the difference in impacts was statistically significant only for social studies. Middle/high school teachers noted larger improvements (relative to the Littles' peers) in the Littles' quality of class work and the number of assignments com-

pleted than the elementary school teachers did. Again, however, the differences between these impacts were not significant. Lastly, while school behavior improved for both groups, how it manifested itself differed by age. The middle/high school Littles showed improved attendance, while elementary school Littles were less likely than their peers to be involved in serious school infractions (i.e., fighting, being sent to the principal's office or being suspended).

Effects for White versus Minority Students

While we cannot statistically distinguish between the size of any of the impacts for white versus minority Littles, Table F.3 shows that the impacts of SBM are slightly more apparent for minority children. In particular, the impact on minority Littles seems especially strong on their overall academic performance. The impact on unexcused absences is also more apparent for minority students than white students. Both the quality of minority Littles' class work and the number of assignments completed also improved relative to their minority non-mentored peers, although the size of the

Table F.4

Impact of BBBS SBM at the End of the First School Year on School-Related Outcomes by Academic Achievement

(all outcomes are scales from 1=Low to 5=High, unless another range is stated)			
School-Related Outcomes (as reported by teacher, unless stated)	Impact on Academically Higher-Performing Littles (n=231)[a]	Impact on Academically Lower-Performing Littles (n=233)[a]	Are the Impacts Statistically Different from Each Other?
Overall Academic Performance	0.12	0.10	No
specifically in:			
Written and Oral Language	0.10	0.11	No
Reading	0.07	0.11	No
Science	**0.17****	0.07	No
Social Studies	0.11	0.04	No
Math	0.09	0.01	No
Quality of Class Work	**0.13****	**0.11***	No
Number of Assignments Completed	**0.16****	**0.15***	No
			No
Absence without an Excuse (0,1)	−0.27	−0.38	No
Start to Skip School (youth report; 0,1)	**−0.55****	−0.13	No
Percent with Serious School Misconduct	**−0.64*****	0.03	**YES+**
Scholastic Efficacy (youth report, 1-4)	0.04	0.08	No

Notes: The estimates were calculated using subgroup specifications described in Appendix B.

Sample size:
   N=1067 for youth-reported outcomes;
   N=959 for teacher-reported outcomes.

a   Sample sizes for subgroups are based on youth attrition at FU1.

+   The impacts are statistically different across academic achievement groups at a 0.10 level of significance.

***   The true impact is not equal to zero at a 0.01 level of significance.

**   The true impact is not equal to zero at a 0.05 level of significance.

*   The true impact is not equal to zero at a 0.10 level of significance.

impacts for white Littles in these areas was similar. The only impact differential that went in the opposite direction (in favor of white Littles) was for perceived scholastic competence. Here, white Littles appeared to feel more competent relative to their peers than did minority Littles compared to their peers. Again, however, none of the comparisons between impacts for whites and those for minorities were statistically significant.

Effects by Academic Standing

An interesting programmatic question is whether SBM programs should target their mentoring efforts to the students who are struggling the most in school. On average, the youth who were referred to the program were not strong students. However, some of them were better students than others. Based on teachers' baseline ratings of the students' overall academic performance, we split the youth into two groups as closely as possible to the sample's median score, yielding a higher achieving group (49 percent) and a lower achieving group (51 percent).[25] It was unclear beforehand

which group of students would benefit most from having a mentor. On the one hand, mentors may help the lower achieving students more because those students have more to learn. On the other hand, the better students may be able to get more academically out of interactions with a mentor than students who are struggling (see Ceci and Papierno, 2005, for a discussion).

When we examine the impacts for each of these two groups in Table F.4, we find that the academic performance impacts are very similar, although they are slightly more apparent among the higher performing Littles.[26] While most impacts are not statistically different between the two groups, the behavioral impacts are numerically larger among the higher performing Littles. For example, fewer higher performing Littles started skipping school compared to their higher performing peers than did lower performing Littles relative to their peers. However, this difference in impacts was not statistically significant. For one outcome, however, serious school misconduct, the impacts for lower and higher performing Littles did

Table F.5

**Subgroup Impacts of BBBS SBM in Late Fall of the Second School Year
on the Two Outcomes That Were Significant for the Full Sample**

	Outcome Measures	
Subgroups[a]	College Expectations (youth report, 1-4)	Starting to Skip School (youth report; 0,1)
Girls (n = 270)	0.10	**−0.36****
Boys (n = 223)	0.06	−0.15
White Students (n = 182)	0.06	−0.21
Minority Students (n = 311)	0.09	**−0.29***
Elementary School Students (n = 310)	0.09	−0.24
Middle School Students (n = 183)	0.07	−0.30
Higher-Performing Students (n = 206)	0.02	−0.06
Lower-Performing Students (n = 221)	**0.13***	**−0.39****

Notes: The estimates were calculated using subgroup specifications described in Appendix B.

a   Sample sizes for subgroups are based on youth attrition at FU2.

None of the impacts are statistically different across groups at a 0.10 level of significance.

**   The true impact is not equal to zero at a 0.05 level of significance.

*   The true impact is not equal to zero at a 0.10 level of significance.

differ significantly: Fewer higher performing students seriously misbehaved in school (i.e., were sent to the principal's office, fought or were suspended) compared to their higher performing peers than did lower performing students relative to their peers.

Thus, while both stronger and weaker students benefit from SBM academically, the better-performing students may be able to get more out of the relationship, at least behaviorally.

Year Two Follow-Up

In the second year of the study, impacts were found for two outcomes: college expectations and starting to skip school. Similar to our findings in Year One, we found no statistical differences in the size of impacts for each of the subgroups we examined. However, again, certain impacts are numerically larger and/or more apparent for some groups than others (see Table F.5). In particular, the improvement in college expectations relative to similar non-mentored peers was most apparent for Littles who had been doing less well in school (compared to Littles who had been better students) when they applied to BBBS. Similarly, the difference in skipping school between Littles who had done less well in school and their non-mentored peers was greater than the difference between the higher performing Littles and their non-mentored peers, whose attendance patterns were quite similar. The impact on skipping school was also more appar-

ent for female Littles than male Littles and for minority Littles compared to white Littles.

In addition to examining whether the two significant overall impacts were driven by particular types of Littles, we also investigated whether specific groups of Littles benefited in those 29 areas for which we did not see significant impacts in Year Two when comparing the full sample of Littles with their non-mentored peers. If a specific subgroup of Littles—for example, those who started the program performing better academically—benefited from the program, but lower performing Littles actually declined over time, combining these groups of youth in our analyses would mask those benefits received by the first subgroup.

Only two outcomes (classroom effort and substance use) showed subgroup differences that supported this hypothesis. Because we examined so many comparisons in these analyses and there are no other corroborating impacts, these two subgroup findings are most likely spurious.[27]

Appendix G
Follow-Up Analyses to Further Explore Associations between Match Length, Relationship Quality and Outcomes

The impact analyses presented at the beginning of Chapters IV and V provide us with an estimate of the average impact given the average length of match and relationship of average quality. In these chapters, we also discussed associations between match length and quality and Littles' outcomes at the first and second follow-up assessments. We noted that, although we controlled for many of the youth characteristics using our basic regression models described in Appendix B, the youth who are able to sustain longer matches or develop better relationships may be systematically different from other youth in additional ways that could distort our estimates of associations between match experiences and outcomes. For example, goal-oriented students may remain in the program longer than those who lack such an orientation; they may also work harder in school to improve their performance. If so, although it may appear that being involved in a longer SBM match leads to greater improvements in school performance, the differences we observed in outcomes may actually be attributed to the students' goal orientation, not to their mentoring experience. In other words, the problem in this example is that actual observed match length or relationship quality is correlated with an unmeasured youth characteristic (such as goal orientation) that also affects the outcome.

We attempted to adjust for this potential "selection bias" by using the statistical technique called two-stage least squares regression ("2SLS"; Angrist and Imbens, 1995; Berry and Feldman, 1985; James and Singh, 1978). The basic idea of 2SLS is to substitute a "clean" version of the "problem" variable (e.g., match length). To do this, one identifies a set of variables that are unrelated to the unmeasured characteristic (such as goal orientation) and unrelated to the outcome measure except through its effect on the "problem" variable. These variables are called "instruments." Then one uses regression analysis to create the linear combination of the instruments that most closely predicts the problem variable (the first stage). This clean version of match length (or relationship quality) is then used in the main impact regression (the second stage) in place of the original "true" variable.[28] However, before proceeding to the second stage, one tests how correlated the instruments are to the problem variable. As long as the joint F-test on all the instruments in the first stage is 10 or greater (i.e., the instruments are fairly strongly associated with the original problem variable), one continues to the second stage.

To investigate the association between match length and impacts in the first year, we divided Littles into three different match length groups: the 25 percent of the treatments whose last match met three months or less by the first follow-up, the 48 percent who met four to six months, and the remaining 28 percent who had a match that lasted six to nine months. All three variables needed to be instrumented (i.e., predicted in a regression in the first stage described above). Because our problem variable is entirely concentrated in the treatment students, we conducted our first-stage regression analyses on only the treatment group. The instruments we considered consisted of measures about the youth's mentor that could be linked with match length but would not be linked directly with our outcome measures. These instruments included: a dichotomous variable measured before the mentor started meeting with the youth indicating his or her attitudes toward youth in general, a variable indicating whether the mentor started the relationship wanting to "just be a friend," and a variable indicating whether the mentor usually lets the youth decide how they spend their time together. In addition, we controlled for how often the child had moved in the two years before enrolling in BBBS. Unfortunately, none of the instruments we considered both allowed our first-stage models to converge and passed the F > 10 criterion. Thus, we were unable to proceed to the second stage. We similarly could not successfully instrument either the second-year match length variable or our relationship closeness variables in either year. Thus, the analyses discussed in the text in Chapters IV and V are based on simple regressions or logits in which a set of match length variables or relationship closeness variables is included.

As an example, we present the tables for the analyses we conducted on how relationship closeness is associated with outcomes at 15 months. The first two tables (Tables G.1 and G.2) examine associations between concurrent closeness and outcomes at the second follow-up for Littles whose match continued into the second school year (i.e., 15-month Littles). The next two tables (Tables G.3 and G.4) present associations between outcomes at the second follow-up for one-school-year Littles (i.e., youth whose matches did not continue into a second school year) and how close they had felt to their mentor at the end of that first year. As stated in the text, because the youth who belong to the various groups could differ from the average control youth in ways other than those for which we have controlled, or accounted for, in our regression models, we do not know how much of the estimated correlation is due to match length or relationship quality versus these unmeasured traits.

Table G.1

Year-Two Differences in School-Related Outcomes between Non-Mentored Youth and 15-Month Littles with Different Levels of Relationship Closeness in Year Two
(Subgroups of Littles Compared to All Non-Mentored Peers)

(all outcomes are scales from 1=Low to 5=High, unless another range is stated)

School-Related Outcomes in Year Two (as reported by teacher, unless stated)	(Column 1) Youth with Very High-Quality Relationships in Year Two (n=150)	(Column 2) Youth with Lower-Quality Relationships in Year Two (n=138)	(Column 3) Difference in Outcomes of Having a Very High vs. Lower-Quality Relationship in Year Two (Difference between Column 1 and 2)
Overall Academic Performance	0.09	−0.07	0.15[a]
specifically in:			
Written and Oral Language	−0.05	−0.12	0.07
Reading	0.01	−0.11	0.11[a]
Science	0.16	−0.03	0.19
Social Studies	−0.10	−0.06	−0.03[a]
Math	0.18	−0.11	**0.29***
GPA (youth report, 1-4)	0.25	0.06	0.19
Quality of Class Work	0.05	−0.06	0.10[a]
Number of Assignments Completed	0.02	−0.06	0.09[a]
School Preparedness	**0.17****	0.00	**0.17***
Classroom Effort (1-4)	0.08	−0.07	**0.15***
Task Orientation	**0.18****	−0.07	**0.25****
Absence without an Excuse (0,1)	−0.05	−0.04	−0.01
Start to Skip School (youth report; 0,1)	**−0.20*****	**−0.16*****	−0.04
Engaging in Serious School Misconduct (0,1)	−0.01	0.01	−0.02
Is Difficult in Class	−0.07	0.05	**−0.12***
Teacher-Student Relationship Quality	**0.15****	−0.02	**0.17****
Teacher-Student Relationship Quality (youth report, 1-4)	**0.12*****	−0.01	**0.14** [a]**
Positive Classroom Affect (1-4)	0.04	−0.08	0.11[a]
Scholastic Efficacy (youth report, 1-4)	0.04	−0.03	0.06[a]
Academic Self-Esteem (youth report, 1-4)	0.09	−0.05	**0.13* [a]**
Connectedness to School (youth report, 1-4)	**0.11****	−0.06	**0.18*** [a]**
College Expectations (youth report, 1-4)	**0.13***	0.00	0.13

Notes:

Sample size:
    N=763 for youth-reported outcomes;
    N=745 for teacher-reported outcomes.

a   This difference is accurate and due to rounding.

***   The true impact is not equal to zero at a 0.01 level of significance.

**   The true impact is not equal to zero at a 0.05 level of significance.

*   The true impact is not equal to zero at a 0.10 level of significance.

Table G.2

Year-Two Differences in Non-School-Related Outcomes between Non-Mentored Youth and 15-Month Littles with Different Levels of Relationship Closeness in Year Two (Subgroups of Littles Compared to All Non-Mentored Peers)

	(all outcomes are scales from 1=Low to 5=High, unless another range is stated)		
Non-School-Related Outcomes in Year Two (as reported by teacher, unless stated)	**(Column 1) Youth with Very High-Quality Relationships in Year Two (n=150)**	**(Column 2) Youth with Lower-Quality Relationships in Year Two (n=138)**	**(Column 3) Difference in Outcomes of Having a Very High vs. Lower-Quality Relationship in Year Two (Difference between Column 1 and 2)**
Substance Use (youth report; 0,1)	−0.05	−0.01	−0.04
Misconduct Outside of School (youth report; 0,1)	−0.12	−0.12	0.00
Prosocial Behavior (1-4)	**0.14***	−0.08	**0.22***
Social Acceptance (1-4)	0.07	**−0.13****	**0.21****[a]
Sense of Emotional Support from Peers (youth report, 1-4)	**0.15****	−0.07	**0.22 ***
Self-Worth (youth report, 1-4)	0.02	0.02	0.00
Assertiveness	**0.15****	−0.09	**0.24***
Relationship with Parent (youth report, 1-4)	0.08	−0.06	**0.14****

Notes:

Sample size:
    N=763 for youth-reported outcomes;
    N=745 for teacher-reported outcomes.

a   This difference is accurate and due to rounding.

***   The true impact is not equal to zero at a 0.01 level of significance.

**   The true impact is not equal to zero at a 0.05 level of significance.

Table G.3

Year-Two Differences in School-Related Outcomes between Non-Mentored Youth and One-School-Year Littles with Different Levels of Relationship Closeness in Year One
(Subgroups of Littles Compared to All Non-Mentored Peers)

(all outcomes are scales from 1=Low to 5=High, unless another range is stated)

School-Related Outcomes in Year Two (as reported by teacher, unless stated)	(Column 1) Youth Who Had Very High-Quality Relationships in Year One (n=93)	(Column 2) Youth Who Had Lower-Quality Relationships in Year One (n=108)	(Column 3) Difference in Outcomes of Having a Very High vs. Lower-Quality Relationship in Year One (Difference between Column 1 and 2)
Overall Academic Performance	0.08	**–0.19***	**0.27****
specifically in:			
Written and Oral Language	0.07	–0.05	0.12
Reading	0.19	–0.08	0.27
Science	–0.05	–0.08	0.03
Social Studies	0.00	**–0.30****	0.31[a]
Math	–0.09	–0.13	0.05
GPA (youth report, 1-4)	–0.12	0.11	–0.23[a]
Quality of Class Work	0.04	**–0.22****	**0.26***
Number of Assignments Completed	–0.03	**–0.20***	0.17
School Preparedness	**0.23****	**–0.26*****	**0.50****[a]
Classroom Effort (1-4)	0.12	**–0.20****	**0.32*****
Task Orientation	0.13	**–0.25****	**0.38****
Absence without an Excuse (0,1)	–0.05	0.06	–0.11
Start to Skip School (youth report; 0,1)	–0.06	–0.04	–0.02
Engaging in Serious School Misconduct (0,1)	–0.04	**0.19****	**–0.23****
Is Difficult in Class	0.01	**0.25*****	**–0.23****[a]
Teacher-Student Relationship Quality	0.02	**–0.22*****	**0.24****
Teacher-Student Relationship Quality (youth report, 1-4)	0.08	–0.05	**0.13***
Positive Classroom Affect (1-4)	0.01	**–0.22*****	**0.22****[a]
Scholastic Efficacy (youth report, 1-4)	0.08	0.03	0.05
Academic Self-Esteem (youth report, 1-4)	**0.14***	–0.03	0.17
Connectedness to School (youth report, 1-4)	0.06	0.00	0.06
College Expectations (youth report, 1-4)	0.12	0.02	0.10

Notes:

Sample size:
    N=763 for youth-reported outcomes;
    N=745 for teacher-reported outcomes.

a   This difference is accurate and due to rounding.

*** The true impact is not equal to zero at a 0.01 level of significance.

**   The true impact is not equal to zero at a 0.05 level of significance.

*   The true impact is not equal to zero at a 0.10 level of significance.

Table G.4

**Year-Two Differences in Non-School-Related Outcomes between Non-Mentored Youth and One-School-Year Littles with Different Levels of Relationship Closeness in Year One
(Subgroups of Littles Compared to All Non-Mentored Peers)**

(all outcomes are scales from 1=Low to 5=High, unless another range is stated)

Non-School-Related Outcomes in Year Two (as reported by teacher, unless stated)	(Column 1) Youth Who Had Very High-Quality Relationships in Year One (n=93)	(Column 2) Youth Who Had Lower-Quality Relationships in Year One (n=108)	(Column 3) Difference in Outcomes of Having a Very High vs. Lower-Quality Relationship in Year One (Difference between Column 1 and 2)
Substance Use (youth report; 0,1)	–0.08	0.00	–0.08
Misconduct Outside of School (youth report; 0,1)	–0.23	0.38	–0.61
Prosocial Behavior (1-4)	0.05	**–0.12***	**0.17***
Social Acceptance (1-4)	0.01	–0.09	0.10
Sense of Emotional Support from Peers (youth report, 1-4)	**0.17****	–0.11	**0.28*****
Self-Worth (youth report, 1-4)	0.09	0.01	0.08
Assertiveness	0.01	–0.13	0.14
Relationship with Parent (youth report, 1-4)	0.10	**–0.12***	**0.22*****

Notes:

Sample size:
   N=763 for youth-reported outcomes;
   N=745 for teacher-reported outcomes.

a   This difference is accurate and due to rounding.

***   The true impact is not equal to zero at a 0.01 level of significance.

**   The true impact is not equal to zero at a 0.05 level of significance.

*   The true impact is not equal to zero at a 0.10 level of significance.

Appendix H
Outcome Trajectories for One-School-Year and 15-Month Littles

In Chapter V, we discussed differences in outcomes for those Littles who received one school year of mentoring and those who continued their mentoring experience into the second school year of the study. Although most comparisons between the Littles who received only one school year of mentoring and their non-mentored peers were not large enough to be statistically significant, this group of Littles demonstrated an overall pattern of decline relative to their peers in the school-related areas we assessed. In contrast, the Littles who continued with the program in the second school year of the study ("15-month Littles") demonstrated an overall pattern of small advantages in school-related outcomes over their non-mentored peers.

Although these different patterns for the one-school-year and 15-month Littles suggest that the additional mentoring received by the 15-month Littles may have helped them sustain their benefits, we were concerned that perhaps this pattern of findings simply reflects differences that already existed between the 15-month and one-school-year Littles when they applied for the program or at the end of the first school year, and, as such, are not the result of the extra mentoring received by the 15-month Littles. Because the Littles in our study were not randomly assigned to be matched with a mentor for one school year or for longer, it is certainly possible that these two groups of youth differ in ways other than the length of their program participation.

To explore this possibility, we examined characteristics of these two groups of Littles at baseline and examined changes in the pattern of each group's outcomes over the course of the study. At baseline, the 15-month Littles did not differ from one-school-year Littles in any demographic or background characteristic, except that they were more likely to be ethnic minorities. When they applied to the program, they were, however, doing better than the one-school-year Littles in terms of their substance use, global self-worth and several school-related variables.[29]

Despite these baseline differences, the two groups of Littles showed a similar pattern of improvement through the first school year, relative to their non-mentored peers, in school-related outcomes—each showed several positive academic benefits. Yet, as noted, the two groups demonstrated different patterns of change from the end of the first school year to late fall of the second school year (see Tables H.1 and H.2 on the following pages).

A typical pattern of change over time in academic outcomes is illustrated in Figure H.1 on page 123. Both one-school-year and 15-month Littles demonstrated improvements in overall academic performance relative to their non-mentored peers at the first follow-up. However, at the second follow-up, their paths diverged, such that one-school-year Littles declined to a level close to their original performance, while 15-month Littles were better able to sustain the benefits they achieved in the first year of their involvement in the program. Despite this pattern, the overall academic performance for both of these groups was not significantly different from that of their non-mentored peers (or from each other) at the second follow-up.

This pattern of results in school-related outcomes was evident not only for Littles' academic performance but also for school-related behaviors. As illustrated in Figure H.2 on page 123, classroom misbehavior declined from the start of the study to the end of the first school year for 15-month Littles and stayed fairly steady for one-school-year Littles. However, Littles who continued their involvement in SBM into the following school year sustained their fairly low level of misbehavior at the second follow-up. In contrast, benefits among Littles who ended their SBM involvement prior to the second school year not only disappeared, but misbehavior in the classroom among this group of Littles actually increased to a level that was significantly higher than that of both their non-mentored peers and 15-month Littles.

Again, however, in most cases the differences in school-related outcomes among these three groups are not large enough to reach statistical significance (perhaps in part because the two groups of Littles are fairly small). In contrast to school-related outcomes, relational and personal well-being outcomes in these two groups yielded no clear pattern of differences over time.

We also conducted a "pooled analysis" in which outcomes from both the first and second follow-up assessments for all three groups of youth—the non-mentored youth, the one-school-year Littles and the 15-month Littles—were analyzed together.[30] The results of these analyses confirm the patterns presented here. Littles who received only one school year of mentoring lost the relative advantage they had had over non-mentored youth at the end of the first school year.[31] Littles who continued to participate in the program in the second school year of the study remained relatively constant in the level of their outcomes measured at the first follow-up.[32] Outcomes for the non-mentored youth, for the most part, improved somewhat between the end of the first school year and the 15-month follow-up, which reduced the size of the relative advantage that had been held by the 15-month Littles over their non-mentored peers at the end of the first school year.[33]

Table H.1
Change in School-Related Outcomes Over Time for One-School-Year Littles

(all outcomes are scales from 1=Low to 5=High, unless another range is stated)

School-Related Outcomes (as reported by teacher, unless stated)	Average for One-School-Year Littles[a] at Baseline	Average for One-School-Year Littles[a] at FU1	Difference between One-School-Year Littles and Non-Mentored Youth at FU1	Average for One-School-Year Littles[a] at FU2	Difference between One-School-Year Littles and Non-Mentored Youth at FU2
Overall Academic Performance	2.54	2.73	0.09	2.59	-0.06
specifically in:					
Written and Oral Language	2.54	2.89	**0.17****	2.75	0.00
Reading	2.46	2.84	**0.16****	2.67	0.06
Science	2.65	2.86	0.12	2.72	-0.02
Social Studies	2.73	2.87	0.09	2.68	-0.14
Math	2.46	2.67	0.02	2.44	-0.08
GPA (youth report, 1-4)	2.82	2.74	0.00	2.68	0.03
Quality of Class Work	2.82	3.05	**0.17*****	2.86	-0.08
Number of Assignments Completed	2.99	3.16	**0.19*****	2.92	-0.08
School Preparedness	3.24	3.46	0.10	3.32	–0.02
Classroom Effort (1-4)	2.73	2.83	0.05	2.83	–0.04
Task Orientation	3.01	3.07	0.07	3.04	–0.06
Absence without an Excuse (0,1)	0.16	0.06	**–0.12*****	0.20	0.05
Start to Skip School (youth report; 0,1)	N/A[b]	0.14	–0.01	0.30	0.05
Engaging in Serious School Misconduct (0,1)	0.11	0.20	0.01	0.20	0.08
Is Difficult in Class	2.22	2.21	0.02	2.26	**0.13****
Teacher-Student Relationship Quality	3.80	3.80	–0.01	3.79	–0.09
Teacher-Student Relationship Quality (youth report, 1-4)	3.35	3.26	–0.03	3.31	0.01
Positive Classroom Affect (1-4)	3.26	3.22	0.02	3.25	**–0.11***
Scholastic Efficacy (youth report, 1-4)	2.79	2.86	**0.09****	2.87	0.06
Academic Self-Esteem (youth report, 1-4)	3.23	3.18	–0.01	3.26	0.06
Connectedness to School (youth report, 1-4)	3.22	3.14	0.02	3.16	0.04
College Expectations (youth report, 1-4)	3.32	3.34	0.07	3.40	0.08

Notes: The estimated differences between one-school-year Littles and non-mentored youth presented in Columns 3 and 5 are statistically adjusted to control for the baseline value of the outcome measure, youth's age, minority status, gender, number of youth-reported stressful life events in the six months prior to the baseline interview, whether the child qualifies for free or reduced-price lunch, and the child's extracurricular activity involvement.

a   The one-school-year Littles' average in Columns 1, 2 and 4 are the adjusted means relative to 15-month Littles at baseline, FU1 and FU2, respectively. For those variables with a 0-1 response format, Columns 1, 2 and 4 present the proportion of one-school-year Littles exhibiting these behaviors at baseline, FU1 and FU2, respectively.

b   The starting-to-skip-school outcome represents an initiation of skipping school at each follow-up from baseline. Therefore, a baseline mean level is not reported.

***   The true impact is not equal to zero at a 0.01 level of significance.

**   The true impact is not equal to zero at a 0.05 level of significance.

*   The true impact is not equal to zero at a 0.10 level of significance.

Table H.2
Change in School-Related Outcomes Over Time for 15-Month Littles

(all outcomes are scales from 1=Low to 5=High, unless another range is stated)

School-Related Outcomes (as reported by teacher, unless stated)	Average for 15-Month Littles[a] at Baseline	Average for 15-Month Littles[a] at FU1	Difference between 15-Month Littles and Non-Mentored Youth at FU1	Average for 15-Month Littles[a] at FU2	Difference between 15-Month Littles and Non-Mentored Youth at FU2
Overall Academic Performance	2.60	2.73	**0.10***	2.68	0.04
specifically in:					
Written and Oral Language	2.66	2.75	0.04	2.69	−0.05
Reading	2.57	2.70	0.02	2.59	−0.03
Science	2.71	2.83	0.10	2.84	0.10
Social Studies	2.73	2.82	0.04	2.77	−0.04
Math	2.49	2.67	0.02	2.60	0.08
GPA (youth report, 1-4)	2.93	2.78	0.04	2.73	0.08
Quality of Class Work	2.87	2.97	0.08	2.96	0.03
Number of Assignments Completed	3.01	3.08	**0.11***	3.02	0.02
School Preparedness	3.36	3.35	−0.01	3.44	0.10
Classroom Effort (1-4)	2.84	2.85	**0.07***	2.89	0.02
Task Orientation	3.06	3.05	0.06	3.17	0.07
Absence without an Excuse (0,1)	0.07	0.13	−0.05	0.13	−0.02
Start to Skip School (youth report; 0,1)	N/A[b]	0.07	**−0.07***	0.14	**−0.11***
Engaging in Serious School Misconduct (0,1)	0.11	0.13	**−0.06****	0.12	0.00
Is Difficult in Class	2.18	2.12	**−0.07***	2.11	−0.03
Teacher-Student Relationship Quality	3.87	3.87	0.07	3.92	0.04
Teacher-Student Relationship Quality (youth report, 1-4)	3.34	3.31	0.01	3.35	0.06
Positive Classroom Affect (1-4)	3.26	3.20	0.00	3.35	−0.01
Scholastic Efficacy (youth report, 1-4)	2.86	2.82	0.05	2.82	0.01
Academic Self-Esteem (youth report, 1-4)	3.27	3.25	0.06	3.22	0.02
Connectedness to School (youth report, 1-4)	3.20	3.13	0.01	3.14	0.02
College Expectations (youth report, 1-4)	3.29	3.31	0.04	3.39	0.07

Notes: The estimated differences between 15-month Littles and non-mentored youth presented in Columns 3 and 5 are statistically adjusted to control for the baseline value of the outcome measure, youth's age, minority status, gender, number of youth-reported stressful life events in the six months prior to the baseline interview, whether the child qualifies for free or reduced-price lunch, and the child's extracurricular activity involvement.

a   The 15-month Littles' average in Columns 1, 2 and 4 are the unadjusted means at baseline, FU1 and FU2, respectively, for youth who received mentoring for more than one school year. For those variables with a 0-1 response format, Columns 1, 2 and 4 present the proportion of 15-month Littles exhibiting these behaviors at baseline, FU1 and FU2, respectively.

b   The starting-to-skip-school outcome represents an initiation of skipping school at each follow-up from baseline. Therefore, a baseline mean level is not reported.

***   The true impact is not equal to zero at a 0.01 level of significance.

**   The true impact is not equal to zero at a 0.05 level of significance.

*   The true impact is not equal to zero at a 0.10 level of significance.

Figure H.1

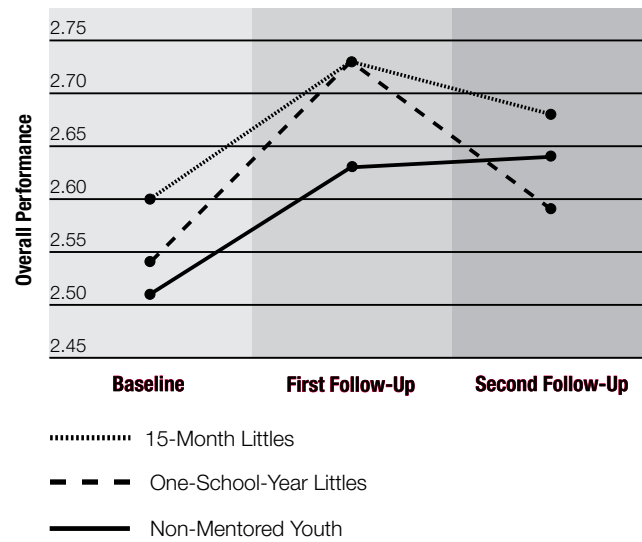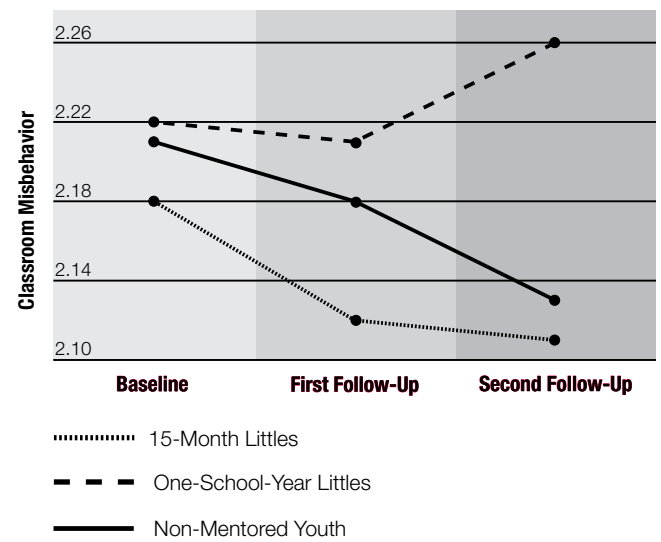**Ratings of Overall Academic Performance by Timepoint**

Figure H.2

Ratings of Classroom Misbehavior by Timepoint

Appendices Endnotes

1   Two measures that were included in the youth survey (prosocial behavior and social acceptance) had reliabilities below 0.70 at one time point. They were therefore excluded as outcome measures.

2   Youth were required to have signed parent permission and youth assent forms to participate. Participation in the research study was not a condition for receiving a mentor. However, our permission form stressed that study participants would have priority in matching; and if the parent chose not to participate, in all likelihood his or her child would not be matched with a mentor until the study was completed.

3   Although we collected FU1 teacher surveys for 959 youth, only 886 of these youth had teacher surveys completed at baseline. Our impact analyses of teacher-reported data include only those youth who had both baseline and FU1 data.

4   Our data suggest that by the second follow-up (FU2), 355 youth (181 treatments and 174 controls) for whom we were able to collect data (i.e., had a completed FU2 survey from the youth and/or his or her teacher) had changed schools from the beginning of the study. This estimate includes 25 youth from two schools at the Cleveland agency who moved to new campuses midway through the study. Although the student body remained intact at these two schools, all students were moved into a new school building. In addition, it is very likely that most, if not all, of the 144 youth for whom we were unable to obtain second follow-up surveys (from either the youth or the teacher) changed schools as well.

5   Although we collected FU2 teacher surveys for 920 youth, only 821 of these youth had teacher surveys completed at baseline. Our impact analyses of teacher-reported data only include those youth who had both baseline and FU2 data.

6   Due to software limitations, three-level random intercept models were conducted only for linear outcomes. Of the six significant linear impacts found at the first follow-up, only four of the models converged (teacher-reported science performance, written and oral language performance and overall academic performance, and youth-reported scholastic efficacy). The other two linear models failed to converge due to insufficient variance at the agency level.

7   All two-level random-intercept and slope models converged, and variance estimates for the random treatment slope were not significant for all but two of the outcome variables (teacher-reported school misconduct and substance use, both at the second follow-up).

8   Significant FU1 and FU2 impacts from the three-level models were the same as those resulting from the two-level random-intercept models in both magnitude and significance level. Using the two-level random intercept and slope model, FU1 impacts were also similar, both in magnitude and significance level. Further, in addition to replicating the FU2 impacts, results using the two-level random-intercept and slope model suggest a significant positive impact for Littles in youth-reported teacher relationship quality (p<0.10) and substance use (p<0.10).

9   Data on free or reduced-price lunch were collected at our second data collection period (the first follow-up), but eligibility was determined at the beginning of the school year before the baseline was administered.

10 The overall pattern of significant differences between FU1 youth attriters and non-attriters on the 29 continuous baseline characteristics examined was tested using a MANOVA (F(32,630)=1.45, p<0.10).

11 The overall pattern of differences between FU2 youth attriters and non-attriters was tested using a MANOVA (F(32,630)=1.56, p<0.05).

12 A total of 959 youth had teachers who completed a follow-up survey. However 73 of those youth did not have a teacher survey completed at baseline. Our attrition analyses are based on teacher response rates at baseline.

13 The overall pattern of differences between FU1 teacher attriters and non-attriters was tested using a MANOVA (F(32,630)=1.77, p<0.01).

14 In most cases, for a given student, the teacher who completed the survey at baseline (in the first school year of the study) was different from the teacher who completed the survey at the second follow-up (in the second school year of the study). In some cases, the baseline teacher also differed from the teacher at the first follow-up. Here, we label the teachers as "attriters." However, we are referring to youth whose teacher (original or new) did not complete a follow-up survey.

15 A total of 920 youth had teachers who completed a survey at the second follow-up. However, 99 of these youth did not have a teacher survey at baseline. Our attrition analyses are based on teacher response rates at baseline.

16 The overall pattern of differences between FU2 teacher attriters and non-attriters was tested using a MANOVA (F(32,630)=1.44, p<0.10).

17 The overall pattern of differences in outcomes between the treatment and control groups among youth who remained in our study ("non-attriters") was tested using a MANOVA (at FU1: F(32,599)=0.56, p=0.98; at FU2: F(32,534=0.49, p=0.99).

18 The overall pattern of differences in outcomes between the treatment and control groups among teacher non-attriters was tested using a MANOVA (at FU1: F(32,561)=0.72, p=0.88; at FU2: F(32,517)=0.64, p=0.94).

19 What Works Clearinghouse. "What Works Clearinghouse Intervention Rating Scheme." www.whatworks.ed.gov/reviewprocess/rating_scheme.pdf

20 Positive effect sizes indicate that the average treatment youth scored higher on the outcome of interest than the average control youth. Conversely, negative effect sizes indicate that the average treatment youth scored lower than the average control youth.

21 The effect size for each linear outcome was calculated as: [1 – {3 / (4 x (Treatment n + Control n – 2) – 1)}] x [(Mean Treatment – Mean Control) / $\sqrt{}$(((Treatment n – 1) x (Standard Deviation Treatment)^2 + (Control n – 1) x (Standard Deviation Control)^2) / ((Treatment n – 1) + (Control n – 1))}]. To "standardize" dichotomous outcomes, the effect size was calculated as: [log odds ratio / 1.65].

22 For the conversion table used to translate our 0.09 effect size into this "7 percent non-overlap" estimate, see http://web.uccs.edu/lbecker/Psy590/es.htm. The same conversion table was used to estimate our range of 0 to 20 percent non-overlap across all measures used in the study.

23 See http://web.uccs.edu/lbecker/Psy590/es.htm.

24 Percentile ranking is based on z-scores of a normal distribution (see Howell, 1989).

25 The "lower-achieving" group was slightly larger in size than the "higher-achieving" group because several cases clustered around the median score (2.0 on a scale of 1 to 5). Fifty-one percent of the sample had teachers respond that their overall academic performance was at a two or lower and were identified as lower achieving youth (n=498). Youth who had higher teacher reports of performance were identified as higher-achieving youth (n=481).

26 At baseline, higher academic performers differed from their lower performing peers in only three of our demographic and outcome measures: They had lower stress, better relationships with their teachers, and reported having slightly better relationships with their parents.

27 If SBM had no impact on any students, on average one in ten comparisons would appear significant simply by chance. We compared the impacts on four sets of groups across the 31 outcomes for a total of 124 comparisons.

28 All the covariates that will be included in the second stage are also included in the first stage, both because they are "clean" (i.e., by assumption they are not correlated with the unmeasured error in the outcome equation) and because they are needed for technical reasons to ensure that the covariates in the second stage are not correlated with the second-stage error term.

29 Fifteen-month Littles were doing better in science, teacher relationship quality, attendance, school preparedness, scholastic efficacy and classroom effort. They were also more likely to have a special adult in their life. These baseline differences are accounted for in analyses conducted for each outcome. For example, when testing for differences in science performance at either follow-up, the child's baseline science score is accounted for statistically. However, these differences could be indicative of other differences for which we were unable to control statistically.

30 We used regression models to estimate four treatment co-efficients, one for each type of Little at each follow-up assessment (i.e., one-school-year Littles at FU1, one-school-year Littles at FU2, 15-month Littles at FU1, 15-month Littles at FU2). This specification allowed us to compare whether the one-school-year and 15-month Littles' outcomes (relative to controls) were the same at each wave.

31 Fifteen of the 23 school-related outcomes changed in the undesirable direction for one-school-year Littles. Seven of these were significantly worse than the change experienced over time by the non-mentored youth.

32 Changes in outcome levels between the first and second follow-up for the 15-month Littles were (statistically) significantly different than zero only for youth involvement in serious school misconduct.

33 While 15-month Littles were doing significantly better than non-mentored youth on only one outcome (starting to skip school), their outcome levels were in the desired direction on 16 of the 23 school-related outcomes, compared to those of the non-mentored youth.

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