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Using Television as a Teaching Tool: The Impacts of *Ready To Learn* Workshops on Parents, Educators, and the Children in Their Care

Final Report

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Kimberly Boller
Cheri Vogel
Amy Johnson
Tim Novak
Susanne James-Burdumy
Lindsay Crozier
Stacey Uhl

Submitted to:

Public Broadcasting Service
1320 Braddock Pl.
Alexandria, VA 22314

Project Officer:
Charlotte Brantley

Submitted by:

Mathematica Policy Research, Inc.
P.O. Box 2393
Princeton, NJ 08543-2393
Telephone: (609) 799-3535
Facsimile: (609) 799-0005

Project Directors:
Kimberly Boller
Amy Johnson

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Partnering Agencies and Organizations:

- Child Care Education Resources; Child Care Resource Center; Child Care Resources; Child Development Resources and Services; The Family Guidance Center of Alabama, Inc.

- Child Care Resource and Referral of Central Iowa; Child Care Resource and Referral/Upper Des Moines Opportunities, Inc.; Woodbury County Community Action Agency Early Head Start; Iowa Even Start Family Literacy; Studebaker Elementary School, Head Start; Zach Hamlet Child Development Center

- Anderson Child Development Center; Avance Family Support and Education Programs; Bonham Elementary School; Fannin Elementary School; MLK Jr. Child Development Center; O.M. Roberts Elementary School

- Clark Elementary School; Clay Elementary School; Cole Elementary School; Columbia Elementary Community Education Center; Florissant Valley Child Development Laboratory Center

- Allan Elementary School; Blanton Elementary School; Ridgetop Elementary School; Zavala Elementary School

- Oakland Even Start; Ark Two Christian School; The Strength Through Diversity Conference

- Deepwater Early Learning Center; Deer Park Schools; DeZavala Elementary School; Garden Villas Elementary School; Gulf Coast Community Services Association Head Start; Southmayd Head Start; Sunnyside Head Start

- Anne Arundel County Child Care Resources; Baltimore City Child Care Resources; Baltimore County Child Care Resources; Prince Georges County Child Care Resources

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- Caldwell Early Childhood Center; Mid-Cumberland Head Start; Sumner County Department of Human Services

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- Akron Public School Head Start; Kids Play, Inc.

- Butler County Department of Job and Family Services

- Little People and Little People 2 Day Care Center; Washington Head Start; Indian Trail Elementary School; Southeastern Community College; Vance Elementary School; Wake County Community College

- Mercer County CASE; Mingo County Head Start; Monongalia County Head Start; River Valley Child Development Services; Stanaford Elementary School

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- Camden Elementary School; Southwest HRA Head Start

- Glen Oak School; Illinois Central College Child Care Connection; Valeska Hinton Early Childhood Education Center

- Family Resource Centers and Rochester Preschool Parent Programs; Miriam Family Resource; Southwest Family Resource Center

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EXECUTIVE SUMMARY

The PBS *Ready To Learn Television Service*, funded by a cooperative agreement from the U.S. Department of Education (ED), supports the development of children's educational television programs and online resources, and annually provides about 9,500 workshops for 160,000 parents and early childhood educators. These workshops are conducted in 148 PBS *Ready To Learn* stations across the country. The workshops are designed to enhance children's school readiness by teaching parents and educators to make better use of PBS children's programs. The main goal of the workshops is to explain and model the "*Ready To Learn* Learning Triangle—View-Read-Do." The Learning Triangle refers to the idea that adult-child interactions will involve *viewing* relevant children's television programs or video clips, *reading* a children's book, and *doing* an activity—all of which have similar themes. The Learning Triangle is designed to help adults extend the educational value of PBS children's programming by providing children the opportunity to practice and repeat important concepts. The goal of these related activities is to enhance children's learning through this repetition.

PBS and ED also require that stations make efforts to conduct outreach to four priority target populations: (1) families with low literacy, (2) families for whom English is not their primary language, (3) families living in rural areas, and (4) families with children who have disabilities. Children from these families are at higher risk for school failure than their peers and may benefit more from workshops and outreach conducted with their parents and educators.

THE EVALUATION

In 2000, PBS contracted with Mathematica Policy Research, Inc. (MPR) to conduct a five-year evaluation of *Ready To Learn* outreach. The evaluation includes an impact study of the effects of *Ready To Learn* workshops on participating parents and early childhood educators, as well as on the preschool children in their care. Conducted in 20 *Ready To Learn* stations, the impact study includes an experimental design with random assignment of interested parents and early childhood educators to either a *Ready To Learn* workshop or a control group that did not receive a *Ready To Learn* workshop. In addition, the impact study includes a descriptive analysis of the content and quality of the 85 *Ready To Learn* workshops that study participants attended. This, the second of two impact study reports, reviews the content and quality of the observed workshops and the characteristics of the parents and educators in the study, and examines the impacts of attending a *Ready To Learn* workshop on

parents, early childhood educators, and the children in their care, measured six months after workshop participation.

Twenty *Ready To Learn* stations were purposively selected to participate in the impact study. *Ready To Learn* Coordinators at each of these stations worked with their community partners to recruit parents or educators of children 3 to 5 years old for study workshops. Parents and educators had an equal chance of being randomly assigned to participate in a workshop or receive an alternative control condition (getting a stipend or attending a workshop on a topic unrelated to children's school readiness). From September 2002 through April 2003, stations recruited 1,415 parents and 904 educators to participate in the impact study, and MPR conducted structured observations of 85 workshops. Random assignment was successful—at the time of study recruitment, characteristics of those randomly assigned to the workshop group were similar to those in the control group. The response rates for adults completing a baseline survey, a three-month telephone interview, and a six-month interview (for educators by telephone and for parents in person) were high, with an overall response rate of 99 percent for the baseline, 90 percent for the three-month followup, and 87 percent for the six-month followup. As part of the six-month data collection, children were assessed in their homes if they were between the ages of 3 and 6. From our parent sample, we conducted 1,060 child assessments (a 78 percent response rate).

WORKSHOP CHARACTERISTICS

On average, the 85 workshops included in the study lasted 90 minutes, and most were one session, rather than a series of sessions. Among the 31 percent of workshops that were designed to include more than one session, subsequent attendance was sporadic.[1] The *Ready To Learn* Coordinator was usually the workshop facilitator, and most workshops were conducted in English; if participants spoke other languages, the workshop and materials were often translated. Structured observations indicated that 65 percent of the workshops covered all items required by PBS guidelines for workshop content and 61 percent of the workshops were rated high ("very good" or "excellent") in presentation quality (none were rated as "poor" in quality). Overall, 45 percent of the workshops covered all key content areas and received a high rating on presentation quality. In a majority of workshops, participants were given children's books, producer-created materials, program guides, and View-Read-Do planning sheets. Seventy-two percent of workshop facilitators planned mail or in-person followup with participants (such as sending program guides or *PBS Families* and *PBS para la Familia* magazines, or conducting additional workshops), and by six months after the workshop, 55 percent of parents and 39 percent of educators in the workshop group reported that they had received such followup.

[1] At the first followup, 17 percent of parents and 30 percent of educators reported that they had attended at least one of their scheduled subsequent sessions; among those who attended a subsequent session, the average number attended was two.

PARTICIPANT CHARACTERISTICS

Ready To Learn workshops are reaching a broad and diverse population. The majority of workshop participants are in the priority target populations, but the workshops also serve a substantial portion of other people. Sixty-one percent of parents are in one of the four target populations described earlier, and 83 percent of educators teach at least some children from families in at least one of the target populations. Seventeen percent of educators indicated that they work with at least some children from all four target populations. Twenty-five percent of educators work with children from one target population, 20 percent with children from two of the four target populations, and 22 percent with children from three of the four target populations.

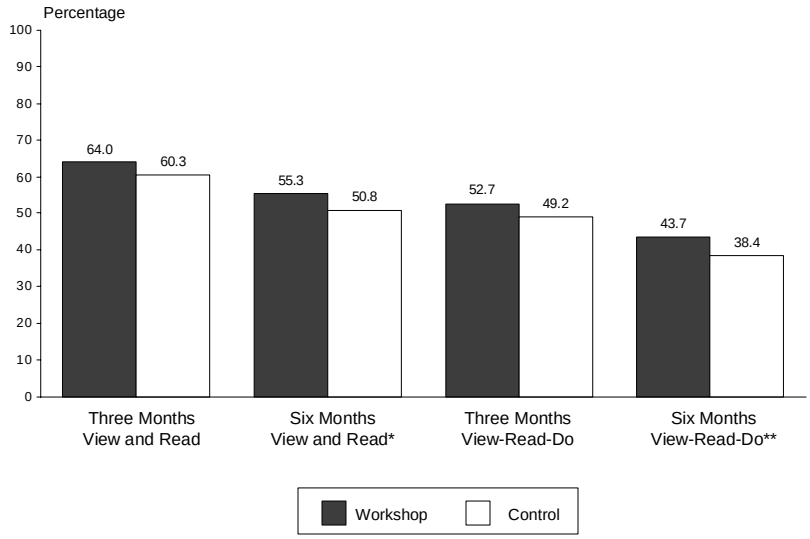
Workshops are reaching a diverse group in terms of literacy, based on reported education as an approximation of parents' literacy levels. Twenty-eight percent of parents reported that their highest level of education was less than a high school diploma or GED, 22 percent achieved a high school diploma or GED as their highest level of education, and another 22 percent held a two- or four-year college degree. Among educators, just over half reported that they teach some children who are from low-literacy families; 20 percent said that this constitutes half or more of those they teach.

Workshops are reaching those with limited English proficiency. About one-fifth of parents reported that they did not speak English at home. Among educators, almost 40 percent indicated that they teach at least some children for whom English is their second language. Fifteen percent said this is at least half of all those they teach.

Fifteen percent of parents with children in the study's target age range—between the ages of 3 and 5—reported that they had a child with at least one special need, the largest category of which was a speech impairment. Over half of the educators reported that they teach at least one child with special needs; for 7 percent, this constituted half or more of all those they teach.

Parents were a diverse group, with approximately one-third identifying themselves as African American, one-third Hispanic, and one-third White (non-Hispanic). Half of study parents were employed either full- or part-time; 30 percent were homemakers and 20 percent were either unemployed, disabled, or in school. Eighteen percent of parents reported they received Temporary Assistance for Needy Families (TANF) and 60 percent received at least some form of supplemental income support (Women, Infants, and Children; food stamps; or TANF).

Figure 1: Three- and Six-Month Impacts on Learning Triangle Activities—View and Read/View-Read-Do



Source: Parent and Educator First and Second Follow-Up Surveys.

*Estimate significantly different from zero at the 90% confidence interval, two-tailed test.
**Estimate significantly different from zero at the 95% confidence interval, two-tailed test.

IMPACT ANALYSIS FINDINGS

The impact analyses were designed to test hypotheses flowing from our conceptual framework about how workshop participants and the children in their care are affected by adult attendance at a *Ready To Learn* workshop. Briefly, background characteristics of parents and educators may affect potential participants' interest in and response to *Ready To Learn* workshop lessons. Workshop characteristics may affect the likelihood of changes in adult behaviors over the short- and longer-term, such as engaging in View-Read-Do Learning Triangle activities with children and co-viewing television programs with children. Children, too, may experience the effects of their parents' or educators' participation in the workshop if these adults experience behavioral changes as a result of workshop attendance. We tested the central set of hypotheses that, compared to those who do not attend a workshop, adults who attend a *Ready To Learn* workshop will be more likely:

- To engage in activities with children that reinforce and repeat the educational lessons viewed on television (Learning Triangle activities: four outcomes measured in this area)

- To spend less time viewing television overall and more time co-viewing television, especially PBS programming, with their children (television viewing and co-viewing: 10 outcomes measured in this area)

- To have positive attitudes toward PBS, the use of television as an educational tool, and monitoring children's viewing (attitudes toward television and PBS: 10 outcomes measured in this area)

- To have a greater number of children's books available to children and read more often with children (books and reading frequency: three outcomes measured in this area)

- To use PBS online resources (two outcomes measured in this area)

We tested hypotheses that, compared to the children in the care of those who do not attend a workshop, children in the care of workshop participants will be more likely:

- To demonstrate stronger language and emergent literacy skills (10 outcomes measured in this area)

- To score higher on tests of cognition and general knowledge (five outcomes measured in this area)

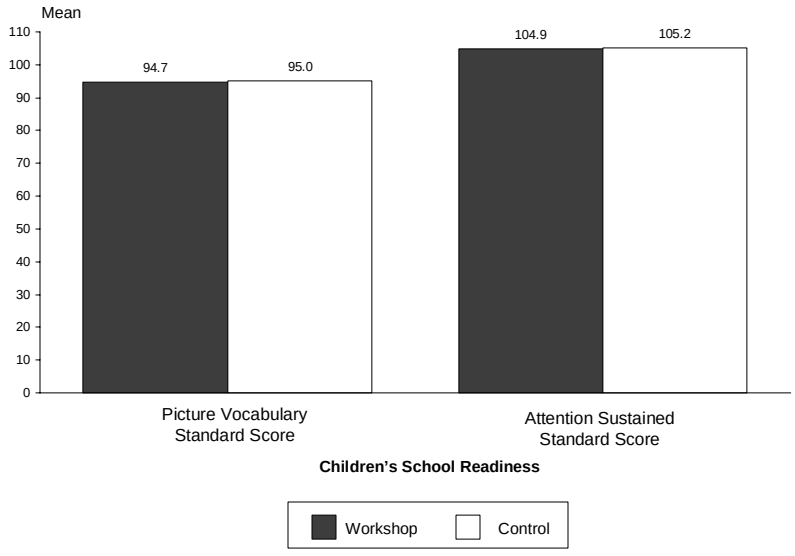
- To exhibit more mature social and emotional development (four outcomes measured in this area)

- To exhibit more advanced approaches to learning (two outcomes measured in this area)

We also examined whether participants with certain background characteristics were affected more or less than other participants. This subgroup analysis was designed to answer the question, "For whom are workshops effective?" Finally, we assessed the extent to which certain characteristics of workshops may be associated with impacts on participant behaviors. This subgroup analysis was designed to answer the question, "What types of workshops are more effective?"

Overall Impacts. In our analysis of the impacts of *Ready To Learn* workshops on adults, we found similar patterns of workshop-control group impacts at both three and six months (Figure 1 illustrates the impacts for two Learning Triangle activities). Some of the impacts were significant. There were small impacts at three or six months on Learning Triangle behaviors, including viewing and talking with children about programs or characters; viewing and reading a related book; and viewing, reading, and doing a related activity—the full Learning Triangle. At three months, children of adults who attended a workshop were watching less adult-focused television than children of controls, but they were watching the same amount of television overall. At both periods, there were impacts on co-viewing PBS KIDS programming. The effect sizes were small at 13 and 8 percent for three and six months, respectively. At six months, those in the workshop group were more likely to visit one of the PBS Web sites than the control group. At baseline, adult attitudes toward PBS children's programming and toward television were very positive and were not

Figure 2: Six-Month Impacts on Children's Development



Source: Child Assessment and Parent Second Follow-Up Survey.

affected by workshop participation. There were no effects on other outcomes of interest, including children's time spent viewing television, viewing PBS KIDS programming, number of available children's books, or time parents and educators spent reading to children. At six months, the actual amount of time parents reported co-viewing children's television programming did not differ between workshop and control groups.

We measured children's school readiness in multiple domains (noted above) but found no differences between children whose parents were in the workshop group and those whose parents were in the control group (Figure 2 illustrates the impacts for selected outcomes).

Participant Subgroup Impacts. Across the participant characteristics studied[2] (parents versus educators; parent education; parent employment; urban versus rural; race/ethnicity; children's age, gender, and child care participation), there were no consistent, significant patterns of positive impacts on one group of participants compared to another. Thus, workshop impacts were similar for all types of participants. Although the parent and educator subgroup impacts were not significantly different from each other, the coviewing PBS KIDS impacts are concentrated in the parent group at both three and six months. At

[2] We analyzed characteristics that captured whether participants were members of the target populations and characteristics that distinguished pre-workshop behaviors.

six months, workshop group parents were more likely than control group parents to use information from the PBS Web sites.

Workshop Subgroup Impacts. We studied whether workshops that had certain characteristics (covered all required content, had a high-quality presentation, both covered all content and had a high-quality presentation, included time to plan a View-Read-Do activity, included practice time for a View-Read-Do activity, included a demonstration of how to read to children, and were longer) were more effective than those that did not have these characteristics. At three months, providing time for planning a View-Read-Do activity was related to the implementation of Learning Triangle behaviors. At six months, none of the workshop characteristics we examined was associated with impacts on adult behaviors or child outcomes.

CONCLUSIONS

The evidence from this study establishes some link between *Ready To Learn* workshops and adults' self-reported behaviors three and six months after the workshop. The effect sizes of reported impacts, however, are small, and the impacts on adult behaviors did not translate into impacts on the children of parents in the study. A few outcomes were affected by workshop participation, including PBS co-viewing across the three- and six-month follow-up periods, a general pattern of positive overall impacts in several Learning Triangle behaviors, and visiting the PBS Web sites. Considering that the workshops were often one-time interventions, only 90 minutes long on average, finding significant impacts on the adult behaviors six months after workshops occurred suggests that this approach to conveying messages about television use with young children, while modestly effective, has limited reach in terms of the range of outcomes affected. In general, both the workshop group and the control group reported doing the outcome activities less often at six months than they had at three. The significant differences between the two groups at six months are a function of the workshop group sustaining their behaviors more than the control group did.

Our conceptual model hypothesized that workshops would affect adult behaviors, which would, in turn, affect children's developmental outcomes. However, enhancing children's school readiness to the point of significant improvement on standardized tests usually requires a large investment in child-focused or two-generation interventions involving intensive individualized support of children's strengths and identification of and focused work on their needs (Administration for Children and Families 2002; Campbell et al. 2002; Hill et al. 2003; and Olds et al. 1994). However, in general, these impacts have been the result of interventions that focus directly on children or on both parents and children and provide multiple services over extended periods of time (from six months to three years). Thus, it is possible that we found no impacts on child outcomes because *Ready To Learn* workshops were not implemented as intensively or with the same focus as the interventions described above.

What do these findings suggest for program improvement? Based on the impact findings, as well as descriptive information, PBS and ED might consider these questions about possible ways to improve *Ready To Learn* outreach and workshops:

- ***How can workshop implementation and followup be enhanced?*** The small impacts on adult behaviors found three months after workshop participation—and, to a lesser extent, six months after workshop participation—suggest that greater intensity of services through increased followup after workshops, or through additional workshops, may strengthen these findings. Seventy-two percent of workshop facilitators planned on conducting some type of followup, but only 55 percent of parents and 39 percent of educators reported receiving any followup after 6 months. It is not clear whether greater workshop intensity will lead to greater impacts on the adults and that these impacts will, in turn, translate into impacts on the children in their care. We can only speculate that this relationship between adult and children's behaviors is correct, in which case extending the lessons may also be more likely to produce the desired impacts for children. Increased exposure to workshop messages through longer or multiple workshops and more regular and frequent distribution of follow-up materials may also be useful.

- ***How can workshop quality and content coverage be improved?*** Although most of the workshops were of high quality and over 60 percent covered all of the required content, there is still room to improve workshops in these areas. In addition, allowing workshop participants time to plan a View-Read-Do activity was related to short-term, positive impacts on adults doing the Learning Triangle with children. The findings suggest that PBS may strengthen the program by continuing to work with stations to define workshop content requirements and to support Coordinators' efforts to incorporate these requirements into workshops.

- ***How can stations be encouraged to focus their workshop recruiting efforts on the four target populations?*** Focusing outreach efforts more exclusively on these individuals and working closely with community partners who serve them (for example, in Head Start and Even Start) may increase the proportion of target population group members attending workshops. We note that the impact analysis did not find that workshops for adults in the target populations were more effective. However, focusing recruitment on those with fewer resources is still important, given that one of *Ready To Learn*'s goals is reaching children who are at risk for school failure. Children from both the workshop and the control groups in higher-risk families scored significantly lower on many of the school readiness measures than did children in lower-risk families.

CHAPTER I

READY TO LEARN AND THE RESEARCH CONTEXT

Heightened awareness of the importance of early education in improving the long-term prospects of educational and economic success has resulted in a push for more interventions that target young children. The Public Broadcasting Service (PBS) and the Corporation for Public Broadcasting (CPB) have been at the forefront of developing and broadcasting educational programming designed specifically for preschool children. These agencies have coupled this programming with outreach to parents and educators that is specifically designed to teach ways to use PBS television and other educational resources to help prepare children for school.

The PBS *Ready To Learn Television Service*, funded by a cooperative agreement from the U.S. Department of Education (ED), supports the development of children's educational television programs and online resources, and annually provides about 9,500 workshops for approximately 160,000 parents and early childhood educators. These workshops are designed to make parents and educators more aware of how they use television with the children in their care and to teach them how to extend lessons from the PBS children's programs by reading related books to the children and doing a related activity, such as a craft project or educational game. Since *Ready To Learn* began in 1995, the parents and educators of almost 8 million children have attended workshops in their local communities conducted by participating PBS stations.[1] PBS *Ready To Learn* station broadcasts reach 91.7 million U.S. households. PBSKIDS.org receives more than 230 million "page visits" per month, with users spending an average of 34 minutes per visit (Kristen Willard, personal communication, May 10, 2004).

In 2000, PBS contracted with Mathematica Policy Research, Inc. (MPR) to conduct a five-year evaluation of *Ready To Learn* outreach. The evaluation includes (1) a process study of how *Ready To Learn* outreach to parents and educators is conducted at participating stations; and (2) an impact study of the effects of *Ready To Learn* workshops on participating

[1] For more information about the history of the *Ready To Learn Television Service*, see Vogel et al. 2001.

parents and early childhood educators, as well as on the children in their care.[2] Conducted in 20 *Ready To Learn* stations, the impact study includes a rigorous experimental design with random assignment of interested parents and early childhood educators either to the *Ready To Learn* workshop or to a control group that did not receive a *Ready To Learn* workshop. In addition, the impact study includes a descriptive analysis of the content and quality of the 85 *Ready To Learn* workshops that study participants attended.

An interim report (Johnson et al. 2003) focused on the content and quality of the observed workshops, the characteristics of the parents and educators in the study, and the impacts of attending a *Ready To Learn* workshop on parents and early childhood educators three months after workshop participation. A summary of the findings from that report is included in this report. This final report focuses on the longer-term impacts of attending a *Ready To Learn* workshop for parents and early childhood educators, as well as impacts on the school readiness of the children in their care. All impacts are measured at three and six months after parent and educator workshop participation.

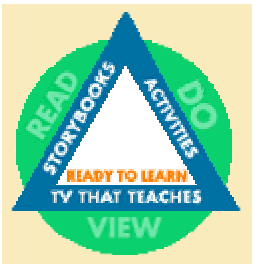
THE *READY TO LEARN TELEVISION SERVICE,* STATION REQUIREMENTS, AND COMMUNITY PARTNERSHIPS

The *Ready To Learn Television Service* has two primary objectives: (1) developing new children's television programming and online resources; and (2) supplementing new and existing children's television programs with outreach efforts to help parents and early childhood educators (including family child care providers, center-based child care providers, and preschool, kindergarten, and early elementary school teachers) use these programs as teaching tools with the children in their care.

One of the main goals of the workshops is to explain and model the "*Ready To Learn* Learning Triangle—View-Read-Do." The "Learning Triangle" refers to the idea that adult-child interactions will involve *viewing* relevant children's television programs or video clips, *reading* a children's book, and *doing* an activity—all of which have similar themes (Figure I.1). The activities can be done in any order, although the adult is expected to make clear the connections among the activities. The Learning Triangle is designed to help adults extend the educational value of PBS children's programming by providing children the opportunity to practice and repeat important concepts. For example, if a child views a program segment about the letter "A," a parent might then read a book focused on the alphabet with the child, and later help the child glue cotton balls onto paper in the shape of an "A".

[2] Two previous reports discuss lessons learned about implementing the *Ready To Learn* program (Vogel et al. 2001; and Vogel et al. 2002).

Figure I.1: The View-Read-Do Learning Triangle



PBS supports *Ready To Learn* stations in their outreach efforts by providing each station with funding, training, and technical assistance. Core requirements for participating stations are that they broadcast a minimum of six and one half hours of PBS KIDS programming per weekday; conduct a minimum of 20 workshops per year; distribute children's books to those with limited resources; and distribute *PBS Families* and *PBS para la Familia* magazines. PBS and ED also require that stations make efforts to conduct outreach to families in four priority target populations: (1) families with low literacy, (2) families for whom English is not the primary language, (3) families living in rural areas, and (4) families with children who have disabilities.

Stations meet these requirements by forming partnerships with local organizations that provide services for, or teach, children through 8 years of age. Partners include a variety of community service providers and organizations, including elementary schools, local libraries, Head Start programs, Even Start programs, and child care providers. Coordinators have the flexibility to then tailor certain aspects of *Ready To Learn* outreach within their respective communities. They determine whether they will offer workshops for parents, early childhood educators, or both; whether they will conduct all the workshops themselves or train other staff members or community partners to conduct workshops; and whether they will offer single- or multi-session workshops. Together with their community partners, Coordinators determine how long each workshop session will last, though PBS guidelines recommend that workshops be at least one hour long.

To support Coordinators and stations in meeting professional development requirements, PBS provides training and technical assistance. PBS requires that all Coordinators attend an annual *Ready To Learn* professional development seminar. In July 2002, PBS conducted intensive training for Coordinators on the key topics that must be covered in all workshops (we discuss this list of topics in Chapter III).

More recent requirements relate to station data collection and reporting policies (see Figure A.1). As of September 2003, PBS requires stations to collect accurate information on the number and characteristics of participants at each *Ready To Learn* workshop. Only workshop participants who are parents or who work directly with children are to be counted in the overall calculation of those served.

THE RESEARCH CONTEXT

Near universal media access, coupled with children's love of television, has dramatically expanded the opportunities for using television for educational purposes.[3] Almost every home with a young child has a television and a videocassette recorder (VCR), with 78 percent subscribing to cable or satellite television (for national estimates of children's media use, see Rideout et al. 2003; Woodard and Gridina 2000; Roberts et al. 1999; and Wright et al. 2001). Early childhood educators also have access to a wide variety of media to use as they care for and teach young children. In 1995, 82 percent of public school classrooms had access to broadcast television, and 72 percent had access to cable television (NCES 2001).

National estimates of television viewing for children under 7 years old range from an average of 2 to 2.5 hours per day (Rideout et al. 2003; and Roberts et al. 1999). However, on average, only about 29 percent of children's total viewing time is considered educational (Bickham et al. 2003). Were more of this time spent viewing educational programming, the impact of television on children's school readiness might be greater.

In the early 1970s, only a handful of television programs were designed specifically to educate preschool children. Today, there are almost two dozen PBS KIDS programs designed for preschool children, as well as a number of other educational children's programs broadcast by other networks. A growing body of research indicates that viewing PBS educational programming promotes the cognitive and language skills that children need to succeed in school, as well as their social and emotional development. Studies of *Sesame Street*, *Between the Lions,* and *Dragon Tales* have all shown positive effects from viewing on emergent literacy skills, cognitive and emotional development, and social collaboration (Ball and Bogatz 1970; Bogatz and Ball 1981; Zill, Davies, and Daly 1994; Rice et al. 1990; Anderson et al. 1998; Linebarger 2000; and Rust 2001). A recent study that analyzed children's television time use and included periodic developmental assessments found that watching educational programs was related to the acquisition of early academic skills (Wright et al. 2001). While some of these studies have non-experimental designs that make it difficult to draw causal inferences, a few studies (Ball and Bogatz 1970; and Bogatz and Ball 1981) using experimental designs support the inference that viewing educational programs *causes* the observed improvement in school readiness skills.

The wide selection of viewing options targeted toward children—many of which are non-educational in content—makes encouraging parents and educators to direct children toward educational programming increasingly important. There is, however, little rigorous research that looks at the effectiveness of efforts to train parents and educators on ways to promote educational television viewing and further enhance the educational benefits of their content. A few studies suggest positive associations between training programs and co-viewing techniques, rules about television viewing for children, frequency of children's viewing educational programs, and frequency of reading to children (Bryant et al. 1999). A

[3] A more thorough review of the research described in this section is provided in the study's interim report; see Johnson et al. 2003.

recent quasi-experimental study of the effects of *Between the Lions* found that when center-based preschool, kindergarten, and first-grade teachers in two very rural, low-income areas had the children in their care view *Between the Lions* twice per week, read them a related book, and then led them in a related activity, children's reading and vocabulary test scores were enhanced under some conditions (Prince et al. 2002).

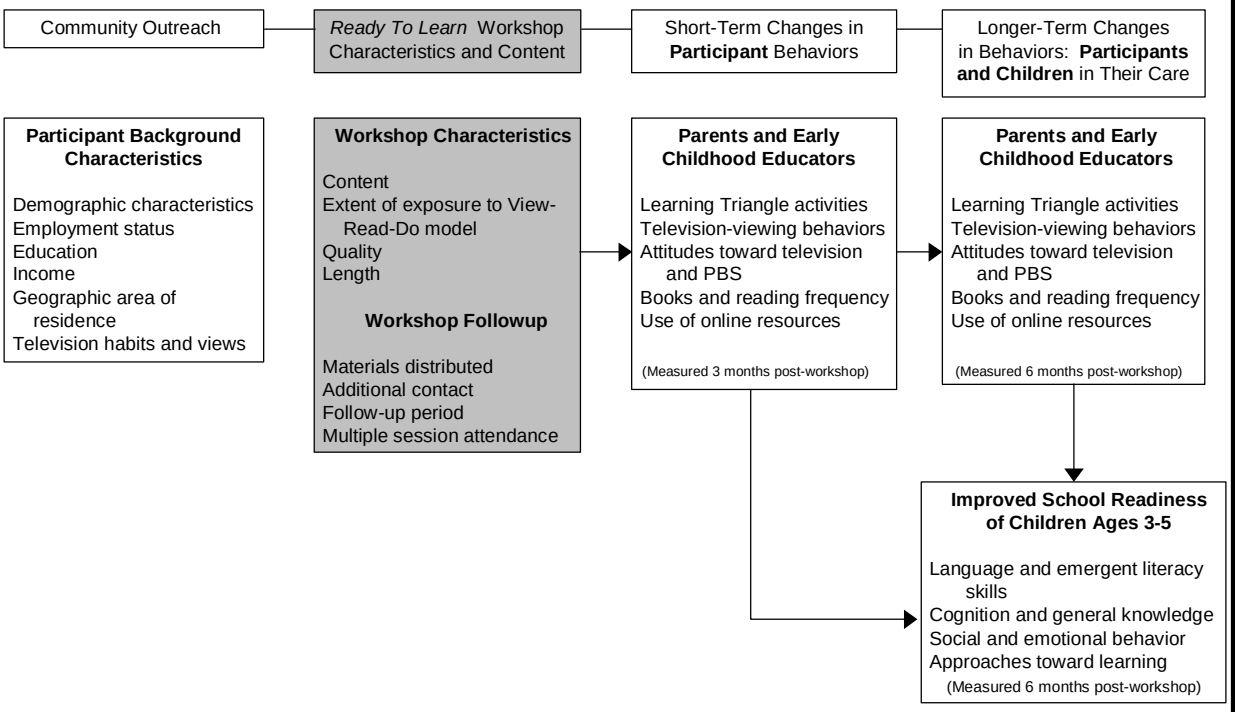
THE CURRENT IMPACT STUDY

This earlier research suggests potential promise from an intervention in which adults are trained to enhance the value of educational television programming through View-Read-Do activities; however, it is only suggestive, due to the various studies' design limitations. To address this, we designed the current evaluation of *Ready To Learn* outreach to answer the question of the program's impact using a rigorous random assignment design with both a short-term (three-month) and a longer-term (six-month) follow-up period, a large sample size, and observations of workshop content and quality that can be used to interpret impacts and guide program improvement. The design allows us to measure impacts of workshop participation on parents, educators, and the children in their care. The study was designed to address four core questions:

1. Who participates in the *Ready To Learn* workshops observed in the study?
2. What do the workshops observed actually provide?
3. How do key behaviors of parents and educators change as a result of workshop participation?
4. How do *Ready To Learn* workshops affect the school readiness of children cared for by workshop participants?

We developed a conceptual framework to guide our study's design and data analysis that reflects the hypotheses about how workshop participants and the children in their care are affected by adult attendance at a *Ready To Learn* workshop (Figure I.2). The first column on the far left shows the background characteristics of parents and educators that may affect potential participants' interest in and response to *Ready To Learn* lessons. The second column shows such workshop characteristics as format, content, quality, and followup, which could affect the likelihood of changes in short- and longer-term behaviors for workshop participants. The short-term and longer-term behaviors in the third and fourth columns, respectively, focus on participants' application of *Ready To Learn* lessons, such as engaging in View-Read-Do Learning Triangle activities with children and co-viewing television programs with children. Children, too, may experience the effects of their parents' or educators' participation in the workshop if these adults experience behavioral changes as a result of workshop attendance. In the interim report on short-term (three-month) impacts, we tested the central set of hypotheses depicted in the first three columns that, compared to those who do not attend a workshop, adults who attend a *Ready To Learn* workshop will be more likely:

Figure I.2: Conceptual Framework for *Ready To Learn* Workshop Participation



- To engage in activities with the children in their care that reinforce and repeat the educational lessons viewed on television—the Learning Triangle
- To spend time co-viewing television, especially PBS programming, with their children
- To have positive attitudes toward PBS, the use of television as an educational tool, and monitoring children's viewing
- To have a greater number of children's books available to the children in their care and read more to children
- To use PBS online resources

We also assessed the extent to which certain characteristics of workshops may be associated with impacts on participant behaviors (depicted in the second column of Figure I.2). This subgroup analysis was designed to answer the question, "What types of

workshops are more effective?" Finally, we examined whether participants with certain background characteristics were affected more or less than other participants (depicted in the first column of Figure I.2). This subgroup analysis was designed to answer the question, "For whom are workshops effective?"

In the current report, we again focus on the hypotheses above, now to determine whether short-term impacts are sustained over the longer term—six, rather than three, months after workshop attendance (the fourth column). In addition, we test another hypothesis in the television viewing/co-viewing area: that those who attend workshops will be more likely to have children who decrease the amount of television viewing overall and potentially increase their PBS viewing while decreasing viewing that is not educational. We also assess the outcomes for the children in the care of workshop participants—in particular, outcomes related to school readiness, for those who were 3 to 5 years of age at the time of the initial workshop (the fourth column). We test hypotheses (depicted in the lower box of the fourth column) that compare children in the care of those who do not attend a workshop with those in the care of workshop participants, who are more likely:

- To demonstrate stronger language and emergent literacy skills
- To score higher on tests of cognition and general knowledge
- To exhibit more mature social and emotional development
- To exhibit more advanced approaches to learning

Because *Ready To Learn* workshops ultimately are intended to benefit children through improved school readiness in areas such as vocabulary acquisition and prosocial behavior, these are core outcome measures for determining program success.

In the following chapters, we address the study's core questions. Chapter II describes the study's methodology, Chapter III summarizes workshop and participant characteristics (reported in more detail in the study's short-term impact report). Chapter IV presents both a summary of the short-term impacts and findings from the analysis of six-month follow-up data, including the assessment of children's school readiness. Chapter V presents subgroup findings, and Chapter VI discusses the implications of the findings for *Ready To Learn* program improvement.

CHAPTER II

STUDY METHODS AND DESIGN

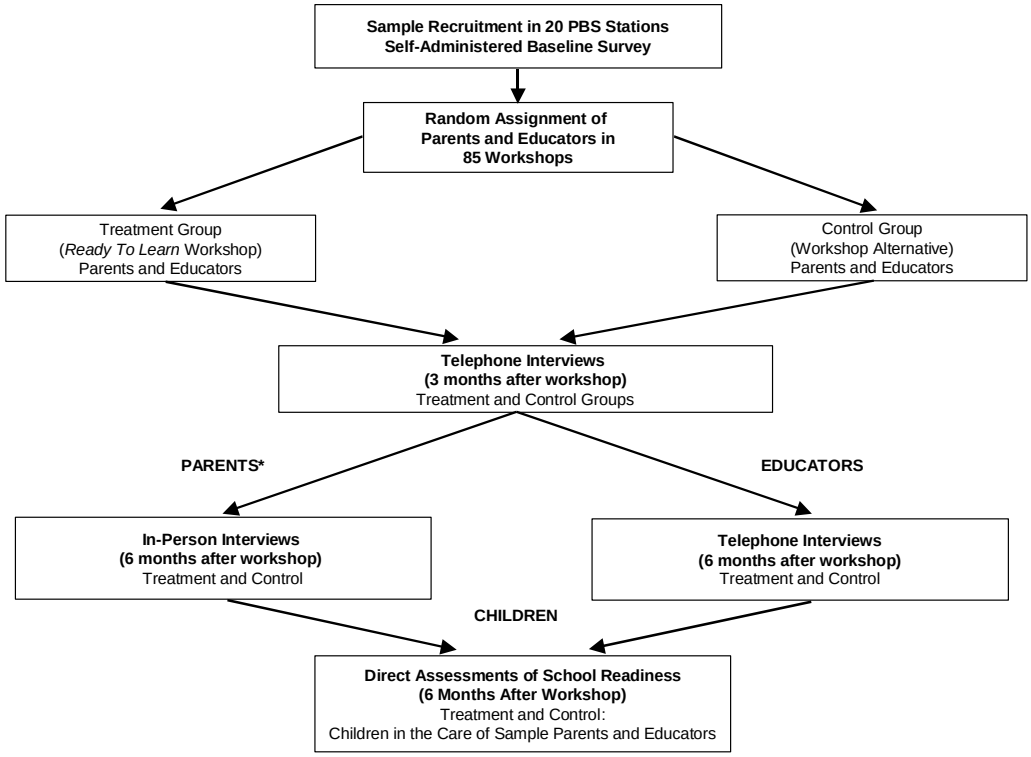
The *Ready To Learn* study was designed to answer four key questions: (1) Who participates in *Ready To Learn* workshops? (2) What do *Ready To Learn* workshops provide? (3) What are the impacts of *Ready To Learn* workshop participation on parents and educators? and (4) How do workshops affect the school readiness of children cared for by workshop participants? We addressed these questions using an experimental design in which parents and early childhood educators were randomly assigned to attend a *Ready To Learn* workshop or not to attend. The advantage of a well-implemented, random assignment design is that it allows us to state with a measurable degree of certainty the effects of workshop participation on short- (three-month) and longer-term (six-month) adult behavioral changes and children's school readiness.

The study design entailed selecting PBS *Ready To Learn* stations, then working with each station's Coordinator to schedule workshops to recruit parents and educators into the study.[1] We collected information from consenting study members through surveys administered at three points in time: (1) prior to random assignment (baseline), (2) three months after the workshop (first followup), and (3) six months after the workshop (second followup). At six months, in addition to information on adults' attitudes about television and literacy-related behaviors, we collected data on the school readiness of a "focus child"[2] in the care of study

[1] A full description of the station selection procedure is included in the following section.

[2] Workshop recruitment focused on parents and educators caring for children 3 to 5 years old. To ensure that we did not exclude focus children who turned 6 during the study period, adults reported on and we conducted assessments with children 3 to 6 years old (on average, children were 4½ years old when assessed). For parents, the focus child was selected from among children aged 3 to 6 in their care, identified at the time of the three-month interview, and asked about again at the time of the six-month interview, when assessments were completed. We also identified children aged 3 to 6 in the care of educators. At the three-month follow-up survey, we asked educators to give us a list of all children aged 3 to 6 in their care, randomly ordered these lists, and asked educators to contact the parents of the four highest-ranked children on the list. The parent of the highest-ranked child who agreed to be contacted was also interviewed and the child assessed. Later sections describe this process and the associated response rates in detail.

Figure II.1: Data Collection Design



*Includes parents recruited through educators in order to assess a child in the care of educators in our sample.

participants through standardized direct child assessments (Figure II.1 illustrates the study design and data collection points).

In our interim report (Johnson et al. 2003), we answered the first three questions above in terms of short-term impacts on parents and educators. In this report, we summarize the three-month findings and add the six-month findings to measure workshop impacts related to longer-term adult and child developmental outcomes. Our analysis compares the mean outcomes for the workshop (treatment) and control groups.

This chapter briefly summarizes the methods by which we selected the sample and the conditions to which we randomly assigned the sample, then discusses technical aspects of the random assignment procedures, sample response rates, outcome measures, and the statistical methods we used to estimate impacts. Additional tables and further technical details can be found in Appendixes B and C.

STATION SELECTION

We began by selecting a purposive sample of 20 PBS stations to participate in the study. The selection of stations was conducted with input from PBS, with consideration given to the stations' (1) capacity to do a random assignment study (in terms of average number of participants in workshops and the average number of workshops conducted annually); (2)

number of community partners; (3) geographic representation (urban and rural, as well as region of the country); and (4) ability to provide exemplary workshops. In comparison to all PBS stations nationally, this group of 20 was somewhat more likely to serve urban rather than rural areas, more likely to be of medium or larger size (according to the number of paid staff members), and less likely to be located in the Northeast or Midwest (Table B.1).

Within each participating station, Coordinators and their community partners determined a strategy for recruiting a larger population of workshop participants than they normally would (to create the control group) and developed a suitable control group condition. We initially estimated that each station would have to conduct roughly four workshops to enroll approximately 160 participants into the sample; in the end, some stations conducted more than four workshops and some conducted fewer, based upon local challenges and opportunities for recruitment (Table B.2). On average, we recruited 26 parents per parent workshop into the study and 29 educators per educator workshop.

All sample members gave their consent to be in the study and to adhere to the random assignment decision. We did not screen out those who had previously attended a *Ready To Learn* workshop, although we attempted to recruit those without such prior exposure, as well as those with children in the 3- to 5-year age range for whom the impact on school readiness would be the most relevant.

WORKSHOP AND CONTROL CONDITIONS

All decisions about the workshop—such as structure, content, length, and number of sessions—were intended to be independent of the study and were made by the station Coordinators and partners.[3] We measured the content and quality of each workshop (or the first in a planned series) through observations by trained observers using a uniform protocol (described further in Chapter III).

The control condition varied by station and by workshop, according to local preferences and based on a menu of allowable options determined by MPR. We allowed a number of variations so long as they did not include lessons or services that seemed to address topics that would be covered in a *Ready To Learn* workshop. These alternatives included workshops on such topics as holiday food preparation, nutrition, and arts and crafts. In some cases, the alternative was simply the receipt of a stipend for cooperation with the study.

RANDOM ASSIGNMENT

Random assignment procedures were implemented with the following guiding principles: (1) participants would have an equal probability of assignment to either the workshop or the control group; (2) we would allow latecomers to be assigned (those arriving after random assignment had been completed for the rest of the group), again with equal

[3] The structure and content of workshops was not expected to vary much among the workshops because all Coordinators completed a training in July 2002 that included PBS's guidelines in these areas.

probability of being in either group; and (3) we would allow clusters of participants, such as parents of the same child or educators in the same classroom to be assigned as a unit.[4]

We conducted random assignment either on-site or in advance, depending upon the preferences, needs, and circumstances of each workshop facilitator and partner. Each method had advantages and disadvantages.[5] Of the total 85 *Ready To Learn* study workshops conducted, 60 had on-site random assignment and 25 had advance random assignment.

To maintain the integrity of the random assignment design, all those assigned to the workshop group remained in that group regardless of whether they participated in the workshop.[6] We asked those assigned to the control group to refrain from attending a *Ready To Learn* workshop through the end of the data collection period (roughly six months after the workshop); although we could not effectively track compliance, we have little reason to believe that many ignored our request. Regardless of whether they later attended a *Ready To Learn* workshop, all control group members remained in the control group.

We found few differences between workshop and control groups on baseline characteristics for parents and educators (Tables B.3 and B.4). Given the number of comparisons and our threshold of 10 percent significance, we would expect four of these comparisons to differ by chance within parent and educator groups. In fact, we saw four or fewer significant differences in each group (only one of the parent characteristics and four of the educator characteristics); therefore, we conclude that random assignment was successful. We adjust for baseline characteristics in our regression models.

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[4] In cases where parents of the same child or educators in the same classroom enrolled in the study, we randomly assigned them as a unit. See Appendix C for further discussion of the effects of this clustering and the ways we accounted for it.

[5] The advantage of on-site random assignment was that there were no "no-shows" or people who were assigned to the workshop but did not attend (since all study members assembled at the workshop site). The disadvantage of on-site random assignment was that latecomers and logistical problems (such as computer malfunction) often extended the time required to complete random assignment. The advantages of advance random assignment were that it saved time at the start of the workshop and did not require control group members to come to the workshop facility. The disadvantage was that it resulted in a higher no-show rate because some of those who were assigned to the workshop group did not then attend (they were still included among those in the treatment group).

[6] There were 149 sample members assigned to the treatment group who ultimately did not attend a *Ready To Learn* workshop; they have been included in the impact analyses as workshop group members. The impact estimates generated from the analyses reflect an "intent-to-treat" design; in other words, the impacts are measured as the average outcome across all sample members, including workshop group members who did not attend a Ready To Learn workshop. We took this approach because it retains the integrity of the random assignment design, since we have no way to determine which of the control group members would be analogous to the treatment group participants. That is, we do not know which of the control group members would have participated if given the opportunity and which would not have. For completeness, we also examined the effects on workshop participants through a two-stage least squares analysis. The results of both approaches are similar, possibly because participation rates were high.

STUDY SAMPLE AND RESPONSE RATES

From the 20 participating stations, we enrolled a total of 2,319 adults into the study beginning in late September 2002 and ending in early April 2003. Of that total, 61 percent (n = 1,415) were parents and 39 percent were educators (n = 904). Sample members were split almost evenly between workshop and control groups (51 percent and 49 percent, respectively).[7]

We report response rates from each wave of data collection. The baseline survey, available in both English and Spanish, was simple and brief, collected a minimal amount of information on basic demographic characteristics and television attitudes, and was completed prior to random assignment.[8] We attempted to collect follow-up survey data on all study participants three months after random assignment, and we collected second follow-up data six months after random assignment, including surveys of parent and educators and direct assessments of children's development.

The response rates for adults in all three survey waves[9] were high, with an overall response rate of 99 percent for the baseline, 90 percent for the first followup, and 87 percent for the second followup (Table II.1).[10] Response rates in both the parent and educator groups at the second followup were high—nearly 90 percent of parents and 83 percent of educators completed second follow-up interviews. Children were assessed in their homes if they were between ages 3 and 6. From our parent sample, we conducted 1,060 child assessments, which is 78 percent parents in the baseline.[11]

We attempted to recruit a sample of children in the care of educators by asking educators at the first follow-up interview to give us lists of children in their care and to help

[7] The higher rate of assignment to the workshop group is a result of clustering in some workshops. We assigned family members and educators from the same classrooms to the same condition, whether workshop or control.

[8] For advance random assignment, the Coordinator or community partners distributed packets of consent forms, baseline surveys, and locating forms to potential study members. Those who were interested completed the forms, and the Coordinator or partner forwarded the packets to MPR for random assignment.

[9] All surveys were available in both English and Spanish and interviewers were fluent in both languages as well. The parent and educator first follow-up surveys were administered using computer-assisted telephone interviewing (CATI) by trained telephone interviewers from January 2003 to August 2003. The educator second follow-up survey was administered by CATI between April and October 2003. The parent second follow-up survey was administered in person for parents of children 3 to 6 years old, and by telephone if their child was outside of that age range. Data collection for parents and children spanned April 2003 to January 2004.

[10] One workshop was dropped from the second follow-up response rates in the next section because the child care center where they worked prohibited their participation in the study after the three-month followup.

[11] Response rates for children were calculated to account for the fact that in some cases both the mother and father of the same child were part of the study and were both interviewed. We adjusted our denominator to restrict it to only one parent of the pair when calculating response rates for the child assessments. There were 57 cases in which two parents were interviewed and had one child assessment completed.

us recruit the parents of those children to participate in the study. Of the 785 educators who completed a first follow-up survey, 693 (or 88 percent) provided a list of children and agreed to help recruit them. In the end, 287 parents were interviewed and had their children assessed, which is 32 percent of the educators in our sample. Appendix C describes the data collection efforts for the second follow-up child assessments for the original parent sample, and those recruited through educators.

Table II.1. Sample Sizes and Response Rates

	Baseline Sample Size	Completed Baseline Interview	Baseline Response Rate (Percentage)	Completed First Follow-Up Interview	First Follow-Up Response Rate	Completed Second Follow-Up	Second Follow-Up Response Rate
Parents							
Workshop	740	731	98.8	685	92.6	665	89.9
Control	675	669	99.1	614	91.1	601	89.0
Total	1,415	1,400	98.9	1,299	91.8	1,266	89.5
Children of Parents							
Workshop	NA	NA	NA	NA	NA	561	79.7
Control	NA	NA	NA	NA	NA	499	76.3
Total	NA	NA	NA	NA	NA	1,060	78.1
Educators							
Workshop	445	445	100.0	379	85.2	355	79.8
Control	459	458	99.9	406	88.5	393	85.6
Total	904	903	99.9	785	86.8	748	82.7
Children of Educators							
Workshop	NA	NA	NA	NA	NA	145	32.6
Control	NA	NA	NA	NA	NA	142	30.9
Total	NA	NA	NA	NA	NA	287	31.8
Total Workshop[a]	**1,185**	**1,176**	**99.2**	**1,064**	**89.8**	**1,020**	**86.1**
Total Control[a]	**1,134**	**1,127**	**99.4**	**1,020**	**90.0**	**994**	**87.7**
Grand Total[a]	**2,319**	**2,303**	**99.3**	**2,084**	**89.9**	**2,014**	**86.9**

Source: Random Assignment Database; Parent and Educator Baseline, First, and Second Follow-Up Surveys.

[a] Excludes children.

Note: NA means not applicable. Children were not assessed until the second followup.

CONDUCTING CHILD ASSESSMENTS

We hired a total of 44 field interviewers (including 5 who were Spanish speakers) who lived within close proximity to the 20 *Ready To Learn* stations. Interviewers attended one of two training sessions held at MPR in April and May 2003 where they learned how to administer the parent survey and conduct the child assessments. The training included a group review of the survey and child assessment, demonstration, and breakout sessions in

which interviewers practiced administering the instruments. In addition, we discussed locating and refusal conversion techniques. To ensure the quality of assessments, 10 percent of all interviewer-completed assessments were verified by MPR supervisors; no problems were found.

We were able to conduct either English- or Spanish-language child assessments. To determine which was more appropriate, we asked parents at the time of the three-month followup to indicate which language the child spoke most at home. In cases where the child was equally fluent in both languages, we asked the parent which language was preferred. If the child spoke a language other than these, then the child was administered only the nonverbal items. We administered 225 Spanish-language child assessments among the original parent sample, and 7 in the sample recruited through educators.

OUTCOME MEASURES

As described in the conceptual framework (Figure I.2), for adults, the outcomes of interest center around five general areas: (1) implementation of the Learning Triangle; (2) children's television viewing and adult-child television co-viewing behaviors; (3) attitudes toward television and PBS; (4) books and reading frequency; and (5) use of PBS online resources (Table II.2). For children, the outcomes of interest concern four domains: (1) emergent literacy, (2) cognition and general knowledge, (3) social and emotional development, and (4) approaches toward learning (Table II.3). The child assessment battery consisted of measures from the Leiter International Performance Scale-Revised, the Woodcock-Muñoz Language Survey, and measures adapted from the Family and Child Experiences Survey (FACES). The psychometric properties of the child measures are described in Appendix C.

The tables that follow describe the adult and child outcome measures. Child outcomes were measured both through parent reports of children's abilities and through direct assessment by trained assessors. Child assessments were scored according to test developer guidelines. In instances where there were no specific guidelines, we used standard scale construction methods to develop scales (described in Appendix C).

The explanatory variables we used in our models were background characteristics collected at baseline, including gender, race, English-speaking, living in a rural area, education, and attitudes toward television and PBS (Table B.5). Appendix C describes in detail the form of the models we used to estimate impacts. For child outcomes, we added age and gender as control variables in addition to those named above (if the particular outcome was not already age- or gender-adjusted).

Table II.2. *Ready To Learn* Parent and Educator Outcomes

Outcome Area and Rating Scale	Specific Item
Learning Triangle Activities	
Percentage who engaged in four specific View-Read-Do activities at least 3 to 5 times in the past month with the children in their care. Rated on a 6-point scale: Almost every day 11 to 15 times 6 to 10 times 3 to 5 times 1 to 2 times Never	**View and Talk:** Binary, coded as 1 if any of the items below were reported at least 3 to 5 times per month -Discuss with (Focus Child/Children) what is going on in a program while you are watching -Answer questions (Focus Child/Children) has about the program while watching -Discuss the characters from a program -Talk with (Focus Child/Children) about a program after it is finished **"Do" Activities:** Binary, coded as 1 if either of the items below were reported at least 3 to 5 times per month -Sing songs from a program with (Focus Child/Children) -Do activities related to the topic or theme of a program with (Focus Child/Children), such as making a craft, playing a game, or doing other activities that are related to the program **"Read" Activities:** Read a book related to the topic or theme of a program with (Focus Child). Educator version: Read a book related to the topic or theme of a program **View-Read-Do Activities:** Watch a program, read a book, and do an activity all related to the topic or theme of the program
Television Viewing and Co-Viewing Behaviors	
The number of hours on a typical weekday that children view PBS. Those who do not view are coded as zero.	**For parents asked as:** "During a typical weekday, how much time does (Focus Child) spend watching PBS KIDS programs or videos at home?" **For educators asked as:** "During a typical weekday, how much time does (Focus Child) spend watching PBS KIDS programs or videos while in your care?"
The number of hours on a typical weekday that children view adult-focused television. Those who do not view are coded as zero.	**For parents asked as:** "During a typical weekday, how much time does (Focus Child) spend watching TV that is for adults at home?" **For educators asked as:** "During a typical weekday, how much time does (Focus Child) spend watching TV that is for adults while in your care?"

Table II.2 (*continued*)

Outcome Area and Rating Scale	Specific Item
The number of hours on a typical weekday that children view television. Calculated as the sum of time viewing PBS KIDS, television for adults, and each of six networks: (1) Nick Jr., (2) Cartoon Network, (3) Disney Channel, (4) ABC Family Channel, (5) HBO Family, and (6) Noggin. Those who do not view are coded as zero.	**For parents asked as:** "During a typical weekday, how much time does (Focus Child) spend watching programs on (1) Nick Jr., (2) Cartoon Network, (3) Disney Channel, (4) ABC Family Channel, (5) HBO Family, and (6) Noggin at home?" **For educators asked as:** "During a typical weekday, how much time does (Focus Child) spend watching programs on (1) Nick Jr., (2) Cartoon Network, (3) Disney Channel, (4) ABC Family Channel, (5) HBO Family, and (6) Noggin while in your care?"
Percentage who co-viewed each of seven children's television channels (PBS KIDS, Nick Jr., Cartoon Network, Disney Channel, ABC Family Channel, HBO Family, Noggin) with their children all or most of the time. Rated on a 5-point scale: All of the time Most of the time Some of the time Seldom Never If focus child or child care group does not watch television or a specific channel, co-viewing is coded as "never."	**For parents asked as:** "When (Focus Child) watches PBS KIDS (other channel) programs or videos at home, how often do you or another adult watch with (him/her)?" **For educators asked as:** "When children in your care are watching PBS KIDS (other channel) programs or videos, how often do you or another child care provider watch with them?"
Attitudes Toward Television and PBS	
Percentage who disagreed or strongly disagreed with five statements. Rated on a 4-point scale: Strongly agree Agree Disagree Strongly disagree	If it's a cartoon, I know it's safe for kids I don't keep track of what my child (the children in my care) watch(es) on television or videos. Television has no place in a child care setting. **For parents asked as:** "I would be upset if I thought my child was watching television or videos while in (his/her) preschool or child care arrangement." **For educators asked as:** "Parents would be upset if they thought their children were watching television or videos while in my care." The children's programs on PBS are no different than the children's programs on other TV channels.

Table II.2 (*continued*)

Outcome Area and Rating Scale	Specific Item
Percentage who agreed or strongly agreed with five statements. Rated on a 4-point scale: Strongly agree Agree Disagree Strongly disagree	Television can be an educational tool. Even cartoon violence can be harmful to kids. PBS, the station that airs PBS KIDS programs such as Sesame Street, Mister Rogers' Neighborhood, and Clifford the Big Red Dog, broadcasts high-quality children's television programs. **For parents asked as:** "I would be comfortable if (Focus Child's) child care provider or teacher used television or videos to teach (him/her). **For educators asked as:** "I'd consider using television or videos to teach children in my care." If it's on PBS, I know it's safe for kids.
Books and Reading Frequency	
Percentage with ≥26 children's books. Rated on a 6-point scale: More than 50 26 to 50 10 to 25 3 to 9 1 or 2 None	Number of books focus child or children in care have.
Percentage who read once per day or more with children.	
For parents, rated on a 5-point scale: Several times a day About once a day 3 or 4 times Once or twice Not at all	**For parents, asked as:** "During the past week, how many times have you or someone in your family read to or looked at books with "Focus Child?"
For educators, rated on a 6-point scale: Several times per day About once per day 3 to 4 times a week 1 to 2 times a week Less than once a week Never	**For educators, asked as:** "While in your care, how frequently do the children in your care take part in reading or looking at books with an adult, as a group activity?"
Total number of minutes reading with children per day.	**For parents, asked as:** "On a typical day when you or someone in your family reads to or looks at books with "Focus Child," how much time do you spend in this activity?" **For educators, asked as:** "On a typical day, how much time do you or a co-worker/assistant spend reading to or looking at books with the children in your care?"

Table II.2 (*continued*)

Outcome Area and Rating Scale	Specific Item
Use of PBS Online Resources	
Visited any PBS Web site Used information from PBS Web site	
(For parents) Rated as percentage who visited pbskids.org or pbsparents.org.	**For parents, asked as:** "Have you ever visited the Web site:" www.pbskids.org www.pbsparents.org
(For educators) Rated as percentage who visited pbskids.org, pbsparents.org, or pbs.org/teachersource.	**For educators, asked as:** "Have you ever visited the Web site:" www.pbskids.org www.pbsparents.org wwww.pbs.org/teachersource
Percentage who used information from any of the PBS Web sites (if respondent did not use Web sites, use of materials is coded as "no").	Have you ever used the information or ideas you obtained from (this/these) Web sites to do activities with your children?

Table II.3. *Ready To Learn* Child Outcomes

Outcome Area and Rating Scale	Source	Specific Item[12] or General Description
Parent Report		
Language and Emergent Literacy		
Percentage who can recognize all or most letters of the alphabet. Rated on a 4-point scale: All of the letters Most of them Some of them None of them	Includes items from the 1993 National Health Interview Survey on School Readiness and FACES (2000).[13]	Can (Focus Child) recognize all the letters of the alphabet, most of them, some of them, or none of them?
Percentage who can recognize their name in print.		Does (Focus Child) recognize (his/her) own first name in writing or print?
Percentage who are able to read *or* tell a connected story while pretending to read. Rated on a 3-point scale Reads written words Pretends to read Does both		Does (Focus Child) actually read the words written in the book, or does (he/she) look at the book and pretend to read?
Percentage who pretend to read and tell a connected story. Rated on a 3-point scale: Sounds like a connected story Tells what is in each picture Does both		When (Focus Child) pretends to read a book, does it sound like a connected story, or does he or she tell what is in each picture without much connection between them?
Percentage who mostly write or draw.		Does (Focus Child) mostly write and draw rather than scribble?
Percentage able to write first name.		Can (Focus Child) write his/her first name even if some of the letters are backward?

[12] Copyright restrictions limit the publication of some measures at the item level. For these, we provide a general description of the measure.

[13] FACES Items are available at http://www.acf.dhhs.gov/programs/core/ongoing_research/faces/faces2000_instruments/face2000_intro.html.

Table II.3. (*continued*)

Outcome Area and Rating Scale	Source	Specific Item or General Description
Emergent Literacy Composite Calculated as the total of 5 items: Recognizes all or most letters of the alphabet Counts to 20 or more Mostly writes or draws Writes own first name Identifies four colors by name	Developmental Accomplishments Scale (FACES 2000).	Can (Focus Child) recognize all the letters of the alphabet, most of them, some of them, or none of them? How high can (Focus Child) count? Would you say… Not at all, Up to 5, Up to 10, Up to 20, Up to 50, or up to 100 or more? Does (Focus Child) mostly write and draw rather than scribble? Can (Focus Child) write his/her first name even if some of the letters are backward? Can (he/she) identify the colors red, yellow, blue, and green by name?
Cognition and General Knowledge		
Percentage who can identify four colors by name. Rated on a 3-point scale: All of them Some of them None of them	Includes items from the 1993 National Health and Interview Survey on School Readiness and FACES (2000).	Can (he/she) identify the colors red, yellow, blue, and green by name?
Percentage who can identify 10 written numbers. Asked as an open-ended question.		How many written numbers can (Focus Child) recognize?

Table II.3. (*continued*)

Outcome Area and Rating Scale	Source	Specific Item or General Description
Social and Emotional Development		
Behavior Problems score Calculated as the sum of 10 items, each rated on a 3-point scale: Very true/Often true Somewhat/Sometimes true Not true	Modified by the FACES Research Team from The Social Skills Rating Scale (Elliot et al. 1988) and the Child Behavior Checklist (Achenbach 1996).	Would you say that this is very or often true, sometimes or somewhat true, or not true for (Focus Child)? Has temper tantrums or hot temper? Can't concentrate or pay attention for long? Is very restless and fidgets a lot? Hits and fights with others? Doesn't get along with other kids? Is disobedient at home?
Adaptive Social Behavior Inventory: Expressive score Calculated as the sum of 12 items, then converted to a standard score. Each item rated on a 3-point scale: Almost always Sometimes Rarely or never	Adaptive Social Behavior Inventory. Hogan, Scott, and Bauer (1992).	Would you say this is almost always true, sometimes true, or rarely or never true of (Focus Child)? Understands others' feelings, like when they are happy, sad, or mad. Is sympathetic to other children's distress, tries to comfort others when they are upset. Is open and direct about what (he/she) wants. Will join a group of children playing. Can easily get other children to pay attention to (him/her). Says "please" and "thank you" when reminded. Asks or wants to go play with other children. Plays games and talks with other children. Is confident with other people. Tends to be proud of things (he/she) does. Is interested in many different things. Enjoys talking with you.

Table II.3. (*continued*)

Outcome Area and Rating Scale	Source	Specific Item or General Description
Adaptive Social Behavior Inventory: Compliant score Calculated as the sum of 11 items, and converted to a standard score. Each item rated on a 3-point scale: Almost always Sometimes Rarely or never	Adaptive Social Behavior Inventory. Hogan, Scott, and Bauer (1992).	Would you say this is almost always true, sometimes true, or rarely or never true of (Focus Child)? Helpful to other children. Obedient and compliant. Follows rules in games. Waits (his/her) turn in games or other activities. Cooperates with your requests. Plays well with other children. Follows household or family rules. Says nice or friendly things to others. Is calm and easygoing. Shares toys or possessions. Accepts changes without fighting against them or becoming upset.
Adaptive Social Behavior Inventory: Disruptive score Calculated as the sum of 8 items, and converted to a standard score. Each item rated on a 3-point scale: Almost always Sometimes Rarely or never	Adaptive Social Behavior Inventory. Hogan, Scott, and Bauer (1992).	Would you say this is almost always true, sometimes true, or rarely or never true of (Focus Child)? When you give (him/her) an idea for playing, (he/she) frowns, shrugs shoulders, pouts, or stamps foot. Gets upset when you don't pay enough attention. Teases other children, calls them names. Prevents other children from carrying out routines. Bullies other children. Is worried about not getting enough. Is bossy, needs to have (his/her) way. Turns away or draws back when another child is approaching (him/her).

Table II.3. (*continued*)

Outcome Area and Rating Scale	Source	Specific Item or General Description
Direct Assessment		
Language and Emergent Literacy		
Woodcock-Muñoz Picture Vocabulary standard score	Woodcock and Muñoz-Sandoval (2001).	Measures expressive vocabulary by asking children to name familiar and unfamiliar pictured objects as part of a standardized protocol. The Spanish version of the test, Vocabulario sobre dibujos, was administered to children who were more comfortable in Spanish. Raw scores are converted into standard scores with a norming sample mean of 100 and a standard deviation of 15.
Woodcock-Muñoz Letter-Word Identification standard score	Woodcock and Muñoz-Sandoval (2001).	The first four items measure the ability to match a pictographic representation of a word (a rebus) to a picture of an object. The remaining items measure reading identification skills with individual letters and words. The test is administered as part of a standardized protocol. The Spanish version of the test, Identificación de letras y palabras, was administered to children who were more comfortable in Spanish. Raw scores are converted into standard scores with a norming sample mean of 100 and a standard deviation of 15.
Print knowledge score	Modified by the FACES Research Team from the Story and Print Concepts task in The CAP Early Childhood Diagnostic Instrument (prepublication edition), Mason and Stewart (1989).	Assesses children's familiarity with storybooks and publishing conventions by asking the child to show where the front of a book is, open it to where reading should start, and differentiate print from pictures. The score is based on the number of items answered correctly and ranges from zero to five.

Table II.3. (*continued*)

Outcome Area and Rating Scale	Source	Specific Item or General Description
Book knowledge score	Modified by the FACES Research Team from the Story and Print Concepts task in The CAP Early Childhood Diagnostic Instrument (prepublication edition), Mason and Stewart (1989).	Assesses children's pre-reading skills by asking the child to show where a reader should read next when he or she gets to the end of a page or a paragraph. Tests child's awareness that print is read from left to right and top to bottom. The score is based on the number of items answered correctly and ranges from zero to two.
Cognition and General Knowledge		
Leiter-R Classification Sustained standard score	Roid and Miller (1995, 1997).	Standardized, non-verbal assessment of how well the child categorizes objects and geometric designs. Children sort shapes by size and color and match pictures on cards to pictures displayed in the test book. The raw number of correct responses are converted to scaled and to standard scores with a norming sample mean of 100 and a standard deviation of 15.
Percentage who name 10 colors	Modified by the FACES Research Team from the Color and Number Concepts task in The CAP Early Childhood Diagnostic Instrument (prepublication version), Mason and Stewart (1989).	Assesses the child's ability to identify 10 colors by name. The child receives two points for each color named by the child and one point for each color that the assessor names and the child finds correctly. Scores range from zero to 20.
Percentage who count to 10	Modified by the FACES Research Team from the Color and Number Concepts task in The CAP Early Childhood Diagnostic Instrument (prepublication version), Mason and Stewart (1989).	Assesses the child's ability to count 10 pictures of bears and arrive at the correct sum. Assessors rate children on a 5-point scale from 1 ("child could not count or did not try") through 3 ("fairly well, child made one or two uncorrected mistakes") to 5 ("perfectly, no mistakes"). Only children who rated a 5 are counted as correctly counting to 10.

Table II.3. (*continued*)

Outcome Area and Rating Scale	Source	Specific Item or General Description
Approaches Toward Learning		
Leiter-R Attention Sustained standard score	Roid and Miller (1995, 1997).	Standardized, non-verbal assessment of how well the child attends and persists with the task of crossing out a target picture embedded among non-target pictures. The materials consist of several pages of pictures of objects presented systematically in rows and columns on the page, and then later randomly, with a target picture at the top of the page. The child is to cross out as many of the target pictures (which are interspersed among non-target pictures) as possible during the allotted time. The raw number of correct responses are converted to scaled and to standard scores with a norming sample mean of 100 and a standard deviation of 15. Children under 4 years old were administered one version of the test and children 4 and older were administered a more challenging version
Attention and engagement during testing	Developed by the FACES Research Team for the FACES 1997 and 2000 data collection.	Based upon observation, the assessor rated the children's behavior during the assessment on eight different domains: task persistence, attention span, ability to sit quietly, attention to directions, comprehension of directions, verbalization, ease of relationship, and the child's level of confidence. Ratings use 4-point scales with descriptive anchors at each point. For example, the "task persistence" scale consists of the following anchor points: (4) persists with task, (3) attempts task briefly, (2) attempts task after much encouragement, and (1) refuses. A summary score ranges from 0 to 24, with higher scores representing more positive behavior.

Regression models were used to estimate the impact of Ready To Learn workshops, rather than simply compare means for the outcomes of interest. These models improve statistical precision and control for any preexisting differences between the program and control groups that might, by chance, exist despite random assignment.

All models adjust for variable rates of nonresponse to the surveys and average impacts across stations.[14] We also estimated treatment/control differences for subgroups of interest. Appendix C provides further detail on the regression models.

ANALYTIC APPROACHES

We assess longer-term effects of *Ready To Learn* workshops in the following ways. First, we assess the effects of the workshops on adult outcomes at the six-month followup through parent and educator reports of their own behaviors around the five areas noted in Table II.2 above. In particular, we estimate program impacts using the full combined study sample (parents and educators), accounting for clustering of the sample at random assignment.[15,16] Next, we estimate program impacts within subgroups of interest (such as parents and educators, or workshops with different characteristics). These approaches will indicate whether the impacts observed at the first three-month interview were sustained through six months.[17] In addition, they will indicate whether the impacts were more likely to be sustained for different subgroups (see Appendix C for details of the equations).

We assessed workshop control differences in the following adult subgroups:

- Type of participant (parents and educators), parent education, parent employment, race/ethnicity, child age, child gender, and child care status
- Workshop content coverage, quality of presentation, overall quality, View-Read-Do planning time, View-Read-Do practice time, reading demonstration, and workshop length

Subgroup analysis allows us to see whether workshops are more effective for some participants (such as parents or educators) or if there are certain workshop features that

[14] The weighting procedures we used are described in the Technical Notes found in Appendix C.

[15] We also present re-estimations of the first follow-up impacts, which account for clustering. The results are nearly identical to those reported in Johnson et al. (2003), which did not account for clustering.

[16] As a check on the robustness of our regression analysis findings, we include the simple mean differences between workshop and control groups (Tables B.6, B.7, and B.8).

[17] Comparing control group outcomes between three and six months shows that the group appears to decline a great deal on some behaviors (particularly among those in the Learning Triangle). We found that for some outcomes, the declines were significant. Appendix C describes our analyses and possible explanations for the observed declines.

make them more effective (such as whether they cover all content). We cannot conclude that differences in subgroup outcomes are caused by, for example, a particular type of workshop, because study participants were not randomly assigned to these groupings. We can say that there are associations between the subgroup indicator and outcomes.

We also assess outcomes for the children in the care of the parents and educators in our study sample. Our primary focus will be on the children of the parents in our sample because response rates for the educator sample were too low.[18] We have both parent reports of skills and behaviors of their children, as well as direct assessments of the children's development and school readiness. For parent reports of children's readiness, we estimate impacts in the same way as we have for the parent outcomes, although for those parents who share a child (that is, both parents participated in the study, were randomly assigned as a unit, and were both interviewed), we randomly select the reports of one of them about their child, so as not to consider two different parents' reports of the same child in our models. Significant impacts would indicate that indeed workshops cause children to exhibit more school readiness, as reported by their parents, compared to those whose parents were in the control group. The subgroup impact approach is identical to those for the adult outcomes, although we consider three additional subgroups of interest (child age, child gender, and regular use of child care).

We then estimate whether workshops have an impact on school readiness measured through direct assessments by MPR staff. These models closely resemble those for the adult outcomes. They include baseline control variables that we carry over from parent interviews, and again, estimate impacts overall, and for particular subgroups of interest, including the three additional child subgroups noted above.

Finally, we assess program impacts based on two considerations (1) significance level, or the "*p*-value," which is the probability that a difference of a given magnitude (workshop versus control) would be found by chance alone if there were, in fact, no differences between the groups; and (2) the pattern of impacts. In the latter case, we are interested in looking not just for specific instances of significant differences, because given a *p*-value of .05, in 100 comparisons we would expect to find five that are significant purely by chance. We therefore pay attention to the coherence of constellations of significant effects and pair what we see in terms of significance with what we know through other means (for example, about the workshops themselves).

[18] We do not combine child data from the two arms of the study (parent and educator), because the sample of children recruited through educators was not representative of the entire sample of educators and the children in their care. Appendix C describes how we assessed the similarity of the educators who did and did not have a child assessment associated with them.

CHAPTER III

CHARACTERISTICS OF WORKSHOPS AND WORKSHOP PARTICIPANTS

An important goal of *Ready To Learn* workshops is to demonstrate to parents and early childhood educators how they can use television as a teaching tool with children. During workshops, participants learn about PBS KIDS programming and how the content of the programs can be used to teach children the skills they need to succeed in school—critical thinking, language and literacy, problem solving, counting and numeracy, social competence, and physical/motor skill development. Participants are introduced to the View-Read-Do Learning Triangle, which they can use to extend the learning objectives of a television program or segment through active co-viewing, reading a children's story, and doing an activity built around the topic of the program. Other important goals of *Ready To Learn* workshops are to provide participants with information on media literacy, child development, and early childhood education, as well as provide them with educational materials, including children's books and program guides.

The *Ready To Learn* program is intended to reach children who are most at risk of school failure. This is achieved through outreach to potential workshop participants in four target populations: (1) those who live in rural areas, (2) those with a low literacy level, (3) those with limited English proficiency, and (4) families of children with special needs.

In this chapter, we provide a summary description of the 85 *Ready To Learn* workshops that were observed as part of this study and give a description of the workshop participants themselves.[1] Our analysis examines the basic characteristics of the workshops, the coverage

[1] The 85 *Ready To Learn* workshops we observed could vary in length and be offered as a single, one-time session or in sequential sessions offered over weeks or months. We used a 34-item checklist for all observations, and field interviewers were given training in conducting the *Ready To Learn* workshop observations as part of the baseline data collection effort (see Johnson et al. 2003 for details of the workshop observation items).

of key workshop content areas, and the quality of the workshop presentation.[2] We then examine overall quality, as a measure of both full content coverage and high-quality presentation, and describe how Coordinators plan to promote the continuation of workshop lessons through follow-up efforts. Finally, we examine whether the characteristics or content of the workshops differed according to the type of participant (parent or educator).[3]

In turning from workshop to participant characteristics, we review participants' general characteristics and then assess the extent to which outreach successfully results in enrollment of those in the target populations. We also examine participants' pre-workshop attitudes and habits concerning television, since these are important predispositions that Coordinators and workshop facilitators may wish to consider when planning the approach and delivery of *Ready To Learn* information.

WORKSHOP CHARACTERISTICS

What Are the Basic Characteristics of *Ready To Learn* Workshops?

Most of the 85 workshops observed for this study took place in a single session and lasted, on average, a little over 90 minutes.[4] Among the 31 percent of workshops that were designed to include more than a single session, subsequent attendance was sporadic. Self-reported data from workshop participants at the time of the first followup indicated that only 17 percent of parents and 30 percent of educators attended at least one of their scheduled subsequent sessions; among those who attended a subsequent session, the average number of sessions attended was two.

In most workshops, there was a single facilitator, usually the *Ready To Learn* Coordinator. Workshops were usually held in locations determined by the local partner, with fewer than two percent taking place at stations. Facilitators most often used a combination of lecture and audience participation, although in about a quarter of the workshops, facilitators used a lecture only. Most workshops were conducted in English, but a translator was often provided if participants did not understand the language of the workshop.

[2] PBS defined and provided training to station Coordinators on the key content areas to be covered in all workshops during a two-day session in July 2002.

[3] More detailed findings from these analyses are provided in the study's short-term impact report. See Johnson et al. 2003.

[4] Table D.1 presents all the findings from the workshop observation forms.

What Content Is Covered During *Ready To Learn* Workshops?

One of our main goals in observing the *Ready To Learn* workshops was to describe the topics that are covered during workshops. We were particularly interested in seeing whether facilitators covered the key workshop content areas PBS has identified (Table III.1.)[5] Based on the workshop observation forms, a key area was considered covered when each of the individual items matching that area was observed during the workshop. The two areas most consistently covered in all workshops were media literacy and the Learning Triangle (90 percent and 93 percent, respectively). Overall, 65 percent of the workshops covered all the items in each key content area.

Although most workshops provided participants with examples of how to use the Learning Triangle, fewer provided participants with actual time to plan or practice this. In 62 percent of the workshops, participants planned their own View-Read-Do activity, and in 65 percent of the workshops, participants were given time to practice the Learning Triangle (not in table). In the majority of workshops where participants were given time to practice, they were allowed 5 minutes or less to do so.

In just under half the workshops, facilitators recommended how often participants should implement the View-Read-Do Learning Triangle with the children in their care, with the recommended frequency varying from at least once a day to once a week. Facilitators usually demonstrated how to read a book with child, though this was more common in workshops for parents (80 percent) than in workshops for educators (63 percent).

How Well Is Information Presented at Workshops?

The workshop facilitators' ability to organize the workshop, communicate with participants, and convey information and enthusiasm are important to the quality of *Ready To Learn* workshops. We asked the workshop observers to rate the quality of the workshop presentation along several areas using a 5-point scale, where 1 is "poor" and 5 is "excellent."

The average rating of presentation quality across all areas ranged from 3.5 (good) to 4.1 (very good) (Table III.2). Facilitators were very likely to be rated high on their knowledge of workshop content, but least likely to be rated high on their inclusion of child development concepts. The observer rated the facilitator's inclusion of child development concepts as either poor (1) or fair (2) in 16 percent of the workshops. In 96 percent of the workshops, observers rated the overall quality of the presentation as good (3), very good (4), or excellent (5). None of the workshops received an overall rating of poor (1) for quality of presentation.

[5] All workshops included a basic description of the *Ready To Learn Service*, so this essential content area was not analyzed further.

Table III.1. Percentage of Workshops Covering Essential Content Areas

Four Essential Content Areas of *Ready To Learn* Workshops	Corresponding Observation Form Items	Percentage of Workshops
Child Development – All workshops must include some information about basic child growth and development.	Discussed the importance of reading to young children	89
	Clearly presented child development concepts	84
	All items covered	80
Station and Program Information – All workshops must include information about the *Ready To Learn* station, PBS KIDS programming, and how to access the programming in the viewing area.	Provided program-specific information about PBS KIDS	94
	Provided information about how to access PBS KIDS programming or programming schedules	89
	All items covered	84
Media Literacy – All workshops must include information about critically selecting, viewing, and using media not limited to PBS television programming.	Discussed media literacy and critical viewing	94
	Discussed adult/child co-viewing	94
	Discussed using television to initiate conversation	94
	All items covered	90
The View-Read-Do Learning Triangle – All workshops must explain, model, and use the View-Read-Do Learning Triangle.	Introduced and defined View-Read-Do	99
	Demonstrated View-Read-Do	95
	Provided participants with concrete examples of how to use View-Read-Do	95
	Showed participants a video clip of a PBS KIDS program	100
	All items covered	93
Covered All Key Workshop Areas		**65**
Sample Size		**85**

Source: Workshop Observation Forms.

Table III.2. Workshop Presentation Ratings

Workshop Presentation Rating Items	Percentage of Workshops Receiving Score of: Poor/Fair	Good	Very good/ Excellent	Mean Score
Atmosphere (welcoming and conducive for the workshop)	9	34	56	3.7
Facilitator's ability to communicate with the participants	5	22	73	3.9
Participants' enthusiasm during the workshop	9	44	47	3.6
Facilitator's knowledge of the workshop content	4	21	75	4.1
Facilitator's organization of the workshop	6	33	61	3.7
Facilitator's ability to include child development concepts	16	31	53	3.5
Appropriateness of the content for participants	0	28	72	3.9
Overall presentation quality	4	35	61	3.7
Sample Size				**82-85**[a]

Source: Workshop Observation Forms.

[a] Three workshops did not receive ratings for overall quality of presentation.

How Frequently Do Workshops Provide Both Full Content Coverage and a High-Quality Presentation?

As part of our analysis, we also examined the overall quality of the workshops. Overall quality is measured according to how well facilitators cover the key content areas discussed above, as well as provide a high-quality presentation, according to the criteria above. We divided workshops into four groups: (1) those that covered all the key content areas, and also rated high (4 or 5) on overall workshop presentation; (2) those that covered all content areas but did not rate high on presentation; (3) those that did not cover all content areas but rated high on presentation; and (4) those that met neither of these conditions.

Overall, 37 of the workshops observed as part of the study (45 percent) covered all key content areas and received a high rating on overall presentation. Fifteen of the workshops (18 percent) neither covered all content areas nor received a high rating on presentation. And 30 workshops (37 percent) received mixed ratings: they either covered all content areas

or were rated high in terms of presentation, but not both. These 30 workshops were provided by a majority of stations in the study—12 of the 20.

How Do Coordinators Promote Continuation of Workshop Lessons?

An important component of the *Ready To Learn Service* is distribution of educational materials and other resources, as well as following up with participants after the workshop to encourage use of the lessons learned with the children in their care. As part of the observations, we examined the types of materials that were distributed during the workshops, and documented whether and how facilitators planned to follow up with participants.

A variety of materials were distributed during the observed workshops. In most of the workshops (94 percent), participants were given children's books. In a majority of workshops, participants also received producer-created materials (86 percent), program guides (80 percent), and View-Read-Do planning sheets (69 percent). Participants were least likely to be given children's activity materials (28 percent). Most facilitators planned followup—either written (59 percent), in-person (44 percent), or telephone followup (23 percent). However, only 22 percent of parents and 26 percent of educators recalled receiving any type of followup in the three-month interval between the time of the workshop and first follow-up survey, and only 41 percent of parents and 24 percent of educators recalled receiving followup between the time of the three- and six-month interviews.

Do Workshops Differ Depending on the Type of Participant?

Finally, we examined whether there were differences in workshop characteristics for parents versus educators. Of the 85 workshops we observed, 54 were parent-only workshops, and 31 were educator-only workshops.[6]

For the most part, the parent-only and educator-only workshops were similar along the dimensions we examined. However, there were some important differences.[7] More parent than educator workshops were multi-session (41 percent versus 16 percent); *Ready To Learn* Coordinators facilitated 80 percent of the parent workshops, but only 68 percent of the educator workshops; and workshop facilitators planned for followup more often in parent than educator workshops (81 percent versus 55 percent). Workshops for parents tended to be shorter than those for educators: on average, educator workshops lasted 40 minutes longer than parent workshops.[8]

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[6] In one workshop, both parents and educators attended. Since there were more educators than parents, we counted this workshop as an educator workshop.

[7] See Table D.1 for all differences.

[8] Slightly less than 10 percent (n=3) of the educator workshops exceeded 300 minutes, which partly explains the large difference in total time between educator and parent workshops. If we examine the

In sum, observers indicated that both educator and parent workshops were generally well organized, were well presented, and usually included coverage of all the main content areas recommended by PBS. This summary of the study's 85 workshops shows that there is, however, moderate variability among workshops overall, and between workshops for parents only versus those for educators only. The observational data suggest that there is some room to improve workshop content coverage and quality.

PARTICIPANT CHARACTERISTICS

We now review the general profile of workshop participants, station success at recruiting populations of particular interest to PBS and the U.S. Department of Education, and participants' pre-workshop habits and attitudes concerning television.[9] The *Ready To Learn* program is intended to reach children who are most at risk of school failure. Therefore, PBS needs to know whether program resources are successfully targeting workshop participants who fulfill this objective—those who will be most likely to come into contact with at-risk children and work to enhance their school readiness.[10]

What Is the General Profile of Study Participants?

The vast majority of study participants were women: 90 percent among parents and 98 percent among educators.[11] Parents were more diverse than educators in terms of race/ethnicity, with a third White, a third African American, and a third Hispanic or from other backgrounds (Asian, Native American, and Other). Educators, on the other hand, included more who were White and fewer who were Hispanic or from another race/ethnicity.

Half of the study parents were employed either full- or part-time (38 and 12 percent, respectively). The other half were not employed and may have had comparatively more time for using *Ready To Learn* techniques: 30 percent were homemakers, and the remaining 20 percent were either unemployed, disabled, or in school.

(*continued*)
difference in the median time for each group, the educator workshops lasted 30 minutes longer than parent workshops (median time for educator workshops was 105 minutes, compared to 75 minutes for parents).

[9] More detailed findings from these analyses are provided in the study's short-term impact report. See Johnson et al. 2003.

[10] Data are based on the full sample of study participants interested in attending a *Ready To Learn* workshop offered by the 20 selected stations participating in this research effort; as such, it is important to note that the following descriptions largely pertain to *potential* workshop participants prior to receipt of a workshop (that is, both control and workshop group members). It is also important to recognize that, because stations were not randomly sampled for the study, these descriptions do not necessarily generalize to the entire population of workshop participants in all PBS *Ready To Learn* stations.

[11] Tables D.2 and D.3 provide complete data on the background characteristics of educators and parents, respectively.

Almost 70 percent of parents resided in households with two adults; this includes those who were married, as well as those living with a partner.[12] Fifty-four percent of parents reported an annual household income of $20,000 or less, 27 percent reported an annual income of between $20,000 and $40,000, and 19 percent reported an annual income of more than $40,000. While 18 percent said they received Temporary Assistance for Needy Families (TANF), almost 60 percent said they received at least some form of supplemental income support (Women, Infants, and Children [WIC], food stamps, or TANF).

Parents and educators have sufficient access to the forms of technology needed to put *Ready To Learn* lessons into practice. All parents and virtually all educators (92 percent) have access to a television, which suggests that very few should be limited in their ability to implement the types of teaching and viewing strategies recommended during the workshops. Most educators (91 percent) have access to a VCR or DVD player, which is especially helpful in educational settings because it gives educators the flexibility to play selected segments of a program. About three-quarters of parents, and just over half of educators, have access to cable or satellite television.

Only about half of the parents and just over two-thirds of the educators in the study indicated that they ever use the Internet, making this a more limited medium to use for many (and parents in particular), in terms of accessing PBS online resources. Most parents and educators said they access the Internet at their local library.

Most educators held positions that would enable them to determine what happens in their classrooms: almost 70 percent of the educators indicated that they were either a lead teacher or a family child care provider. Most had many years of experience, with an average of 13 years across all educators in the sample. Thirty-nine percent worked in what they classified as center-based programs, and 45 percent worked in home-based programs.

Are Stations Successful at Recruiting Populations of Particular Interest?

Part of the mission of the *Ready To Learn* program is to provide services to four target populations: (1) those who live in rural areas, (2) those with a low literacy level, (3) those with limited English proficiency, and (4) families of children with special needs. How successful are stations at reaching these populations?

Although a relatively small fraction of parents lived in rural areas, a majority of educators reported teaching children from this population. Fifty-eight percent of educators reported that they teach at least some children who live in rural areas. About a third of educators said that this constitutes at least half of their children (Table III.3).

[12] This may be an underestimation of the percentage of households with two adults, since it does not take into account three-generation households.

Table III.3. Distribution of Children Taught by Early Childhood Educators

	Educators Reporting Proportion of Children with Characteristic (Percentage)		
	None	Some	Half or More
Characteristic			
Live in rural areas	43	26	32
Are from low-literacy families	49	31	20
Speak English as a second language	62	23	15
Have special needs	44	49	7
Sample Size	**820-861**		

Ready To Learn workshops are reaching a diverse population in terms of literacy, based on reported education as an approximation of parents' literacy levels. Twenty-eight percent of parents reported that their highest level of education was less than a high school diploma or GED (Table D.3). Fifty percent of the sample of study parents had more than a high school diploma (Table D.3). Among educators, just over half reported that they teach some children who are from low-literacy families; 20 percent said that this constitutes half or more of those they teach (Table III.3).

Ready To Learn workshops are reaching those with limited English proficiency. We used the language spoken at home and reports from educators about the language spoken by children in their care as approximations of families' English proficiency. Among parents, 21 percent said that they did not speak English at home (Table D.3).[13] Among educators, almost 40 percent indicated that they teach at least some children for whom English is their second language. Fifteen percent said this is at least half of all those they teach (Table III.3).

Finally, in terms of children with special needs, *Ready To Learn* workshops are reaching a somewhat limited number of children who fall into this group. Parents with children in the study's target age range—between the ages of 3 and 5—were asked whether they had a child with special needs.[14] Fifteen percent of parents indicated that they had a child with at least one special need, the largest category of which was a speech impairment (Table D.3).[15] Over

[13] Twenty-three percent of the parent baseline surveys were completed in Spanish. For educators, only about 5 percent of the baseline surveys were completed in Spanish.

[14] The term "special needs" includes learning disability, developmental delay, mental retardation, speech impairment, serious emotional disturbance, deafness or other hearing impairment, blindness or other visual impairment, or any other physical or emotional disability lasting six months or more.

[15] It is important to note that this percentage may be an underestimation because it refers only to the "focus child." There could be other children in the household with special needs. See Chapter II for a definition of the focus child and description of the selection process used to identify this child.

half of the educators reported that they teach at least one child with special needs; for 7 percent, this constituted half or more of all those they teach (Table III.3).

A minority of educators (17 percent) reported that they do not work with children in *any* of the four target populations, while another 17 percent indicated that they work with at least some children from all four target populations. Twenty-five percent work with children from one target population, 20 percent with children from two of the four target populations, and 22 percent with children from three of the four target populations.

What Are Participants' Pre-Workshop Habits and Attitudes Concerning Television?

The television viewing habits of the study population suggest that there are opportunities for parents to apply lessons learned from *Ready To Learn* workshops.[16] This is especially true of certain populations of parents, including those with less education, less employment, and less household income for whom the average amount of time spent watching television is higher.[17] In addition, most pre-workshop attitudes about television and its use suggest a high level of potential receptivity to workshop messages and lessons, although the attitudes about television viewing of a portion of the targeted population may need particular attention.

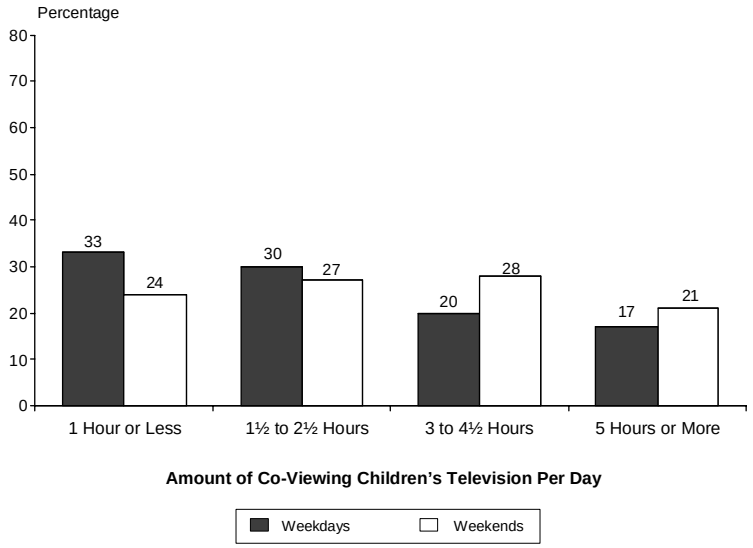
Television Co-Viewing Habits. Parents were asked questions about how much time they spent watching television geared toward adults (talk shows, comedies, dramas, news programs, soap operas) and how much time they spent with any of their children viewing child-focused television. On a typical weekday, two-thirds of parents reported that they spent more than an hour viewing children's programming with their children; an even higher percentage reported that they viewed this much television with their children on weekends (Figure III.1). On weekends, parents reported spending even more time viewing television with their children. A full 49 percent of parents reported spending at least three hours viewing television with their children on weekends.

Attitudes Toward Television. It is important to understand the pre-workshop attitudes that parents and educators hold about television and its uses. Although these attitudes are not representative of any larger population, they nonetheless provide a glimpse into perceptions that the *Ready To Learn* workshop facilitators, and PBS and ED more generally, may encounter in implementing *Ready To Learn* services. Understanding the extent to which educators feel television can or cannot be an educational tool could affect how workshop providers frame parts of their presentations. Understanding the extent to which parents do or do not recognize differences between PBS and other children's programming could also play a role in the messages workshop providers choose to emphasize during workshops.

[16] Educators were not asked about their own television-viewing habits, so this discussion pertains only to parents.

[17] See Johnson et al. (2003) for more detailed findings from this analysis of television viewing habits by population characteristics.

Figure III.1: Time Parents Spent Co-Viewing Children's Television: Weekdays Versus Weekends



Source: Parent Baseline Survey.

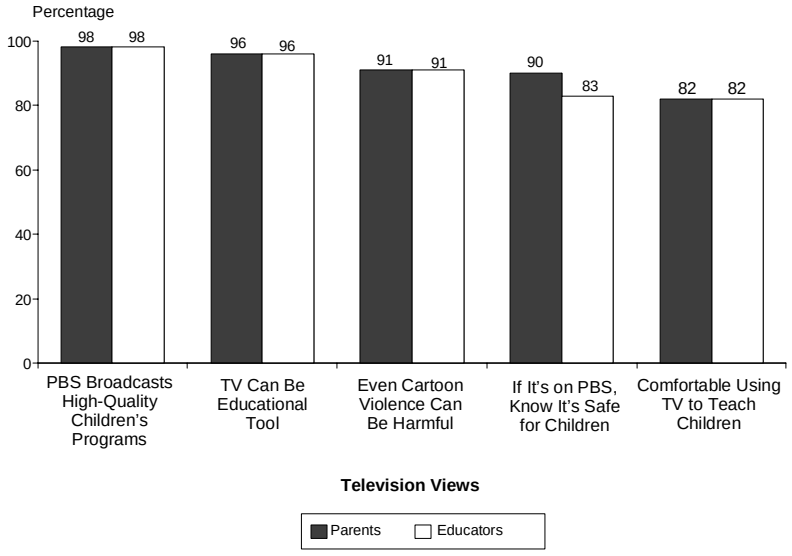
As part of the baseline survey administered prior to random assignment, parents and educators were asked whether they disagree or agree with a number of statements concerning television and its use.[18] The statements themselves generally fell into two categories: one category of statements consistent with the objectives of the *Ready To Learn* program and, as such, to which a high level of *agreement* is preferable (for example, PBS broadcasts high-quality children's programs); and a second category of statements less consistent with *Ready To Learn* program objectives and to which, therefore, a high level of *disagreement* is preferable (for example, television has no place in a child care setting). In all cases, only a minority of parents and educators held the "non-preferred" view. The majority of parents and educators held the "preferred" view or attitude consistent with the objectives of the *Ready To Learn* program. For example, 98 percent of study participants agreed that PBS broadcasts high-quality children's programs, and 96 percent agreed that television can be an educational tool. Figures III.2 and III.3 depict the groups of parents and educators for whom the preferred views were endorsed.

Figure III.2 shows statements to which a high level of agreement is consistent with *Ready To Learn* program objectives.[19] Eighty-two percent of educators agree with the statement "I would be comfortable using television to teach children." In addition, 82 percent of parents agreed with the parallel statement "I would be comfortable if my child

[18] Response options were on a four-point scale: disagree strongly, disagree, agree, or agree strongly.

[19] For ease of presentation, agree and strongly agree responses are combined.

Figure III.2: Parents' and Educators' Views About Television: Percentage Who Agree/Strongly Agree



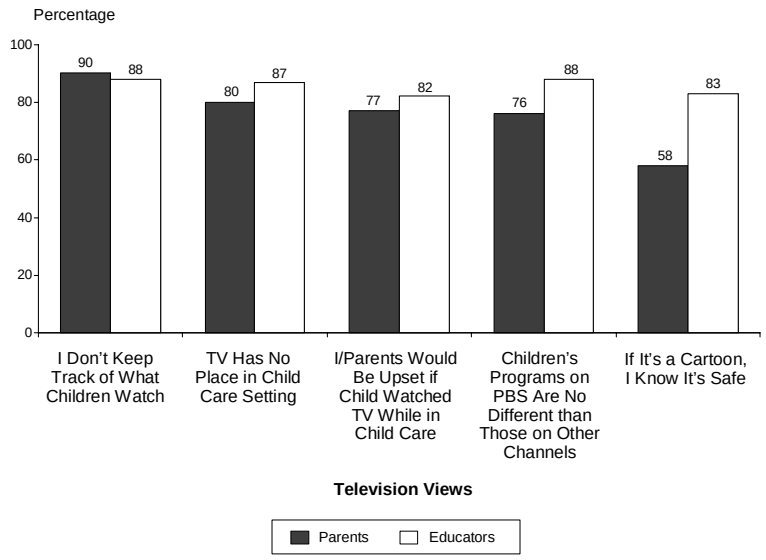
Source: Parent and Early Childhood Educator Baseline Surveys.

care provider used television to teach my child." For the purposes of program planning, the prevalence of the "non-preferred" view should also be considered. In this particular example, prior to the start of a workshop 18 percent of educators and parents may not be comfortable using television to teach children or having television used in child care as a teaching tool. Individuals who hold this non-preferred view may be less receptive to workshop messages. If facilitators are able to address some of these types of issues early in their workshops, they may be able to increase participants' receptivity to the ideas central to using the Learning Triangle.

Figure III.3 shows statements to which a high level of disagreement is consistent with *Ready To Learn* program objectives. For all statements, the majority of both parents and educators held views consistent with these objectives. However, it is important to note the comparatively lower levels of parents' disagreement with most of these statements. Other than the first statement—"I don't keep track of what my children watch"—at least 20 percent of parents agreed with the other statements, including the statement that programs on PBS are no different than those on other channels (24 percent of parents, compared with 12 percent of educators).

The majority of workshop participants come to the experience with positive attitudes about PBS programming and about television. Workshop facilitators can build on these positive views during workshops. On the other hand, PBS may suggest that facilitators develop creative ways to discuss and overcome the challenge posed by the minority of the group that hold less positive views. Doing so may shift participants' attitudes about the potential for television as an educational tool and for helping participants understand how

Figure III.3: Parents' and Educators' Views About Television: Percentage Who Disagree/Strongly Disagree



Source: Parent and Early Childhood Educator Baseline Surveys.

PBS KIDS programming is different from programming on other channels. These efforts may increase participants' receptivity to workshop messages.

What Are the Implications of Workshop and Participant Characteristics?

From our analysis of workshop and participant characteristics, we recommend that PBS focus Coordinator training and technical assistance efforts on at least two important service issues: (1) delivering exemplary workshops, and (2) developing approaches to workshop recruitment that will increase enrollment of the target populations. Relying on partnering agencies to handle workshop recruitment may be causing Coordinators to miss opportunities to enroll larger numbers of those in the target populations of interest to PBS.

We also recommend that PBS encourage Coordinators to do more to support workshop participants after a workshop is over. This can be done through more diligent follow-up contact, to reinforce workshop lessons, as well as through collaboration with local libraries in order to promote Internet access to online PBS resources. Because educators and parents alike indicated that they would be most likely to access the Internet at their local library, collaboration between *Ready To Learn* stations and their local libraries may be an effective way to facilitate and promote such access. Finally, we recommend that PBS continue in its efforts to define the ideal workshop, in terms of content coverage and presentation criteria, with attention paid to the need to influence parent and educator attitudes in some areas in order to increase their receptivity to the core workshop lessons.

CHAPTER IV

WHAT ARE THE IMPACTS OF *READY TO LEARN* WORKSHOPS?

This chapter presents the impacts of *Ready To Learn* workshops on adult and child outcomes. We concentrate primarily on the results of the second follow-up parent and educator surveys and direct child assessments, administered about six months after study enrollment, and integrate summaries of the results from the first followup, administered about three months after study enrollment. Here we test hypotheses laid out in Chapter I and depicted in the study's conceptual framework (Figure I.2) that, compared to those not assigned to attend a workshop, adults who were assigned to attend a *Ready To Learn* workshop will be more likely:

- To engage in activities with the children in their care that reinforce and repeat the educational lessons viewed on television—the Learning Triangle
- To have young children who watch less television and spend time co-viewing television, especially PBS programming, with their children
- To have positive attitudes toward PBS, the use of television as an educational tool, and monitoring of children's viewing
- To have a greater number of children's books available to the children in their care and to read more to children
- To use PBS online resources

For children in the care of adult workshop participants, they will be more likely:

- To demonstrate stronger language and emergent literacy skills
- To score higher on tests of cognition and general knowledge

- To exhibit more mature social development
- To exhibit more advanced approaches toward learning

We carefully chose measures of child outcomes that (1) tap the school readiness domains targeted by *Ready To Learn* and are consistent with hypotheses about how children may be affected by *Ready To Learn*, and (2) tap four of the five National Education Goals Panel (Kagan et al. 1995) dimensions of children's early development and learning. The four areas include cognition and general knowledge, language development, approaches toward learning, and social and emotional development. We excluded physical well-being and motor development because it is not a primary focus of workshops and it is difficult to measure reliably.

This analysis measures the average station impact for adults in the *Ready To Learn* workshop group and for the children in their care.[1] We organize our discussion around changes among the parents and early childhood educators in five broad outcome areas that correspond to the hypotheses above: (1) implementation of the Learning Triangle, (2) television viewing and co-viewing behaviors, (3) attitudes toward television and PBS, (4) books and adult-child reading frequency other than reading associated with the Learning Triangle, and (5) use of online PBS resources.[2] Children were assessed and parents answered questions to determine children's performance on tests that measured the domains noted above.[3] We begin our analysis with an examination of service receipt in order to provide a context for interpreting the impacts. This analysis addresses the fundamental question of what *Ready To Learn* workshop participation is being compared to, and what services study participants received with and without the opportunity for participation in a *Ready To Learn* workshop. We follow with a summary of findings from the six-month adult outcomes compared with those at three months, then conclude with a review of the child outcomes.

There are some important limitations to our analysis. First, adult outcomes and some child outcomes are based on self-reported data, which always introduces the possibility that reports of behavior do not accurately reflect actual practice. If the self-report items are experienced similarly by workshop and control groups, then a self-report measure will not

[1] All impact findings presented in the text reflect regression-adjusted means that take into account differential nonresponse rates at the time of the three- and six-month follow-up surveys, and weight each station equally. Additional analyses were conducted that did not include this nonresponse adjustment. There were very few differences in impacts between any of these approaches.

[2] At three months, the outcomes related to use of online resources were confined to the sample of parents only. Educators who reported that they had not taken any other workshops or classes related to preschool education or child development were unintentionally skipped out of the questions about Internet use and were not included in these outcomes. We corrected the error and included the full sample in the six-month analyses.

[3] Detailed information on the definition and/or construction of each of the outcome measures included in the tables throughout this chapter is provided in Tables II.2 and II.3.

bias impact estimates. However, it is also possible that *Ready To Learn* workshop exposure may have sensitized those in the workshop group to questions we posed at the follow-up interviews, so that they would be more likely than the control group to report what they perceive to be the desired answers. Second, the findings here do not generalize to the entire population of *Ready To Learn* stations. Twenty stations participated in this study, which were purposefully selected based on a number of characteristics, including geographic distribution and capacity to recruit study participants.

RESEARCH CONTEXT: SERVICE USE AMONG THE STUDY SAMPLE

A critical contextual issue to understand is the nature and extent of service use. This information allows us to understand the amount of the intervention received and whether we are examining the impacts of *Ready To Learn* program participation compared to (1) no other program services, or (2) participation in something else. If, for example, we were to find that those assigned to the control group were motivated to attend other parenting or educational workshops, perhaps even similar in nature to *Ready To Learn* workshops, we would be measuring the incremental effect of *Ready To Learn* workshops relative to what is learned through participation in other local support services. If, on the other hand, those assigned to the control group did not enroll in any other workshops or classes, we would know that we are measuring the impacts of *Ready To Learn* relative to no other service support.

Service use among study participants was high at both the three- and six-month interviews. We considered the extent of service use in our report on the short-term impacts of *Ready To Learn* workshops (Johnson et al. 2003) and found that nearly everyone in the workshop group attended either the *Ready To Learn* workshop or some other workshop by the time of the first follow-up interviews (Table IV.1). At three months, among the control group members, attendance was significantly lower but still more than half (56 percent) had attended some kind of workshop, apart from *Ready To Learn*. Among both workshop and control groups, educators were somewhat more likely to have done so than parents, which may have been the result of training requirements for their jobs.

At six months, we found that workshop and control group parents continued to be motivated to pursue additional workshop experiences and they did so at the same rates.[4] Approximately equal proportions of workshop and control parents reported that they had attended a *Ready To Learn* workshop since their last interview (8 percent versus 7 percent for workshop and control parents, respectively).[5] Similar proportions also reported attending some other kind of workshop during this period of time. Therefore, although many workshop parents were getting additional exposure to workshops (either *Ready To Learn* or

[4] We report here on parents only because we erroneously did not ask control group educators questions about workshop attendance.

[5] We had requested that control group members refrain from attending a *Ready To Learn* workshop until after the six-month interview.

others), the control group was getting similar levels of exposure. About 31 percent of the control group had attended some kind of a workshop between the three- and six-month interview, compared to 33 percent of workshop parents, which means that the control parents were as highly motivated as the workshop group to participate in training.

In summary, the assessment of service use shows that *Ready To Learn* workshops were generally provided in communities where other opportunities for parenting or education services were available, and that just under half of those who were interested in attending *Ready To Learn* workshops were motivated to seek these other options when a *Ready To Learn* workshop was not available to them (as exhibited by those in the control group). Therefore, the impact analysis that follows measures the incremental effect of *Ready To Learn* workshops relative to the effects of other workshops and classes. The extent of this participation—close to half of the sample—makes detection of the impacts from *Ready To Learn* participation more difficult than it would be were study participants to have had no other form of education or parenting support services, since these other services (for example, workshops on language and literacy) could also affect the outcomes examined here. This information is important in placing in context the findings that follow.

Table IV.1. Service Use Among Workshop and Control Group Members at Three and Six Months

	Workshop	Control	Total
Three Months			
Percentage Who Attended:			
Ready To Learn Workshop at Baseline	91.4	0	45.8
Subsequent *Ready To Learn* Workshop(s)	8.6	0	4.4
Workshop(s) Other Than *Ready To Learn*	48.3	56.3	52.3
Workshop(s) Including *Ready To Learn*	96.4	56.3	76.4
Average Number of Workshops (Including *Ready To Learn*)[a]	3.0	2.2	2.6
Sample Size	**678-1,064**	**600-1,015**	**1,278-2,079**
Six Months			
Percentage Who Attended:			
Subsequent *Ready To Learn* Workshop(s)	7.9	7.2	7.6
Workshop(s) Other Than *Ready To Learn*	29.2	28.3	28.8
Workshop(s) Including *Ready To Learn*	33.4	30.7	32.0
Average Number of Workshops (Including *Ready To Learn*)[a]	1.4	1.5	1.5
Sample Size	**648-662**	**585-596**	**1,233-1,250**

Source: Parent and Early Childhood Educator First and Second Follow-Up Surveys.

Note: Six-month figures include only parent reports.

[a]Average number of workshops includes parents only.

WHAT ARE THE IMPACTS OF *READY TO LEARN* WORKSHOPS ON ADULT BEHAVIORS?

- **Learning Triangle Behaviors.** Workshops had both short- and longer-term impacts on implementation of several Learning Triangle behaviors. There were small positive impacts at three or six months on several of the Learning Triangle behaviors: viewing and reading a related book, and viewing, reading, and doing a related activity—the entire Learning Triangle.

- **Television Viewing and Co-Viewing.** At both follow-up periods, there were significant impacts on co-viewing PBS. At six months, there were no differences in children's daily television viewing time or in the general content of what they viewed. In contrast, at three months, the workshop group reported that children viewed significantly less adult television than control group members.

- **Attitudes Toward Television and PBS.** For the most part, participants' pre-workshop attitudes about television and PBS were positive, and workshop participation did not change them significantly. Although attitudes were even more positive by six months, the increases occurred across both workshop and control groups.

- **Books and Reading Frequency.** Overall, adults in both groups offered a rich literacy environment to children by providing many children's books and reading to them frequently. Workshops for parents did not significantly affect the number of available children's books, frequency of reading to children, or time spent reading to them.

- **Use of Online Resources.** Those in the workshop group were significantly more likely to visit one of the PBS Web sites than the control group. The groups, however, did not differ in their use of information from the sites.

In the sections that follow, we first describe the findings from the six-month followup within each domain, and then we compare these findings to those from the three-month followup. Table IV.2 shows three-month follow-up impacts and Table IV.3 shows six-month follow-up impacts—both tables report overall impacts on the full sample. [6]

[6] All estimates are based on models that weight each station equally. For all tables presented in this chapter, the estimated impact per eligible applicant is measured as the difference between the regression-adjusted means for all program and control group members. The effect size was calculated by dividing the estimated impact by the standard deviation of the outcome for the control group (it is the impact expressed as a percentage of the standard deviation).

Table IV.2. Impacts of *Ready To Learn* Workshops Three Months After Random Assignment

	Workshop Group	Control Group	Estimated Impact	*p*-value	Effect Size
Learning Triangle Activities					
Percentage Who (3-5 Times/Month):					
View program and talk about program or characters	89.1	86.4	2.8*	0.08	8.0
View program and do related activity	84.2	83.2	1.0	0.60	2.6
View program and read related book	64.0	60.3	3.7	0.12	7.6
View, read, and do related activity	52.7	49.2	3.5	0.16	7.1
Television Viewing and Co-Viewing Behaviors					
Children's Weekday:					
Total TV viewing time (hours)	3.0	2.9	0.0	0.91	0.5
Total PBS viewing time (hours)	1.3	1.2	0.1	0.21	5.3
Total other child-focused TV viewing time (hours)	1.5	1.5	-0.0	0.96	-0.2
Total adult-focused TV viewing time (hours)	0.2	0.3	-0.1**	0.02	-9.9
Percentage Who (All or Most of the Time):					
Co-view PBS KIDS	63.8	57.3	6.5***	0.01	13.1
Co-view Nick Jr.	32.8	30.5	2.3	0.32	5.1
Co-view Cartoon Network	21.4	19.0	2.5	0.19	6.0
Co-view Disney Channel	29.9	26.1	3.8*	0.09	8.6
Co-view ABC Family Channel	16.6	16.2	0.5	0.81	1.3
Attitudes Toward Television and PBS					
Percentage Who Disagree That:					
Cartoons are safe for kids	68.2	65.1	3.1	0.11	6.4
Don't keep track of what kids watch	88.8	91.3	-2.5*	0.06	-9.0
TV has no place in a child care setting	80.7	82.3	-1.6	0.35	-4.1
Upset if TV used in child care	74.7	74.1	0.6	0.77	1.4
PBS is the same as other channels	84.5	83.0	1.6	0.35	4.1
Percentage Who Agree That:					
TV can be an educational tool	97.1	96.7	0.3	0.67	1.8
Even cartoon violence is harmful to kids	89.8	89.7	0.1	0.94	0.4
PBS broadcasts high-quality kids' TV	98.3	98.9	-0.6	0.27	-5.6
Comfortable if used TV to teach	85.4	85.9	-0.5	0.78	-1.4
PBS programs are safe for kids	87.7	87.0	0.6	0.71	1.9
Books and Reading Frequency					
Percentage with ≥26 children's books	64.2	66.8	-2.7	0.21	-5.6
Percentage who read once a day or more	77.2	79.2	-2.0	0.28	-4.7
Minutes reading with child per day	48.0	48.6	-0.6	0.74	-1.6
Sample Size	**866-1,063**	**808-1,015**			

Source: Parent and Early Childhood Educator First Follow-Up Surveys.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table IV.3. Impacts of *Ready To Learn* Workshops Six Months After Random Assignment

	Workshop Group	Control Group	Estimated Impact	*p*-value	Effect Size
Learning Triangle Activities					
Percentage Who (3-5 Times/ Month):					
View program and talk about program or characters	85.5	84.5	1.0	0.58	2.7
View program and do related activity	77.7	77.1	0.6	0.78	1.3
View program and read related book	55.3	50.8	4.5*	0.08	9.0
View, read, and do related activity	43.7	38.4	5.4**	0.03	11.1
Television Viewing and Co-Viewing Behaviors					
Children's Weekday:					
Total TV viewing time (hours)	3.4	3.3	0.1	0.49	3.4
Total PBS viewing time (hours)	1.4	1.4	0.0	0.70	1.7
Total other child-focused TV viewing time (hours)	1.8	1.7	0.1	0.51	3.6
Total adult-focused TV viewing time (hours)	0.2	0.3	0.0	0.46	-3.4
Percentage Who (All or Most of the Time):					
Co-view PBS KIDS	59.0	54.8	4.2*	0.08	8.3
Co-view Nick Jr.	26.9	28.5	-1.5	0.50	-3.4
Co-view Cartoon Network	20.4	21.3	-0.9	0.66	-2.2
Co-view Disney Channel	26.4	27.0	-0.7	0.77	-1.5
Co-view ABC Family Channel	12.2	14.3	-2.0	0.26	-6.1
Attitudes Toward Television and PBS					
Percentage Who Disagree That:					
Cartoons are safe for kids	72.2	71.4	0.8	0.66	1.7
Don't keep track of what kids watch	93.9	93.3	0.6	0.57	2.4
TV has no place in a child care setting	88.4	89.8	-1.4	0.32	-4.5
Upset if TV used in child care	80.3	81.2	-1.0	0.62	-2.5
PBS is the same as other channels	89.6	87.4	2.2	0.14	6.6
Percentage Who Agree That:					
TV can be an educational tool	98.0	97.2	0.8	0.23	4.6
Even cartoon violence is harmful to kids	95.1	94.4	0.6	0.56	2.7
PBS broadcasts high-quality kids' TV	99.5	99.1	0.4	0.40	3.6
Comfortable if used TV to teach	86.9	88.4	-1.5	0.36	-4.6
PBS programs are safe for kids	87.0	88.6	-1.6	0.34	-5.0
Books and Reading Frequency					
Percentage with ≥26 children's books	68.9	69.3	-0.3	0.87	-0.7
Percentage who read once a day or more	73.0	70.1	2.9	0.13	6.2
Minutes reading with child per day	51.1	50.2	0.9	0.67	2.4
Use of PBS Online Resources					
Visit Web site(s)	42.0	37.1	4.9*	0.05	10.1
Use information from Web site(s)	29.4	27.0	2.4	0.31	5.4
Sample Size	**873-1,020**	**808-990**			

Source: Parent and Early Childhood Educator Second Follow-Up Surveys.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Learning Triangle Behaviors. Overall, we saw a pattern of small positive workshop-control differences in implementation of the Learning Triangle. A few of these differences were significant at different points, some were not, but all were in a positive direction. At six months, workshops in the study stations increased the workshop group's likelihood of doing Learning Triangle activities (Table IV.3). Those in the workshop group were significantly more likely than those in the control group (1) to view a program and read a book related to the theme ($p<.1$)—two of the three essential elements of the Learning Triangle; and (2) to complete the entire Learning Triangle—view a program, read a book, and do an activity, all related to the same theme ($p<.05$). When we compared the three- and six-month results, we see that these differences, although not all significant, were generally sustained for the workshop group (Figure IV.1).

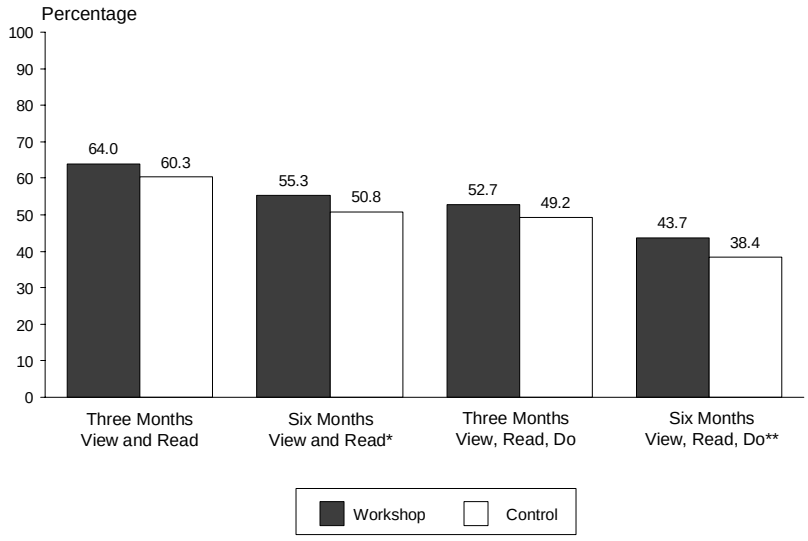
At three months, there were significant impacts on viewing a program and discussing it with children. "View program and talk about program characters" is a composite of four behaviors related to discussing a program or characters either during the program or after it concluded, or answering questions about the program (Table IV.2).[7] Although there were no differences in "view and talk" at the second followup, the workshop control differences were positive.

We examined information on when and where children's television viewing occurred in the home to provide a context for the findings (Table IV.4). Among the parent group, most children's television viewing at six months occurred in the afternoon and evening. Parents reported children viewed about two hours of television between 3 p.m. and after 6 p.m. We found that, as at three months, children were primarily watching television in a common area, such as the kitchen, living room, or family room, where co-viewing would potentially be more likely to occur, rather than in their rooms or somewhere else. There were no workshop-control group differences among parents' reports of how much television, at what times, or where children's viewing occurred.

For educators, it was more relevant to consider how often they reported using the television and for how long they used it (Table IV.4). We considered these aspects overall and by type of care setting (family child care or center care). Half of all educators reported that they used television with children daily, and most had the television on for a short amount of time (one hour or less while children were present). There was no consistent pattern of workshop-control differences among educators. However, when we consider these two aspects of educators' use of television by the type of child care environment (family child care or center-based), we found that 72 percent of educators in family child care settings used the television daily, compared to 20 percent of center-based providers.

[7] In our interim report (Johnson et al. 2003), we presented impacts on eight separate Learning Triangle behaviors, four of which involved discussing television programs: (1) discuss program while watching, (2) answer child's questions about the program, (3) discuss characters from the program, and (4) talk about the program once it is over. These behaviors were all highly correlated and so we reconstructed all four into a single variable that indicated whether the parent or educator reported doing any of the four behaviors at least three to five times a month. We similarly collapsed two items that involved doing activities related to a program: (1) view a program and do a related activity, and (2) sing songs from a program.

Figure IV.1: Three- and Six-Month Impacts on Learning Triangle Activities—View and Read/View, Read, Do



Source: Parent and Educator First and Second Follow-Up Surveys.

*Estimate significantly different from zero at the 90% confidence interval, two-tailed test.
**Estimate significantly different from zero at the 95% confidence interval, two-tailed test.

Educators in family child care settings were more likely to report having the television on for an hour or more versus educators in center care settings who primarily used the television for 30 minutes or less (not in table). Because educators in family child care settings may be more similar to parents than to center educators, they may benefit from workshops that emphasize co-viewing, which were the parent behaviors most affected by workshops at three months, and remained so to some extent at six months.

Television Viewing and Co-Viewing. Workshops did not cause any longer-term changes in children's television viewing time and content, but they did change co-viewing PBS. Here we test the hypothesis that overall television viewing and adult-focused viewing will decrease for the workshop group, and PBS viewing will increase.[8] We examined whether workshops had an impact on the total amount of time adults reported that children spent viewing any television, viewing PBS programming, viewing other child-focused television, and viewing adult-focused television. Overall average total viewing time increased for both groups between three and six months, by approximately 35 minutes per weekday. There were, however, no differences in total viewing time, PBS viewing time, or other child-focused viewing time at either point for workshop or control groups (Figure IV.2, Tables IV.2 and IV.3). Although at three months the workshop group was watching significantly less adult-focused television ($p<.05$), the effect was no longer significant by six months.

[8] PBS co-viewing could have increased as we hypothesized due to workshop messages and follow-up mailings about the programming. It could conceivably have decreased as well due to workshop messages about limiting television viewing, including PBS viewing.

Table IV.4. Television Use

Item	Workshop (Percentage)	Control (Percentage)
Parents		
Where Focus Child Watches Television		
Living room, family room, or kitchen	71	74
In his/her own bedroom	18	17
Other place	11	9
Average Amount of Time Focus Child Watches Television (Minutes)		
Before 8 A.M.	16	14
8 A.M. to 3 P.M.	59	63
3 P.M. to 6 P.M.	63	68
After 6 P.M.	64	64
Sample Size	**590-660**	**593-596**
Educators		
How Frequently Use Television with Children		
Every day	43	43
A few times/week	19	21
A few times/month	16	14
Less than once a month	9	8
Never	13	13
Amount of Time Television Is on When with Children		
30 minutes or less	51	49
31 to 59 minutes	11	15*
1 to 2 hours	26	27
2 hours or more	12	8*
Sample Size	**548**	**567**

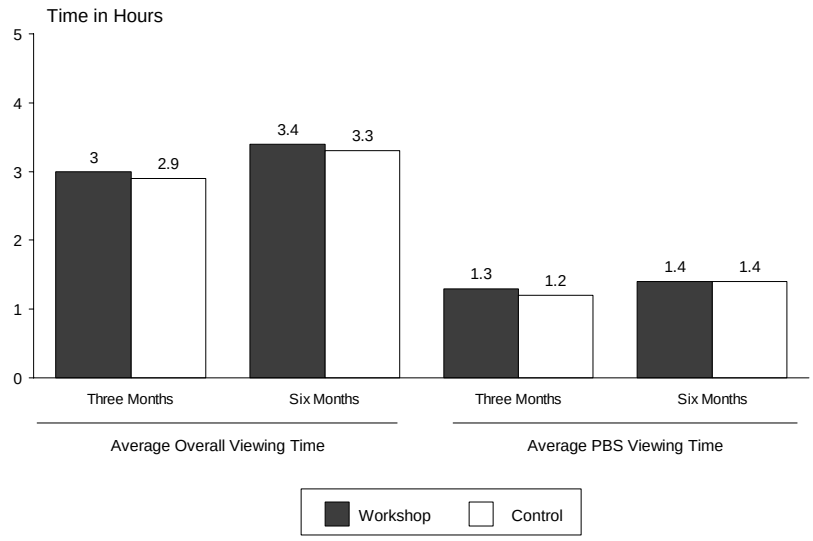
Source: Parent and Educator Second Follow-Up Surveys.

Note: Data were weighted to adjust for survey nonresponse and to equalize the contribution of each station.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.

Our sample of children is watching more television on average than children of similar ages in other research. While children of adults in our sample are viewing just over 3 hours of television per day, those in nationally representative samples view 2 to 2.5 hours per day (figures include weekend viewing) (Rideout et al. 2003; Roberts et al. 1999; and Wright et al. 2001). The viewing time reported for our sample is mainly spent viewing children's programming, primarily PBS KIDS. The large amounts of viewing time for children in both workshop and control groups and the lack of difference in the content of what is viewed make adult-child co-viewing all the more important. Because control children are being exposed to similarly high amounts of educational PBS children's television, large differences in time that adults watch with them and enrich their experience may be important for finding measurable developmental differences between the groups.

Figure IV.2: Three- and Six-Month Impacts on Children's Weekday Television Viewing Time



Source: Parent and Educator First and Second Follow-Up Surveys.

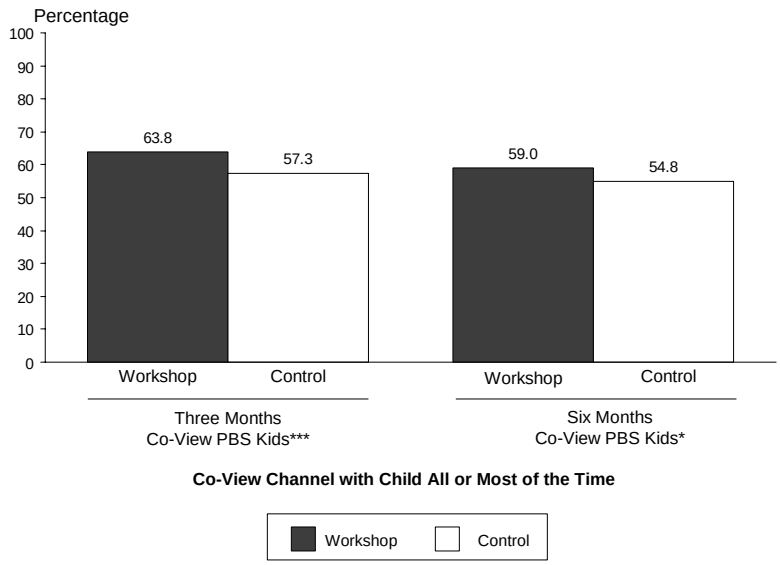
Workshops did affect some reports of adult-child co-viewing, in particular of PBS children's programming. Co-viewing ideally involves both watching a program with a child and expanding on what is viewed by discussing various aspects of it, and resembles the view and talk behaviors noted above under the Learning Triangle results. In contrast to that description, here we are reporting (1) a measure of how frequently an adult watches various kinds of programming with the child, and (2) amount of time in hours that adults report co-viewing children's programming.[9] As at three months, at six months we found significant impacts on the frequency of co-viewing PBS children's programming ($p<.01$ and $p<.1$, respectively).[10] Workshop group members were significantly more likely to report frequent co-viewing compared to the control group (Figure IV.3).[11] There were no differences in co-

[9] We were able to extract total reported time co-viewing children's programs only for parents and only at the six-month interview. Therefore, we do not include these figures in the overall tables, but report them in the text only. Workshop parents co-viewed children's programs for 1.6 hours and controls did so for 1.8 hours.

[10] At six months, there was also a significant difference for co-viewing Noggin ($p<.01$) (this channel was not included in questions at three months).

[11] We examined whether there were differences in viewing or co-viewing among parents with cable access. At both three and six months, we found that there were similar patterns in terms of the amount of time spent viewing PBS KIDS as well as co-viewing PBS among those with cable access compared to those without. We found that children without cable spent more time viewing PBS than those with cable; however, there were no treatment/control differences in the amount of time spent viewing PBS within either group.

Figure IV.3: Three- and Six-Month Impacts on Co-Viewing



Source: Parent and Educator First and Second Follow-Up Surveys.

*Estimate significantly different from zero at the 90% confidence interval, two-tailed test.
***Estimate significantly different from zero at the 99% confidence interval, two-tailed test.

viewing other networks and there were no differences among parents in workshop and control groups in terms of the overall time they spent viewing any children's programming.

Attitudes Toward Television and PBS. Many of the attitudes had little room for improvement, because at baseline many study participants were already endorsing the most favorable options. At six months, as at three months after random assignment, workshops did not affect any of the measures of participants' attitudes toward television and PBS (Table IV.3). There were no statistically significant differences for those in the workshop group, compared to those in the control group, in the percentage who, at the time of the three-month survey, disagreed with such statements as, "If it's a cartoon, I know it's safe for kids."[12] Nor were there any differences in the percentage who agreed with such statements as, "TV can be an educational tool." These findings are consistent with the three-month results. In contrast to the patterns observed for behaviors, such as those having to do with the Learning Triangle, where there was an overall decline in frequency of behaviors between first and second followups, attitudes tended to become more positive over the same period. However, they did so at comparable rates between the workshop and control groups. It is not clear why attitudes would improve over time.

[12] For ease of presentation, all variables have been coded so that a positive impact is consistent with the hypothesized effect of the workshops. Certain attitude variables were reverse-coded to allow for this: If it's a cartoon, I know it's safe for kids; I don't keep track of what my child/children in my care watches on television or videos; Television has no place in a child care setting; I/parents would be upset if I/they thought child was watching television or videos in preschool or child care arrangement; The children's programs on PBS are no different then the children's programs on other TV channels.

Books and Reading Frequency. In general, both groups reported a fairly high level of literacy behaviors at three and six months after random assignment. Adults in both groups provided a rich literacy environment. Because stations are expected to distribute at least 300 children's books per month to children who otherwise would not have books of their own, and because the Learning Triangle places particular emphasis on reading with children, we looked for changes in these areas.[13] Consistent across both followups, workshops in the study stations did not affect the percentage who had more than 25 children's books, the percentage who read with their child or children once a day or more, or the average number of minutes spent reading with a child on a given day (Tables IV.2 and IV.3). At six months, almost 70 percent of all respondents reported that they had more than 25 children's books, and about the same proportion read to their child or children once a day or more (a slight decline from three months). However, the number of minutes read per day increased slightly from 46 minutes per day at three months to approximately 50 minutes at six months. These figures are comparable or slightly higher than national data on media use.[14]

Use of Online Resources. At the second followup, those in the workshop group were more likely than those in the control group to access one or more of the PBS Web sites ($p<.1$) (Table IV.3).[15] Parents were asked if they had visited www.pbsparents.org or www.pbskids.org. In addition to those sites, educators were asked if they had visited www.pbs.org/teachersource. Overall, at six months, about 40 percent reported accessing at least one of the above Web sites. Descriptively, we know that 60 percent used the Internet at the second followup. Parents were somewhat less likely to use the Internet than educators (57 compared to 62 percent). Educators were also more likely to have Internet access in their own homes (80 compared to 55 percent of parents). At six months, however, there were no workshop impacts on actually using the information from PBS Web sites with children in their care. Given this relatively high level of Internet access, PBS may consider greater workshop emphasis on using these Web-based resources (for example, educational games, puzzles, and activities) with children. We explore use of the information on the Internet within subgroups in Chapter V.

In sum, we found a few small significant impacts on adult behaviors, with similar patterns of positive workshop-control differences across both three and six months. The size of the significant impacts was modest. For example, at three months co-viewing PBS had an effect size of 13 percent and at six months, an effect size of 8 percent. Similarly,

[13] We note that questions about these outcomes were asked separately from questions about Learning Triangle behaviors related to reading.

[14] In a recent national study of media use among young children (6 months to 6 years old), researchers found that 83 percent of homes with children under 6 have 20 or more books, 65 percent of all children under 6 are read to every day, and the average amount of time spent reading is 39 minutes (Rideout, Vandewater, and Wartella 2003).

[15] We report only six-month outcomes due to erroneously leaving this question out of the three-month interview.

at both points workshops had small positive impacts on several Learning Triangle behaviors. These Learning Triangle effect sizes ranged between 3 and 8 percent at three months and were more variable by six months (ranging between 1 and 11 percent). There were no effects however, on children's time viewing any television, viewing PBS, or adult attitudes toward television. We also estimated that among parents at six months, actual amount of time parents spent co-viewing any children's television was not significantly different across the workshop and control groups.[16] Next, we turn to the question of whether the changes in adult behavior are sufficient to affect child outcomes.

DID WORKSHOPS AFFECT CHILDREN'S SCHOOL READINESS?

Child development outcomes are difficult to change, even with intensive interventions focused directly on children (such as Early Head Start and Head Start). For example, the evaluation of Early Head Start found that the at age 3, scores for the program group on a standardized test of cognition and language increased by an average of two points over control group children (Administration for Children and Families 2002). These significant impacts occurred in the context of a long-term and intensive intervention in which case management services, home visits, parent education and training, and child care were provided over the first three years of children's development. Such findings provide a broader context for the children's school readiness impact analysis in this study, given that the *Ready To Learn* workshops were targeted at parents and educators rather than directly at children.

Below, we summarize briefly the findings from direct child assessments and complementary measures reported by parents (Table IV.5, Figure IV.4). Here, we consider only the data from children of parents who were recruited at the outset of the study.[17]

- **Children's School Readiness.** Workshops for parents did not affect children's language or emergent literacy, cognition and general knowledge, social or emotional development, and approaches toward learning.

[16] The practical differences between the groups' behaviors was small. For example, at six months overall, there were 4.5 percent more workshop members doing the full Learning Triangle three to five times a month, which translates into about 65 more workshop group members who reported that behavior compared to the control group. Further, there were no differences in children's television viewing, and although there were differences in co-viewing, there were no differences in practical terms—about seven minutes fewer co-viewing children's programming per day among the parent workshop group.

[17] As described in Chapter II and Appendix C, we did not achieve a high enough response rate to include children recruited through educators in this analysis.

Table IV.5. Impacts of *Ready To Learn* Workshops Six Months After Random Assignment on Children: Parent Sample

	Workshop Group	Control Group	Estimated Impact	*p*-value	Effect Size
Language and Emergent Literacy					
Woodcock-Muñoz Picture Vocabulary standard score	94.7	95.0	-0.3	0.70	-2.2
Percentage of children with Picture Vocabulary score of 100 or above	34.4	38.2	-3.8	0.21	-7.7
Woodcock-Muñoz Letter-Word Identification standard score	105.7	104.6	1.0	0.26	7.0
Percentage of children with Letter-Word Identification score of 100 or above	67.7	62.7	5.0	0.10	10.3
Print knowledge score	1.1	1.1	0.0	0.47	4.3
Book knowledge score	3.2	3.1	0.1	0.38	5.0
Percentage Whose Parent Reports That Child:					
Recognizes most/all letters of the alphabet[a]	67.1	67.0	0.0	0.99	0.1
Recognizes name in print[a]	95.6	94.2	1.3	0.31	5.7
Is able to/pretends to read[a]	70.9	69.7	1.2	0.68	2.7
Writes or draws[a]	77.4	76.5	0.9	0.72	2.1
Writes first name[a]	77.2	77.1	0.2	0.95	0.4
Emergent literacy composite[a,b]	3.7	3.8	0.0	0.72	-1.9
Cognition and General Knowledge					
Leiter-R Classification standard score	104.8	105.4	-0.6	0.55	-3.9
Percentage Who:					
Name 10 colors	69.0	66.6	2.4	0.39	5.2
Count to 10	71.8	72.2	-0.4	0.89	-0.8
Percentage Whose Parent Reports That Child:					
Identifies 4 colors[a]	82.5	84.2	-1.8	0.45	-4.9
Identifies 10 written numbers[a]	50.6	49.3	1.3	0.66	2.6
Social and Emotional Development					
Behavior Problems score[a,c]	25.7	25.8	-0.1	0.55	-3.7
Adaptive Social Behavior Inventory: Expressive score[a]	49.4	48.8	0.6	0.41	5.7
Adaptive Social Behavior Inventory: Compliant score[a]	48.9	49.4	-0.5	0.48	-5.0
Adaptive Social Behavior Inventory: Disruptive score[a,c]	49.8	48.4	1.5**	0.02	15.6
Approaches Toward Learning					
Leiter-R Attention Sustained standard score	104.9	105.2	-0.3	0.76	-2.1
Attention and engagement during testing	19.2	19.1	0.1	0.74	2.0
Sample Size	**500-563**	**446-503**			

Source: Parent Second Follow-Up Survey and Child Assessment.

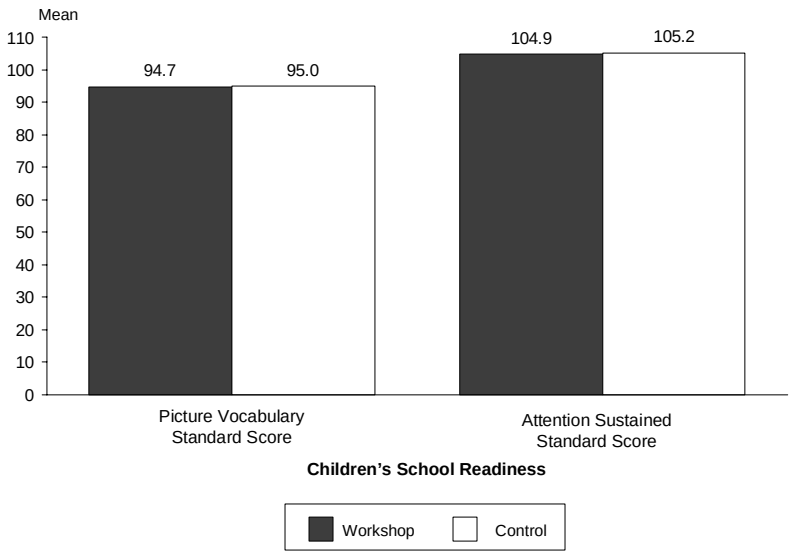
[a]Parent report measures. All other outcomes directly assessed.

[b]The emergent literacy composite is the sum of five items and is scored as in the Family and Child Experiences Survey (FACES): recognizes all or most letters of the alphabet; counts to 20 or more; mostly writes/draws, not scribbles; writes own first name; and identifies red, yellow, blue, and green by name.

[c]For this measure, higher scores indicate less-desirable behavior. Therefore, lower scores, or impacts with negative signs for the workshop group, show a positive impact of the program because they represent lower levels of undesirable behavior.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Figure IV.4: Six-Month Impacts on Children's Development



Source: Child Assessment.

Language and Emergent Literacy. There were no differences between groups on our measures of language and emergent literacy skills. We assessed children's language and emergent literacy development through use of both standardized assessments and parents' reports about their children's accomplishments. The standardized assessments were the Woodcock-Muñoz Picture Vocabulary test and the Letter-Word Identification test. We also used two measures from a book-reading task, print knowledge and book knowledge (Table IV.5). In addition, we asked parents to rate how many letters of the alphabet their child could recognize, whether the child could recognize his or her name in print, could read (or tell a connected story while pretending to read), write or draw, and write his or her first name. Overall, considering the standardized assessments, scores on the Woodcock-Muñoz Picture Vocabulary test were slightly below the norming sample mean, and equivalent proportions of workshop and control children scored at the mean (100) or higher. Both workshop and control groups performed slightly higher than the norming sample mean on the Woodcock-Muñoz Letter-Word Identification test.

Cognition and General Knowledge. We found no differences on our measures of cognition and general knowledge (Table IV.5). We used standardized assessments and parents' reports about their children's accomplishments to measure these attributes. Children of workshop group parents scored the same as children of control group parents on their ability to perform on the Leiter-R Classification test, identify colors, count 10 objects, or recognize 10 written numbers.

Social and Emotional Development. We found no positive differences on most of our measures of social and emotional development and one difference in the negative direction. Our measures attempted to capture both positive and negative aspects of behavior through parents' reports. We used a measure of behavior problems as well as the Adaptive Social Behavior Inventory (ASBI) that included three subscales: Expressive, Compliant, and Disruptive behaviors. For the positive behavior subscales (Expressive and Compliant) there were no differences between the groups, although there was a difference for the ASBI Disruptive, with workshop children rated by their parents as having more of these behaviors than control children ($p<.05$) (Table IV.5). There were no differences on the measure of behavior problems.

Approaches Toward Learning. There were no differences between workshop and control children on our measures of attention and engagement. Children's ability to stay focused and engaged with a task is important for later performance in school, as well as in other educational settings. The two outcomes in this area are (1) the Leiter-R Attention Sustained task, in which children were asked to locate and cross out target shapes hidden amongst distracter shapes on a sheet of paper; and (2) assessors' ratings of children's attention and engagement during testing. We found that children in both groups scored above the norming sample mean of 100 on the Attention Sustained task. They also scored similarly on the assessor ratings of attention and engagement, with an average score of 2.4 on each of eight items rated on a 4-point scale (see Table II.3 for details on the construction of the scores).

In sum, there were no positive impacts on child outcomes for the children whose parents attended a *Ready To Learn* workshop relative to those whose parents did not. These findings were not unexpected, given that the effects of the intervention on adults were small and as discussed above, child outcomes are difficult to improve even when an intervention directly focuses on children. In the next chapter, we examine differences among subgroups related to participant characteristics and elements of workshops to determine if *Ready To Learn* workshops were more beneficial to certain types of participants, or if there were features of workshops that were related to differential outcomes for adults and children.

CHAPTER V

HOW DO ADULT AND CHILD IMPACTS VARY BY PARTICIPANT AND WORKSHOP CHARACTERISTICS?

This chapter examines whether impacts on adults and children vary by participant or workshop characteristics. The subgroup analysis is designed to determine (1) whether *Ready To Learn* workshops are more effective for certain participants, and (2) whether certain workshop characteristics are associated with positive outcomes for participants. We conduct this subgroup analysis because impact estimates for the full sample might conceal important differences in impacts across subgroups. Impacts could, for example, be concentrated in, or be much larger for, some subgroups. Conversely, if impacts are not evident overall for the full sample, they might still be evident for some subgroups. As in Chapter IV, we present the longer-term impacts on the adult and child behaviors and contrast them to the short-term impacts (see Johnson et al. [2003] for a complete presentation of the short-term findings). We begin by presenting the participant subgroup findings, which include the important comparison of impacts on parents and educators. We conclude by presenting the workshop subgroup impacts. The limitations on our analyses described in Chapter IV also apply to these analyses.

FOR WHICH ADULTS AND CHILDREN ARE *READY TO LEARN* WORKSHOPS MOST EFFECTIVE?

- **Parents Versus Educators.** Although, overall, the impacts were sustained from three to six months, the longer-term impacts were concentrated in the parent group. By six months, workshops had modest, positive impacts on parents in four of the five outcome areas. These findings are different from the short-term impacts for parents, which were concentrated in co-viewing behaviors. Although the trend was positive, there was no clear pattern of significant longer-term impacts on educators. This contrasts with the short-term impacts on educators concentrated in their use of Learning Triangle activities. Despite these findings, workshops were equally effective for parents and educators (workshops were not more effective for one group versus the other).

- **Parents with High Versus Low Literacy.** Among parents, workshops are not notably more effective for low-literacy families compared to those with comparatively higher levels of literacy (as measured by education).
- **Parents Who Are Employed Versus Unemployed.** There are also no consistent differences based on parents' employment status.
- **Urban Versus Rural Settings.** There is some evidence to suggest that workshops are more effective for those living in non-rural areas, but statistically significant impacts appear on only a limited number of outcome measures.
- **Race/Ethnicity.** There is no strong evidence to suggest that workshops are more or less effective for either White non-Hispanics or African Americans, Hispanics, and those classified as "other" race/ethnicity.
- **Children's Age, Gender, and Child Care Participation.** Among the parent sample, there is no strong evidence that workshops are more or less effective based on the age or gender of the focus child, or whether or not the child was in child care.

Ready To Learn workshops are provided to both parents and early childhood educators. In addition, PBS requires that stations conduct outreach to children and families in four priority target populations: (1) families with low literacy, (2) families for whom English is not their primary language, (3) families living in rural areas, and (4) families with children who have disabilities.[1] Here, we explore what the subgroup impacts are from workshop participation based on participant and child characteristics. From a policy and operational perspective, it is important to know whether, and how, workshops affect different participants, so that resources are targeted efficiently. Further, knowing more about whether workshop features are more or less effective can inform PBS's efforts to improve workshops.

Workshops for educators may have similar or different impacts when compared with the impacts of workshops for parents. Parents have many more opportunities to co-view with their children than do educators, which might make it more likely that they would implement the workshop lessons. On the other hand, educators may be better equipped to incorporate the workshop lessons into their daily routines on a regular basis. In terms of the four PBS priority target populations, the hope is that workshops are particularly effective for each of these subgroups. Where we have sufficient data, these subgroups are explored. Tables presented in this chapter and in Appendix F summarize the subgroup impact results.

[1] Two of these populations are too small in the study sample to allow an analysis of workshop impacts. Only 23 percent of parents do not speak English as their primary language and only 15 percent of parents have a child with a disability. In addition, the data from educators are not parallel, which prohibits pooling the data across both groups (another reason the sample size is too small).

The statistical significance of these subgroup differences is presented in the far right-hand column of each table, and indicates where one type of workshop provided impacts that are statistically different from the impacts provided by the workshop counterpart. From a policy or operational perspective, this actually is the statistical test of greatest relevance, for it answers the question of how much a particular participant or workshop characteristic matters.[2] For example, if we find a significant workshop and control estimated impact of 15 percentage points for subgroup A, and a significant estimated workshop and control group impact of 5 percentage points for subgroup B, an asterisk in the far right column of the subgroup table would tell us that the impact of workshops for subgroup A was significantly larger than the impact of workshops for subgroup B.[3]

Parents and Educators

Data presented in Chapter III show that there are some differences between workshops provided to parents and those provided to educators. On average, educator workshops are longer by about 40 minutes. On the other hand, parents were more likely to attend workshops that were multi-session, facilitated by Coordinators (rather than by the station staff or partners), and in which the facilitator planned follow-up outreach.

The findings from the analysis of parent and educator subgroups show no clear indication that workshops are more effective for parents than for educators, or vice versa (far right-hand columns, Tables V.1 and V.2). Among parents and educators individually, however, there are some important, and significant, differences between those in the workshop groups and those in the control groups. These impacts are important to examine, because they address the basic policy question as to whether, and how, workshops affect parents, as well as whether, and how, they affect educators.

Parents. Impacts observed three months after random assignment were sustained at six months; additional significant changes in behavior emerged with long-term followup. Consistent with the three-month findings, workshop participation had a significant, positive impact on parents' behaviors related to co-viewing when measured at six months (Table V.2). The general trend over time between three and six months following the workshops is consistent with the overall findings presented in Chapter IV—co-viewing behavior decreases over time for both the workshop group and the control group parents, but less so for those in the workshop group.[4] The significant difference in attitudes about cartoons is also sustained between the three- and six-month interviews (Table V.2).

[2] Examining those in the participant or workshop subgroup compared to the *control group* tells us only that the workshop impact is significant, not that the particular participant or workshop characteristic under examination is significant.

[3] A chi-square statistic is used to test for subgroup differences.

[4] See Appendix C for a discussion of the sensitivity analyses we conducted to explore this trend in the control group and possible explanations for it.

Table V.1. Impacts of *Ready To Learn* Workshops Three Months After Random Assignment: Parents and Educators

	Parents			Educators			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Learning Triangle Activities							
Percentage Who (3-5 Times/ Month):							
View program and talk about program or characters	97.8	96.3	1.5	75.5	69.7	5.7*	
View program and do related activity	90.4	90.0	0.4	74.6	71.0	3.6	
View program and read related book	70.0	70.0	0.0	54.2	44.6	9.6**	**
View, read, and do related activity	57.1	55.9	1.3	45.8	37.2	8.6**	
Television Viewing and Co-Viewing Behaviors							
Children's Weekday:							
Total TV viewing time (hours)	4.3	4.4	-0.0	1.0	1.1	-0.1	
Total PBS viewing time (hours)	1.8	1.7	0.1	0.6	0.6	0.0	
Total adult-focused TV viewing time (hours)	0.3	0.4	-0.1	0.0	0.0	0.0	
Percentage Who (All or Most of the Time):							
Co-view PBS KIDS	58.6	51.4	7.2**	67.5	62.3	5.2	
Co-view Nick Jr.	39.5	32.8	6.8**	22.8	21.7	1.1	
Co-view Cartoon Network	30.0	27.6	2.3	10.4	7.7	2.8	
Co-view Disney Channel	34.6	28.9	5.7*	22.3	18.8	3.5	
Co-view ABC Family Channel	22.3	22.7	-0.4	9.3	7.4	1.9	
Attitudes Toward Television and PBS							
Percentage Who Disagree That:							
Cartoons are safe for kids	61.4	54.7	6.7***	78.1	79.0	-0.9	**
Don't keep track of what kids watch	86.4	88.5	-2.2	91.4	96.3	-4.9**	
TV has no place in a child care setting	75.9	78.0	-2.1	87.4	88.1	-0.8	
Upset if TV used in child care	69.5	71.8	-2.3	81.7	77.7	4.0	
PBS is the same as other channels	81.8	81.5	0.3	89.7	86.2	3.5	
Percentage Who Agree That:							
TV can be an educational tool	96.9	96.3	0.7	97.5	97.5	0.0	
Even cartoon violence is harmful to kids	89.2	88.1	1.1	92.8	93.6	-0.8	
PBS broadcasts high-quality kids' TV	98.4	98.7	-0.3	98.7	98.9	-0.2	
Comfortable if used TV to teach	84.5	86.1	-1.6	86.0	85.3	0.7	
PBS programs are safe for kids	91.0	88.3	2.7	83.2	85.7	-2.5	
Books and Reading Frequency							
Percentage with ≥26 children's books	61.3	61.8	-0.4	71.5	74.7	-3.2	
Percentage who read once a day or more	68.0	71.1	-3.1	91.9	94.0	-2.1	
Minutes reading with child per day	51.6	49.1	2.5	43.4	49.3	-5.9 **	**
Visited library in past month	57.2	56.0	1.2	NA	NA	NA	
Use of PBS Online Resources							
Visit Web site(s)	31.9	32.1	-0.2	NA	NA	NA	
Use information from Web sites	23.4	22.7	0.7	NA	NA	NA	
Sample Size	**589-685**	**532-609**		**238-369**	**238-386**		

Source: Parent and Early Childhood Educator First Follow-Up Surveys.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table V.2. Impacts of *Ready To Learn* Workshops Six Months After Random Assignment: Parents and Educators

	Parents			Educators			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Learning Triangle Activities							
Percentage Who (3-5 Times/ Month):							
View program and talk about program or characters	92.9	92.1	0.8	70.9	68.1	2.8	
View program and do related activity	81.0	82.3	-1.3	68.5	66.4	2.1	
View program and read related book	58.9	54.4	4.5	49.7	43.5	6.2	
View, read, and do related activity	44.1	37.6	6.5**	42.3	36.9	5.4	
Television Viewing and Co-Viewing Behaviors							
Children's Weekday:							
Total TV viewing time (hours)	4.5	4.5	0.0	1.3	1.2	0.1	
Total PBS viewing time (hours)	1.8	1.8	0.0	0.6	0.6	0.0	
Total adult-focused TV viewing time (hours)	0.4	0.4	0.0	0.0	0.0	0.0	
Percentage Who (All or Most of the Time):							
Co-view PBS KIDS	52.7	43.9	8.8***	63.1	60.2	2.8	
Co-view Nick Jr.	27.6	25.8	1.8	22.9	24.4	-1.5	
Co-view Cartoon Network	25.7	24.3	1.4	10.6	11.9	-1.2	
Co-view Disney Channel	26.8	25.5	1.3	21.8	20.8	1.0	
Co-view ABC Family Channel	13.2	16.1	-3.0	8.0	7.8	0.2	
Co-view HBO Family	6.8	7.8	-1.0	5.8	2.1	3.6**	**
Co-view Noggin	11.0	7.4	3.6**	6.3	2.3	4.0**	
Attitudes Toward Television and PBS							
Percentage Who Disagree That:							
Cartoons are safe for kids	67.9	63.2	4.6**	78.3	83.8	-5.5**	***
Don't keep track of what kids watch	93.1	91.8	1.3	94.1	95.7	-1.6	
TV has no place in a child care setting	84.8	87.4	-2.6	91.9	91.8	0.2	
Upset if TV used in child care	80.7	80.0	0.7	78.7	82.1	-3.5	
PBS is the same as other channels	89.2	88.4	0.8	89.3	88.6	0.8	
Percentage Who Agree That:							
TV can be an educational tool	97.9	96.5	1.4	98.0	97.7	0.3	
Even cartoon violence is harmful to kids	95.6	94.7	0.9	94.6	94.2	0.4	
PBS broadcasts high-quality kids' TV	99.7	99.8	-0.1	98.6	97.8	0.8	
Comfortable if used TV to teach	87.9	89.6	-1.7	85.3	84.8	0.5	
PBS programs are safe for kids	89.7	90.8	-1.1	83.7	85.1	-1.4	
Books and Reading Frequency							
Percentage with ≥26 children's books	63.3	62.0	1.3	80.8	78.5	2.3	
Percentage who read once a day or more	57.8	54.8	3.0	94.9	93.5	1.4	
Minutes reading with child per day	47.3	47.7	-0.4	56.0	54.3	1.7	
Visited library in past month	53.3	49.3	4.0	NA	NA	NA	
Use of PBS Online Resources							
Visit Web site(s)	39.1	36.2	2.9	45.3	38.6	6.7	
Use information from Web sites	29.1	23.9	5.3**	30.0	31.6	-1.5	
Sample Size	**589-685**	**532-609**		**238-369**	**238-386**		

Source: Parent and Early Childhood Educator First Follow-Up Surveys.

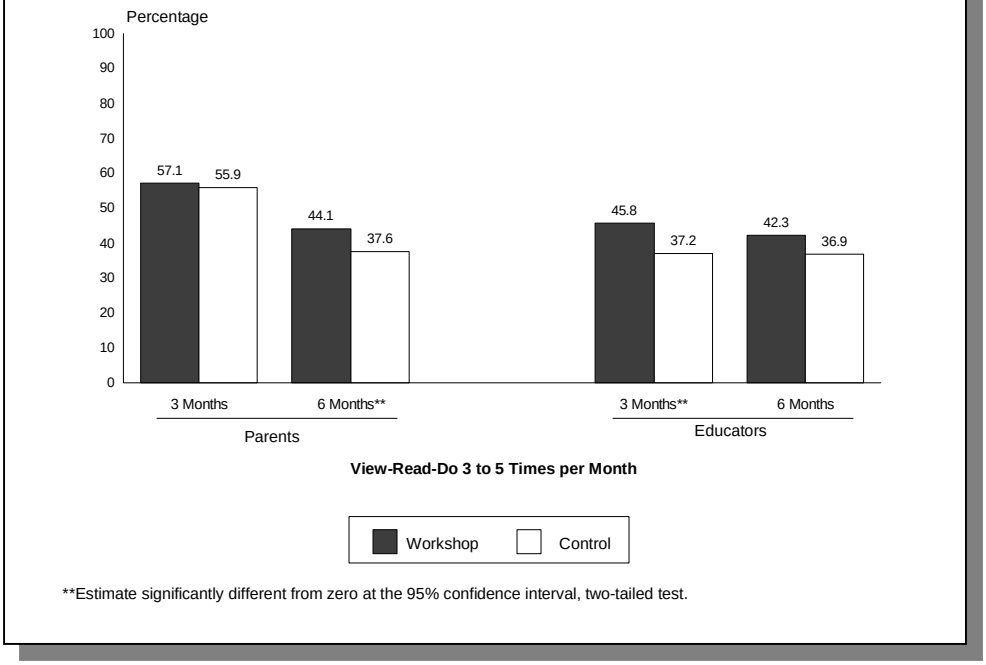
*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Six months after random assignment, workshops continued to have positive impacts on Learning Triangle behaviors, including significant differences that did not emerge at three months: more workshop parents were likely to view a television program, read a book, and do a related activity at least three to five times a month ($p<.05$). Although the percentage of parents engaged in View-Read-Do behaviors declined between the three- and six-month interviews, the difference between the workshop and control groups is significant. The control group dropped somewhat more than the workshop group (see Figure V.1). Another behavioral change to emerge six months after the workshops is that workshop group parents were significantly more likely than controls to report using information from PBS Web sites. Twenty-nine percent of parents in the workshop group reported using the information, compared with 24 percent of the controls ($p<.05$). It is not clear why workshops had a significant impact on these behaviors at six months, but not at three.

Educators. In contrast to parents, no new behavioral changes emerged for educators, and the significant impacts on Learning Triangle activities found at three months are not sustained after six months (Tables V.1 and V.2). However, there remains a pattern of small but positive nonsignificant differences for the workshop group.

Though modest, the evidence of long-term positive impacts in several adult behaviors of parents indicates that stations are realizing some, but not all, of their intended effects on parents in the workshop group, compared to those in the control group. The early impacts on educator use of the Learning Triangle behaviors were not sustained through six months, which indicates that educators may benefit from more followup, in the form of mailings or additional workshops designed to reinforce workshop lessons.

Figure V.1: Three- and Six-Month Impacts on View-Read-Do for Parents and Educators



**Estimate significantly different from zero at the 95% confidence interval, two-tailed test.

We now turn to the *Ready To Learn* priority target populations to consider whether workshops are effective for these groups in particular: (1) families with low literacy, (2) families for whom English is not the primary language, (3) families living in rural areas, and (4) families with children who have disabilities. Unfortunately, two of these populations are simply too small in the current sample to allow a meaningful analysis of workshop impacts.[5] Based on those who completed a baseline survey in a language other than English, only 23 percent of parents would be classified as those for whom English is not the primary language. Other data from the surveys on primary language spoken in the home concur with this estimate of the size of the non-English-speaking sample. In terms of the target population of families with children who have disabilities, only 15 percent of parents reported having a focus child with special needs (Table D.3). There are no parallel data for the educators, so the sample cannot be pooled across parents and educators, which further limits our ability to obtain a large enough sample to analyze this participant characteristic.

However, for the other two target populations (families with low literacy and families living in rural areas), we do have sufficient sample sizes to analyze workshop impacts by subgroups. Following the discussion of findings for these final two priority target populations, we also examine subgroups defined by the participants' employment and race. Because some of the data presented in the interim report reflect differences among sample members by these characteristics—particularly in television-viewing habits—these supplemental analyses explore the question of whether workshops are having differential effects within these particular subgroups of participants as well (see Johnson et al. [2003] for a discussion of these findings). We conclude by examining child impacts for subgroups of children defined by the children's age, gender, and child care status.

Low-Literacy Families

The evidence here suggests that workshops are not more effective in changing adult behaviors for one group over another, given that there are few significant subgroup differences between these two parent education groups (Tables F.1 and F.2). In addition, there is no consistent pattern of subgroup differences on the child outcomes measured at six months (Table F.3). The analysis of low-literacy families is confined to parents. Here, as in Chapter III, we use education as an approximate measure of literacy, creating subgroups defined by whether or not the parent has less than a high school diploma or GED or more than this level of education. We note that although the workshops are not more or less effective for children with parents who have less education, the children of those parents are performing worse than their peers on a number of measures of school readiness. Children of parents with less than a high school education scored consistently lower than children of parents with a high school education on many of the outcome measures under study, and in particular they scored lower on measures of language and emergent literacy. For example,

[5] We did not over sample to ensure large enough numbers of participants with these characteristics. We enrolled those recruited by stations and their partners and found too few from these groups to conduct subgroup analyses.

children of parents with lower levels of education scored about 15 points lower (one standard deviation) on a test of vocabulary.

Rural Families

At six months, there are six significant subgroup differences in impacts (Table F.4), but there is no clear pattern indicating that either rural or non-rural families are experiencing more workshop impacts. The analysis of the adult behaviors by where families live includes data from both parents and educators.[6] At six months, the non-rural group has a pattern of positive impacts on five outcomes: two of the Language Triangle activities, one attitude, the percentage with 26 or more children's books, and visiting the PBS Web sites. This pattern is somewhat consistent with the three-month finding (Table F.5). At six months, the rural group has significant negative workshop impacts on viewing a program and talking about it with children and on disagreeing that PBS is the same as other channels. However, there are positive impacts on co-viewing PBS and Noggin.[7] There is no clear pattern of impacts on children's school readiness for children of parents who live in rural areas as compared to those who live in non-rural areas (Table F.6).

Employment Characteristics

At six months, as at three, there are few significant subgroup differences; thus the evidence does not strongly support the idea that workshops are particularly effective for those not employed, compared to those who are (Tables F.7, F.8). Here, the analysis by employment status is confined to parents because educators, by definition, were all employed. The subgroups are defined by those who work either full- or part-time, versus all others, which includes homemakers, students, those disabled, and those looking for work. In the report on three-month impacts (Johnson et al. 2003), we found different viewing patterns based on employment status, and raised the possibility that those not employed full- or part-time may have greater opportunity to put into practice lessons learned from *Ready To Learn* workshops. At six months, there are some positive impacts for the not-employed subgroup, compared to their control group counterparts, in particular in implementing the full Learning Triangle; co-viewing PBS, Cartoon Network, and Noggin; keeping track of what the children are watching on television; reading once per day or more; and the number of minutes reading. These longer-term findings are not consistent with the three-month findings for this group—at three months, we found a positive impact on one Learning Triangle activity (viewing a program and reading a book), and a negative impact on one attitude toward television (indicating that they would not be upset if television was used in their child care setting).[8] As such, it is not possible to conclude that those at home are likely

[6] Parents reported on where they lived, and educators reported on where they worked. We assumed that children were unlikely to be cared for in a completely different geographic area than where families lived.

[7] Noggin broadcasts educational programs that are similar to those broadcast on PBS KIDS.

[8] The negative impact was on the statement, "I would be upset if television was used in my child care setting." A positive attitude would be the parent *not* being upset and therefore disagreeing with the statement.

to experience consistently greater effects than those working full- or part-time, but the longer-term impacts indicate that behaviors in four of the five outcome areas were affected for the parents who were not employed. The impact analysis of the child outcome data for this subgroup does not provide a clear pattern of workshop effects to indicate that workshops benefit children from one group over the other (Table F.9).

Race/Ethnicity Characteristics

The impact of workshop participation by race does not provide clear evidence with which to determine whether workshops are more or less effective for either Whites or non-Whites (African Americans, Hispanics, and those classified as "other" race/ethnicity) (Tables F.10, F.11, and F.12). This is the case for both the three- and six-month adult behaviors and the child outcomes.

Child Age, Gender, and Child Care Status

At six months, we also examined whether impacts on the child outcomes were different for younger versus older children (3 or 4 years old versus 5 or older); boys versus girls; and children in child care for fewer than 10 hours per week versus children in care 10 hours per week or more. There was no differential pattern of impacts on these subgroups as measured by the child outcomes (Tables F.13, F.14, and F.15). These findings provide no clear guidance to suggest programs target one group over another for workshop participation.

ARE CERTAIN WORKSHOP CHARACTERISTICS ASSOCIATED WITH POSITIVE OUTCOMES?

- **Adult Impacts.** At six months, none of the studied workshop characteristics differentiates the impacts on adult behaviors. This is in contrast to the three-month finding that providing time for planning a View-Read-Do activity was related to implementation of Learning Triangle behaviors.
- **Child Impacts.** At six months, none of the workshop characteristics studied clearly differentiate the impacts on child outcomes.

The content and format of *Ready To Learn* workshops have developed over time and were explicitly defined during the two-day Institute for station Coordinators that PBS hosted in July 2002. As described in Chapter III, Coordinators participated in a number of training sessions covering topics on workshop content, presentation, and followup and were given

(*continued*)
However, we found that more control group members than workshop group members had the positive attitude.

guidelines on the recommended agenda for each workshop. Chapter III provides descriptive data on these characteristics from our workshop observations; here, we assess the extent to which content coverage, quality of presentation, and overall quality are associated with positive outcomes. We reiterate the limitations on interpretation of this analysis: findings cannot be used to state that certain workshop characteristics cause any differences in outcomes we find, since participants were not randomly assigned to one type of workshop or another. Rather, we can only state that there is an association between the workshop characteristics and their outcomes. Nevertheless, in the interest of contributing to the ongoing development of the most effective *Ready To Learn* workshop, these associations between workshop characteristics and participant outcomes are informative, particularly should patterns arise.[9]

The specific subgroups related to workshop characteristics that we analyze are: (1) workshops that do/do not cover all key content areas, (2) workshops that are/are not rated as providing a high-quality presentation, (3) workshops that are/are not rated as having high quality overall, (4) workshops during which participants are/are not given time to plan a View-Read-Do activity, (5) workshops during which participants are/are not given time to practice a View-Read-Do activity, (6) workshops during which reading a book to children was/was not demonstrated, and (7) workshops of more/less duration in time. For each of these seven subgroups, we discuss the findings for which there are any statistically significant differences between subgroups (for example, between participants in workshops that do and do not cover all key content areas).

Full Content Coverage

PBS has defined key content areas to cover in workshops. These include information on *Ready To Learn*, child development, the station and its programming, media literacy, and the View-Read-Do Learning Triangle. The assessment of coverage of key concepts is based on the observations MPR field staff recorded on the workshop observation form at the time of the baseline workshop. Based on these observations, a key area was considered covered when each of the individual items matching that area was observed during the workshop (see Table III.1). The analysis of workshop content coverage examines whether, in workshops in which all key concepts were covered, there were impacts that were significantly different from those found in workshops where all key concepts were not covered. The hypothesis is that workshops that meet the PBS guidelines for coverage of essential workshop elements will be associated with greater impacts than those that do not.

At six months, in workshops where all content areas were covered, we find some significant positive impacts for the workshop group, compared to their control group counterparts, in several areas: viewing a program and reading a related book, implementing

[9] Another concern with such a subgroup analysis is that impacts will be found to cluster within a particular set of stations, and that it may be aspects of the station—rather than workshop characteristics—that are driving the results. We explored this concern in the first report (Johnson et al. [2003]) and did not find that workshop subgroup impacts clustered in particular stations.

the full Learning Triangle (View-Read-Do), the total time children are viewing television in a typical weekday, co-viewing of HBO Family, the number of minutes spent reading to children, and visiting the PBS Web sites. In addition, there was one negative impact—workshop group members in workshops that covered all content were less likely to disagree with the statement, "TV has no place in a child care setting" than their control group counterparts (Table F.16). Where all content areas were *not* covered, however, we also found significant positive impacts on workshop group behaviors compared to those in the control group, related to co-viewing behaviors: in the likelihood of co-viewing PBS KIDS and Noggin, and in the likelihood of agreeing that television can be an educational tool. Workshop group members in workshops that did not cover all content were also less likely to co-view the ABC Family Channel than their control group counterparts (a negative impact). In assessing whether these impacts are significantly different from each other—in determining how important it is for workshops to cover all content areas, as opposed to less coverage—there is no clear indication in favor of full content coverage for the adult or child outcomes.

Quality of Presentation

We explored the hypothesis that workshop facilitators' ability to organize a workshop, communicate with participants, and convey both information and enthusiasm would be important to the effectiveness of the workshops. This measure of presentation quality is based on data from the workshop observations, a measure that provides an overall rating of each workshop's presentation quality as poor, fair, good, very good, or excellent (Table III.2). This analysis examines whether the impacts for those who attended workshops rated as very good or excellent in presentation quality are significantly different from the impacts for those who attended workshops not considered to be of high quality. For the adult behaviors at six months (as at three), there is no indication that higher-quality workshops have significantly different impacts (Tables F.19 and F.20).

For the child outcomes, there were no significant differences by quality of presentation (Table F.21). The lack of subgroup differences suggests that the quality of presentation—as measured here—does not play a role in determining where to expect impacts from *Ready To Learn* workshops. A possible explanation for lack of effects is the limited variability among workshops. These were workshops offered by a selected group of 20 stations, and most were rated by observers as good, thereby reducing the differentiation between subgroups of workshops on such a measure.

Overall Workshop Quality

We tested the hypothesis that workshops rated high in terms of overall quality (those that covered all the PBS essential content areas, and those that were rated high in their presentation quality) will have a greater impact than those that did not. As above, at both follow-up periods, there is no pattern of significant differences in impacts on adults for those who attended what were determined to be overall high-quality workshops versus those attending other workshops. The same is true for impacts on child outcomes. Positive (and a few negative) impacts appear on a number of outcome measures, for both subgroups

(Tables F.22, F.23, and F.24). There is no consistent pattern of significant differences across the two groups.

We next looked at subgroups defined by additional specific workshop characteristics. These are characteristics related to the content of the workshops but more directly linked to certain outcome measures, based on the hypothesis that workshops exhibiting these particular characteristics would have the best chance of producing the intended behavioral changes. These characteristics are (1) whether or not participants were given time to plan a View-Read-Do activity during the workshop, (2) whether or not participants were given time to practice a View-Read-Do activity during the workshop, and (3) whether or not the facilitator demonstrated how to read a book aloud to children during the workshop. The outcomes expected to change are engagement in the full Learning Triangle, given the planning and practice time, and literacy behaviors—either reading a book related to a program or the frequency of reading with children.

Planning a View-Read-Do Activity

At six months, there were no significant differences in impacts for those in workshops that included time to plan a View-Read-Do activity versus those in workshops that did not provide this planning time (Table F.25). This is in contrast to the three-month findings indicating that when given time to plan an activity, workshop participants were more likely to view a program, read a book, and do an activity all on a related topic—the full Learning Triangle ($p<.1$), have children who viewed more PBS ($p<.1$), and co-view the Disney Channel (Table F.26). At six months, the absence of impacts on adult behaviors within the group that planned a View-Read-Do activity suggests that, although the planning activity may have mattered early, its importance diminished over time. There was no clear pattern of differences across the two subgroups in child outcomes (Table F.27). Workshops that provide participants with a hands-on planning opportunity may sustain their short-term impacts if workshop lessons are reinforced by sending participants additional information or conducting another workshop.

Practicing a View-Read-Do Activity

At six months (as at three), there is no pattern of significantly greater impacts on any adult or child outcomes for those who attended a workshop during which the facilitator gave workshop participants time to practice a View-Read-Do activity during the workshop, versus workshops where this was not done (Tables F.28, F.29, and F.30). It is important to remember that, in just over half the workshops in which participants were given time to practice a View-Read-Do activity, they were given, on average, five minutes or less (see Chapter III). At six months, for the adult behaviors of those who attended a workshop that included practice time, there were significant impacts in four of the five outcome areas (viewing a program and reading a related book ($p<.1$); View-Read-Do ($p<.1$); co-viewing PBS KIDS and Noggin ($p<.05$ and .001, respectively); reading to children once per day or more ($p<.05$); and visiting PBS Web sites ($p<.1$)). There is no clear explanation for why these outcomes are significant at six months when many were not significant at three months.

Demonstrating How to Read a Book with Children

At six months (as at three months), there are no significantly greater impacts on any of the adult outcomes for those who attended a workshop during which the facilitator demonstrated reading a book during the workshop, versus workshops where this was not done. While there are some significant impacts for those in each group—where reading a book was and was not demonstrated—none of these impacts is significantly greater between the two groups, which suggests that this particular workshop component is not as important as others and does not play a clear role in whether participants subsequently read a book related to a television program or read more books overall (Table F.31, F.32). There is no pattern of subgroup differences for child outcomes based on this workshop characteristic (Table F.33).

Extent of *Ready To Learn* Exposure

Finally, we turn from measures of workshop content and quality to the amount of intervention received, to test the hypothesis that "more is better." The extent of exposure to *Ready To Learn* concepts can be examined by looking at several measures: (1) the actual length of the workshop in minutes, (2) the extent and form of followup by station Coordinators following a workshop, and (3) participation in subsequent workshops. Because of sample size limitations, the latter two measures cannot be addressed using regression analysis, so we discuss them based on descriptive data. The first measurement of exposure, however, can be analyzed to test the hypothesis that participants who received longer workshops would have greater impacts than those who received shorter workshops. This subgroup is defined based on the workshop "dosage" received, measured in terms of the number of minutes allotted to the baseline workshop.[10]

Longer workshops are defined as those lasting more than 75 minutes.[11] At six months, there was no clear pattern of significant differences indicating that longer workshops were related to better adult or child outcomes. This is consistent with the three-month adult outcomes (Tables F.34, F.35, F.36). The results do not suggest that a longer workshop is preferable to a shorter one.

As noted above, we examined the other two measures of exposure descriptively. First we examined the extent of followup after a workshop (Table V.3). By six months after the

[10] It would have been preferable to construct a "dosage" measure that summed all minutes of exposure to *Ready To Learn* workshops, so that the analysis took into account those who attended multiple sessions. Unfortunately, this was not possible, because attendance at subsequent workshops in a multi-session series was not uniform (or randomly assigned), and we could not easily determine which control group sample members would or would not also have attended additional sessions if offered the opportunity. Also, for some workshops, our implementation of study procedures cut into the time allocated for workshop delivery. Hence, this measure of dosage, while accurate, does not reflect usual practice in all cases.

[11] The PBS recommended guideline for workshop length is one hour. Because of sample size limitations and a concern that some shorter workshops had been unintentionally compromised by study procedures, we increased this to 75 minutes.

workshop, 55 percent of parents and 39 percent of educators in the workshop group reported that they had received *Ready To Learn* materials.[12] From the three-month interview to the six-month interview, the rate of workshop followup increased substantially for parents but not for educators (not shown). At six months, 41 percent of parents and 24 percent of educators in the workshop group reported that they had received *Ready To Learn* materials since their last interview, whereas only 22 percent of parents and 26 percent of educators had done so at the three-month followup.[13] Over 85 percent of parents and educators who received materials read them, and over 80 percent found the materials to be "somewhat" or "very" useful (not shown).[14] Given the discrepancy between facilitators' intent to follow up and its actual execution, coupled with participants' general appreciation of followup when received, this may be a valuable way to continue reinforcement of workshop messages.

Table V.3. Workshop Followup (Workshop Group Only)

	Percentage	
	Parents	Educators
Received Materials at the Workshop[a]	99	99
Looked at/Read Materials Given at Workshop[a]	93	96
Frequency of Use of Workshop Materials with Focus Child/Children in Care:[a]		
Never	4	4
Right after workshop, but not since	23	6
A few times a month	25	41
A few times a week	39	27
Daily	9	23
Received Followup Since Workshop:[b]		
Yes	55	39
No	45	61
Sample Size	**530-577**	**304-326**

Source: Parent and Early Childhood Educator First and Second Follow-up Surveys.
Note: Data were weighted to adjust for survey nonresponse and to equalize the contribution of each station.
[a]From the first follow-up survey.
[b]Aggregated across the two follow-up surveys.

[12] The figures of 55 and 39 percent probably are an overestimation of the actual facilitator followup. Respondents were asked to identify the types of followup they had received; a review of these open-ended responses indicates that a number of people considered the telephone calls and mailings from MPR staff to schedule surveys to be a form of workshop followup.

[13] We asked workshop participants whether they received any *Ready To Learn* materials, including handouts, books, or information about children's programs on PBS.

[14] Unfortunately, we do not know which materials are being used—for example, whether it is the children's books or the View-Read-Do planning sheets.

The final measure of exposure to *Ready To Learn* concepts is participation in subsequent workshops. The data show that participation in subsequent workshops, like follow-up efforts, is also sporadic. Based on workshop observations, 26 (31 percent) of the 85 *Ready To Learn* workshops included in this study were intended to be offered in multiple sessions. We had two sources of data for attendance at subsequent workshops: (1) self-reports of study participants at the first follow-up interview, and (2) attendance data collected by facilitators at the subsequent *Ready To Learn* workshops. Using self-report data from the second follow-up interviews, we examined the reported attendance of workshop group members who were in *Ready To Learn* workshops intended as multiple sessions. We found that 18 percent of parents and 31 percent of educators reported having attended a session subsequent to the study workshop. Across the entire workshop group, regardless of type of workshop, about 9 percent of parents and 8 percent of educators reported having attended a subsequent workshop. Those who reported that they attended a subsequent session reported attending approximately 2 additional sessions on average (ranging from 1 to 10).

In the next chapter, we synthesize the descriptive and impact analysis results and discuss their implications for program improvement.

CHAPTER VI

SUMMARY AND IMPLICATIONS FOR PROGRAM IMPROVEMENT

In this report, we described the characteristics of *Ready To Learn* workshop participants, the characteristics of the workshops themselves, and the three- and six-month impacts of workshop participation on parents, educators, and the children in their care. The analysis was based on a rigorous experimental design that randomly assigned those interested in workshop participation to a treatment or control group. The "treatment" was the opportunity to attend a *Ready To Learn* workshop. Those in the control group did not receive *Ready To Learn* services, but they were free to enroll in any other parenting or educational opportunities available in their community. The impact analysis presents a set of findings with short- and longer-term impacts for a relatively small portion of the adult outcome measures examined and no positive impacts on children's school readiness.

The evidence from this study establishes a link between *Ready To Learn* workshops and adults' self-reported behaviors. The effect sizes of reported impacts, however, are small and these impacts on adult behaviors did not translate into impacts on the children of parents in the study. The main findings are:

- Workshops had significant longer-term impacts on adult use of two Learning Triangle behaviors, co-viewing PBS and Noggin, and on visiting PBS Web sites.

- Workshops did not significantly affect children's television viewing time, adult attitudes about television and PBS, the number of children's books available, and adult-child reading frequency (measured separately from time doing View-Read activities).

- Workshops did not enhance the school readiness of children of study parents.

- Workshop impacts are generally sustained for both parents and educators. There were positive workshop-control differences across several outcome areas of interest. These tended to be significant for parents through six months more so than for educators. Over the short term, workshops had positive impacts for both groups that were concentrated in parents' co-viewing behaviors and

educators' use of Learning Triangle activities. Despite the different pattern of impacts, workshops are about equally effective for parents and educators.

- Workshops are equally effective for those in the four priority target populations compared to those who are not.

- Workshop characteristics, such as quality, duration, conducting specific activities during workshops, and meeting PBS requirements for workshop content, are not related to differential outcomes for adults and children over the longer term. Short-term impacts on implementing Learning Triangle behaviors for those in workshops that provided time for planning a View-Read-Do activity faded by six months.

Although the majority of adult outcomes were not significantly affected by workshop participation over the longer term, there was a pattern of consistency in the PBS co-viewing impacts across the three- and six-month follow-up periods and a general pattern of positive overall impacts in several Learning Triangle behaviors, and in visiting the PBS Web sites. Considering that the workshops were often one-time interventions, only 90 minutes long on average, finding significant impacts on some adult behaviors six months after workshops occurred suggests that this approach to conveying messages about television use with young children is modestly effective. In general, both the workshop group and the control group reported doing the outcome activities less often at six months than they had at three. The significant differences between the two groups at six months are related to the workshop group sustaining their behaviors more than the control group did theirs.

What do these findings mean for program improvement? Our conceptual model hypothesized that workshops would affect adult behaviors, which would in turn affect children's developmental outcomes. Although we were able to find support for workshops affecting adult behavior, the findings from this study do not explain why we did not find effects on children. One possible explanation for the absence of child impacts could be that the adult behaviors that workshops affected were not important for enhancing child outcomes. An alternative explanation for the lack of effects on children could be that the workshop impacts on adult participants were too small in magnitude to translate into measurable impacts on children. Proceeding from the latter explanation and considering the small but persistent impacts of workshops on adult behaviors, one reasonable conclusion is that adult impacts may be enhanced either by increasing the intensity and duration of exposure to *Ready To Learn* workshops or by providing "booster shots" to participants through regular followup. Followup could entail mailings of children's books, program information, planning sheets, or other materials promoting the messages of *Ready To Learn* workshops that might serve to reinforce workshop lessons.

On the other hand, enhancing children's school readiness to the point of significant improvement on standardized tests generally requires a large investment in child-focused or two-generation interventions involving intensive individualized support of children's strengths and identification of and focused work on their needs (Administration for Children and Families 2002; Campbell et al. 2002; Hill et al. 2003; Olds et al. 1994). The research

literature shows that it is possible to achieve modest to large impacts on children's development for populations similar to the target populations that PBS seeks to engage in *Ready To Learn* workshops. However, these impacts have generally been the result of interventions that focus directly on children or on both parents and children and provide multiple services over extended periods of time (from six months to three years).

What do these findings suggest for program improvement? Based on the impact findings, as well as descriptive information, PBS and ED might consider these questions about possible ways to improve *Ready To Learn* outreach and workshops:

- ***How can workshop implementation and followup be enhanced?*** The modest impacts on adult behaviors found three months after workshop participation—and, to a lesser extent, six months after workshop participation—suggest that greater intensity of services through increased followup after workshops, or through additional workshops, may strengthen these findings. Seventy percent of workshop facilitators planned on conducting some type of followup, but only 55 percent of parents and 39 percent of educators reported receiving any followup after 6 months. It is not clear whether greater workshop intensity will lead to greater impacts on the adults and that these impacts will, in turn, translate into impacts on the children in their care. We can only speculate that this relationship between adult and children's behaviors is correct, in which case extending the lessons may also be more likely to produce the desired impacts for children. Increased exposure to workshop messages through longer or multiple workshops and more regular and frequent distribution of follow-up materials may also be useful.

- ***How can workshop quality and content coverage be improved?*** Although most of the workshops were of high quality and over 60 percent covered all of the required content, there is still room to improve workshops in these areas. In addition, allowing workshop participants time to plan a View-Read-Do activity is related to short-term, positive impacts on adults doing the Learning Triangle with children. The findings suggest that PBS may strengthen the program by continuing to work with stations to define workshop content requirements and to support Coordinators' efforts to incorporate these requirements into workshops.

- ***How can stations be encouraged to focus their workshop recruiting efforts on the four target populations?*** Focusing outreach efforts more exclusively on these individuals and working closely with community partners who serve them (for example, in Head Start and Even Start) may increase the proportion of target population group members attending workshops. We note that the impact analysis did not find that workshops for adults in the target populations were more effective. However, focusing recruitment on those with fewer resources is still important, given that one of *Ready To Learn*'s goals is reaching children who are at risk for school failure. Children from both the workshop group and the control group in higher-risk families scored

significantly lower on many of the school readiness measures than did children in lower-risk families.

Considering the entirety of the *Ready To Learn* evaluation, we conclude with a final set of observations. From our process study, we learned that the *Ready To Learn* program has enabled PBS stations to leverage relatively modest *Ready To Learn* grants into sometimes considerable additional resources through fundraising in their communities (Vogel et al. 2002). In addition, workshop participants viewed the workshops and the materials they received as valuable and useful. *Ready To Learn* outreach and workshops therefore (1) transmit messages about Learning Triangle activities, co-viewing, and PBS Web-based resources that result in both short- and longer-term impacts on adult behaviors, (2) leverage additional funding for PBS member stations, and (3) promote goodwill in communities served by *Ready To Learn* stations. The *Ready To Learn Television Service* leads to multiple benefits that are important for the communities PBS stations serve. Thus, as PBS and ED consider various ways of assessing and documenting these benefits, the focus should extend beyond the children to encompass all the constituents who ultimately may benefit from PBS children's television programming coupled with *Ready To Learn* outreach.

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APPENDIX A

PBS *READY TO LEARN TELEVISION SERVICE* OUTREACH DATA COLLECTION AND REPORTING REQUIREMENTS

FIGURE A.1

PBS *READY TO LEARN TELEVISION SERVICE* OUTREACH
DATA COLLECTION AND REPORTING

It is the policy of the PBS *Ready To Learn Television Service* to collect and report accurate and verifiable data regarding its outreach activities. Effective September 1, 2003, this policy applies to all local PBS member stations that collect and report data as a part of the PBS *Ready To Learn Television Service.*

1. All data regarding workshop participants must be collected using the approved workshop participant form.

2. Any modifications to the approved workshop participant form must be reviewed and approved by PBS to ensure that the modifications do not affect the integrity of the data being collected.

3. All data regarding workshop participants must be collected directly from the workshop participants or an agent on their behalf (i.e., a representative of the partnering agency through which the workshop participants were reached).

4. Adequate arrangements must be made to ensure that workshop participants provide complete and accurate data on the workshop participant forms.

5. Adequate arrangements must be made with partnering agencies to ensure that any data collected through them regarding workshop participants are accurate.

6. All data reported in the *Ready To Learn* Management Information System (MIS) regarding workshop participants must be taken directly from the information reported on the workshop participant information forms. No data should be estimated.

7. All data should be reported in the *Ready To Learn* MIS in accordance with the data definitions outlined in the MIS Data Dictionary.

8. All workshop participants must be expected to achieve measurable *Ready To Learn* outcomes.

9. Data should only be reported for workshop participants who currently work directly with children on a regular basis (i.e., individuals who are capable of achieving the desired outcomes of a *Ready To Learn* workshop).

PBS will conduct a random quarterly audit of workshop participant information forms to ensure that data are being reported accurately.

APPENDIX B

CHAPTER II SUPPLEMENTAL TABLES

Table B.1. Characteristics of Stations Participating in the Evaluation Compared to All *Ready To Learn* Stations

Characteristic	Stations in Evaluation (Percentage)	All *Ready To Learn* Stations (Percentage)
Region		
Northeast	5	16
South	55	35
Midwest	25	32
West	15	18
Primary Market		
Urban	50	41
Suburban	15	11
Rural	35	31
Statewide[a]	20	17
Station Size		
Small (50 or fewer employees)	35	48
Medium (51-149 employees)	40	35
Large (150+ employees)	25	17
Sample Size	**20**	**136-139**

Source: *Ready To Learn* Coordinator Second Follow-Up Survey.

Note: For all calculations the total universe of *Ready To Learn* stations was 139, except for region, which used a sample size of 136.

[a] Statewide stations often serve rural markets. Four of the rural stations are also statewide.

Table B.2. Workshops and Sample Sizes, by Station

Station	Number of Parent Workshops	Total Sample Size (Parent)	Number of Educator Workshops	Total Sample Size (Educator)
1	0	0	5	220
2	4	107	2	74
3	4	130	0	0
4	5	66	0	8
5	4	106	0	0
6	2	87	1	54
7	4	108	0	0
8	0	0	3	27
9	0	0	4	63
10	2	90	2	95
11	5	100	0	0
12	1	31	1	31
13	0	0	2	35
14	6	200	3	84
15	0	0	1	43
16	3	97	1	19
17	5	88	0	0
18	2	23	1	77
19	4	113	4	68
20	3	69	1	6
Totals	**54**	**1,415**	**31**	**904**

Source: Random Assignment Data and Parent and Early Childhood Educator Baseline Surveys.

Table B.3. Parent Workshop/Control Group Differences at Baseline

Characteristic	Workshop Mean	Control Mean	Difference	*p*-value
Television Viewing				
Hours Per Weekday Watching TV (Parent)	3.9	4.1	-0.2	0.45
Hours Per Weekend Day Watching TV (Parent)	4.0	4.0	0.0	0.96
Hours Per Weekday Watching TV (Child)	3.0	2.8	0.2	0.26
Hours Per Weekend Day Watching TV (Child)	3.5	3.2	0.3	0.18
Television Attitudes[a]				
Cartoons Are Safe for Kids	2.6	2.6	-0.1	0.37
Don't Keep Track of What Kids Watch	3.5	3.5	0.0	0.80
TV Has No Place in a Child Care Setting	2.9	2.9	0.0	0.73
Upset if TV Used in Child Care	2.9	2.9	0.0	0.40
PBS Is the Same as Other Channels	3.0	3.0	-0.1	0.34
TV Can be an Educational Tool	3.4	3.5	0.0	0.23
Even Cartoon Violence Is Harmful to Kids	3.4	3.4	0.0	0.31
PBS Broadcasts High-Quality Kids' TV	3.6	3.6	0.0	0.59
Comfortable if Provider Used TV to Teach	3.1	3.1	0.0	0.92
PBS Programs Are Safe for Kids	3.4	3.3	0.1	0.14
Reasons for Interest in *Ready To Learn* Workshop[b]				
Learn New Parenting Techniques	67.8	64.6	3.2	0.27
Learn to Use TV as a Teaching Tool	60.6	62.1	-1.6	0.60
Help Children Be Better Prepared for School	76.2	74.3	1.8	0.50
Required to Attend	7.5	6.5	1.0	0.53
Attended for the Money	0.3	0.3	0.0	0.91
Attended Due to Curiosity	0.7	0.8	0.0	0.97
Attended for Other Reasons	4.9	2.9	2.0	0.11
Background Characteristics[c]				
Female	89.6	91.1	-1.6	0.39
Two-Adult Household	70.7	67.6	3.1	0.28
Employed Outside the Home	50.4	50.7	-0.2	0.94
Education				
High school or less	50.1	48.8	1.4	0.66
Some post-secondary	27.7	30.4	-2.7	0.34
Associate's degree	6.5	5.6	1.0	0.52
Bachelor's degree or higher	15.7	15.3	0.4	0.87

TABLE B.3 *(continued)*

Characteristic	Workshop Mean	Control Mean	Difference	*p*-value
Race/Ethnicity				
Hispanic or Latino	26.3	25.9	0.3	0.90
Black or African American	34.1	32.8	1.3	0.66
White or Caucasian	31.0	35.7	-4.7	0.10
Other race/ethnicity	8.7	5.5	3.1*	0.05
Speak English at Home	80.0	78.4	1.7	0.50
Have a child 3 to 5 years old	88.3	87.1	1.2	0.55
Number of children 3 to 5 years old	1.2	1.2	0.0	0.96
Reside in Rural Area	18.3	17.1	1.2	0.62
Receive WIC	47.0	47.9	-0.9	0.79
Receive Food Stamps	39.3	40.4	-1.0	0.74
Receive TANF	18.5	18.0	0.5	0.85
Ever Attended a *Ready To Learn* Workshop	7.7	7.4	0.3	0.84
Sample Size	**658-730**	**608-664**		

Source: Parent Baseline Survey.

Note: Data were weighted to adjust for survey nonresponse and to equalize the contribution of each station.

[a] All television attitudes were rated on a four-point scale from “strongly agree” to “strongly disagree.”

[b] Percentages reported in each category.

[c] Percentages reported in each category except the number of children 3 to 5.

* Estimate significantly different from zero at the 90 confidence level, two-tailed test.
** Estimate significantly different from zero at the 95 confidence level, two-tailed test.
*** Estimate significantly different from zero at the 99 confidence level, two-tailed test.

Table B.4: Early Childhood Educator Workshop/Control Group Differences at Baseline

Characteristic	Workshop Mean	Control Mean	Difference	*p*-value
Type of Early Childhood Program[a]				
Center-Based Program	40.6	37.4	3.2	0.52
Home-Based Program	45.3	44.2	1.1	0.83
Head Start Program	11.5	12.9	-1.5	0.66
Early Head Start Program	0.7	4.6	-3.8**	0.02
Other Program	1.9	0.9	1.0	0.43
Program Licensed	93.2	96.1	-3.0	0.19
Television Attitudes[b]				
Cartoons Are Safe for Kids	3.1	3.1	0.0	0.88
Don't Keep Track of What Kids Watch	3.6	3.5	0.1	0.28
TV Has No Place in a Child Care Setting	3.1	3.1	0.0	0.83
Parents Upset if TV Used in Child Care	3.0	3.0	0.0	0.78
PBS Is the Same as Other Channels	3.2	3.2	-0.1	0.50
TV Can be an Educational Tool	3.4	3.5	-0.1	0.44
Even Cartoon Violence Is Harmful to Kids	3.5	3.4	0.1	0.24
PBS Broadcasts High-Quality Kids' TV	3.5	3.6	0.0	0.62
Comfortable Using TV to Teach	3.0	3.0	0.0	1.00
PBS Programs Are Safe for Kids	3.1	3.1	0.0	0.98
Reasons for Interest in *Ready To Learn* Workshop[a]				
Learn New Child Care Techniques	69.8	77.7	-8.0*	0.08
Learn to Use TV as a Teaching Tool	59.9	61.8	-1.9	0.71
Help Children Be Better Prepared for School	73.3	76.1	-2.8	0.54
Required to Attend	7.3	8.0	-0.7	0.80
Attended for Credit	21.3	35.5	-14.1***	0.00
Other Reason	2.9	3.1	-0.2	0.89
Background Characteristics[c]				
Female	98.4	98.8	-0.3	0.79
Lead Teacher	71.8	64.7	7.1	0.13
Employed in Rural Area	29.2	25.3	3.9	0.41
Years of Preschool Child Care Experience	2.4	13.3	-0.9	0.35
Education				
High school or less	19.6	24.0	-4.4	0.31
Some post-secondary	44.9	34.1	10.8**	0.03
Associate's degree	12.8	18.6	-5.7	0.13
Bachelor's degree or higher	22.7	23.4	-0.7	0.87

TABLE B.4 *(continued)*

Characteristic	Workshop Mean	Control Mean	Difference	*p*-value
Race/Ethnicity				
Hispanic or Latino	7.7	8.1	-0.5	0.87
Black or African American	30.5	36.4	-5.9	0.23
White or Caucasian	59.5	51.7	7.7	0.13
Other race/ethnicity	2.4	3.8	-1.4	0.45
Speaks English	95.6	97.4	-1.8	0.35
Ever Attended a *Ready To Learn* Workshop	16.1	12.8	3.3	0.37
Sample Size	**430-445**	**433-456**		

Source: Early Childhood Educator Baseline Survey.

Note: Data were weighted to adjust for survey nonresponse and to equalize the contribution of each station.

[a] Percentages reported in each category.

[b] All television attitudes were rated on a four-point scale from "strongly agree" to "strongly disagree."

[c] Percentages reported in each category except years of experience.

* Estimate significantly different from zero at the 90 confidence level, two-tailed test.
** Estimate significantly different from zero at the 95 confidence level, two-tailed test.
*** Estimate significantly different from zero at the 99 confidence level, two-tailed test.

Table B.5. Control Variables Used in Regressions (Measured at Baseline)

Characteristic
Male
Female[a]
Race/Ethnicity
Hispanic/Latino
African American
White
Other[a]
Parent
Educator[a]
Speaks English
Does Not Speak English[a]
Resides/Employed in Rural Area
Does Not Reside in Rural Area[a]
Education
High School or Less[a]
Some post secondary
Associate's degree
Bachelor's degree or higher
Attitudes[b]
Cartoons Are Safe for Kids
Don't Keep Track of What Kids Watch
TV Has No Place in a Child Care Setting
Upset if TV Used in Child Care
PBS is the Same as Other Channels
TV Can Be an Educational Tool
Even Cartoon Violence Is Harmful to Children
PBS Broadcasts High-Quality Kids' TV
Comfortable if Provider Used TV to Teach
PBS Programs Are Safe for Kids
Prior Exposure to a *Ready To Learn* Workshop
No Prior Exposure to a *Ready To Learn* Workshop[a]
Child Age[c]
Child Male
Child Female[a,c]

Source: Parent and Early Childhood Educator Baseline Surveys.

[a]Indicates omitted category in regressions.

[b]All television attitudes were rated on a four-point scale from "strongly agree" to "strongly disagree."

[c]Included only for the child outcomes and only if the outcome in question was not already age- or gender-adjusted.

Table B.6. Impacts of *Ready To Learn* Workshops Three Months After Random Assignment: Simple Differences in Means in the Full Sample

Outcome	Workshop Group	Control Group	Difference	*p*-value
Learning Triangle Activities				
Percentage Who (3-5 Times/Month):				
View program and talk about program or characters	88.9	84.2	4.7**	0.04
View program and do related activity	84.8	80.7	4.1	0.11
View program and read related book	65.6	59.5	6.1*	0.06
View, read, and do related activity	55.8	48.6	7.2**	0.03
Television Viewing Behaviors				
Children's Weekday:				
Total TV viewing time (hours)	2.7	2.7	0.1	0.78
Total PBS viewing time (hours)	1.2	1.1	0.1	0.38
Total other child-focused TV viewing time (hours)	1.4	1.4	0.0	0.98
Total adult-focused TV viewing time (hours)	0.2	0.2	-0.1	0.24
Percentage Who (All or Most of the Time):				
Co-view PBS KIDS	65.7	57.7	8.0**	0.01
Co-view Nick Jr.	34.6	30.9	3.6	0.26
Co-view Cartoon Network	22.4	18.3	4.2	0.13
Co-view Disney Channel	30.9	27.5	3.3	0.28
Co-view ABC Family Channel	18.3	15.2	3.1	0.22
Attitudes Toward Television and PBS				
Percentage Disagree That:				
Cartoons are safe for kids	71.7	66.0	5.7*	0.07
Don't keep track of what kids watch	90.0	92.0	-2.1	0.29
TV has no place in a child care setting	83.2	83.2	0.0	0.99
Upset if TV used in child care	77.1	75.6	1.5	0.61
PBS is the same as other channels	86.0	85.3	0.7	0.77
Percentage Agree That:				
TV can be an educational tool	97.5	97.2	0.3	0.82
Even cartoon violence is harmful to kids	91.7	90.2	1.5	0.45
PBS broadcasts high-quality kids' TV	98.6	98.8	-0.2	0.79
Comfortable if used TV to teach	86.5	85.8	0.7	0.77
PBS programs are safe for kids	88.0	87.2	0.8	0.72
Books and Reading Frequency				
Percent with ≥26 children's books	63.4	69.1	-5.7*	0.08
Read once a day or more	80.6	81.0	-0.4	0.87
Minutes reading with child per day	49.1	48.1	1.1	0.67
Sample Size	**975-1,063**	**939-1,015**		

Source: Parent and Early Childhood Educator First Follow-Up Surveys.

Note: Data were weighted to adjust for nonresponse and to equalize the contribution of each station.

*Estimate significantly different from zero at the 90 confidence level, two-tailed test.
**Estimate significantly different from zero at the 95 confidence level, two-tailed test.

Table B.7. Impacts of *Ready To Learn* Workshops Six Months After Random Assignment: Simple Differences in Means in the Full Sample

Outcome	Workshop Group	Control Group	Difference	*p*-value
Learning Triangle Activities				
Percentage Who (3-5 Times/Month):				
View program and talk about program or characters	84.2	82.4	1.9	0.44
View program and do related activity	76.5	76.6	-0.1	0.97
View program and read related book	56.4	50.4	6.0*	0.06
View, read, and do related activity	45.3	38.6	6.6**	0.04
Television Viewing Behaviors				
Children's Weekday:				
Total TV viewing time (hours)	3.6	3.0	0.6**	0.04
Total PBS viewing time (hours)	1.3	1.3	0.0	0.79
Total other child-focused TV viewing time (hours)	2.1	1.5	0.6**	0.03
Total adult-focused TV viewing time (hours)	0.2	0.2	0.0	0.89
Percentage Who (All or Most of the Time):				
Co-view PBS KIDS	60.1	54.8	5.3*	0.09
Co-view Nick Jr.	27.5	27.9	-0.4	0.88
Co-view Cartoon Network	21.4	20.0	1.4	0.59
Co-view Disney Channel	26.6	25.7	0.9	0.74
Co-view ABC Family Channel	11.2	13.3	-2.1	0.32
Co-view HBO Family	8.1	6.2	1.9	0.26
Co-view Noggin	12.2	5.5	6.7***	0.00
Attitudes Toward Television and PBS				
Percentage Disagree That:				
Cartoons are safe for kids	73.5	74.0	-0.5	0.87
Don't keep track of what kids watch	94.2	93.6	0.6	0.71
TV has no place in a child care setting	89.6	90.5	-0.8	0.67
Upset if TV used in child care	101.9	102.5	-0.6	0.28
PBS is the same as other channels	109.9	110.8	-0.8	0.80
Percentage Agree That:				
TV can be an educational tool	98.0	96.9	1.1	0.29
Even cartoon violence is harmful to kids	95.3	95.3	0.0	0.99
PBS broadcasts high-quality kids' TV	99.3	99.1	0.2	0.72
Comfortable if used TV to teach	87.9	88.3	-0.4	0.86
PBS programs are safe for kids	86.2	86.6	-0.4	0.85
Books and Reading Frequency				
Percent with ≥26 children's books	67.9	71.0	-3.2	0.28
Read once a day or more	75.9	74.3	1.6	0.55
Minutes reading with child per day	52.4	51.0	1.5	0.55
Use of PBS Online Resources				
Visit website(s)	42.2	36.0	6.2**	0.05
Use information from websites	29.7	26.6	3.1	0.29
Sample Size	**987-1,020**	**957-990**		

Source: Parent and Early Childhood Educator First Follow-Up Surveys.

Note: Data were weighted to adjust for nonresponse and to equalize the contribution of each station.

*Estimate significantly different from zero at the 90 confidence level, two-tailed test.
**Estimate significantly different from zero at the 95 confidence level, two-tailed test.

Table B.8. Impacts of *Ready To Learn* Workshops Six Months After Random Assignment on Children: Parent Sample

	Workshop Mean	Control Mean	Difference	*p*-value
Language and Emergent Literacy				
Woodcock-Muñoz Picture Vocabulary Standard score	95.6	96.1	-0.5	0.65
Percentage of children with Picture Vocabulary score of 100 or Above	36.6	39.6	-3.0	0.40
Woodcock-Muñoz Letter-Word Identification standard score	105.6	104.9	0.7	0.50
Percentage of Children with Letter-Word Identification score of 100 or above	68.0	64.4	3.6	0.31
Print knowledge score	1.1	1.1	0.0	0.48
Book knowledge score	3.1	3.2	-0.1	0.37
Percentage Whose Parent Reports That Child:				
Recognizes most/all letters of the alphabet[a]	64.8	67.5	-2.7	0.43
Recognizes name in print[a]	95.2	94.4	0.8	0.62
Is able to/pretends to read[a]	70.0	70.3	-0.2	0.95
Writes or draws[a]	76.5	77.0	-0.6	0.86
Writes first name[a]	76.1	77.9	-1.8	0.54
Emergent literacy composite[a,b]	3.7	3.8	-0.1	0.23
Cognition and General Knowledge				
Leiter-R Classification standard score	104.6	105.2	-0.7	0.55
Percentage Who:				
Name 10 colors	68.3	68.5	-0.3	0.94
Count to 10	49.5	51.7	-2.2	0.54
Percentage Whose Parent Reports That Child:				
Identifies 4 Colors[a]	81.8	84.9	-3.1	0.25
Identifies 10 Written Numbers[a]	69.8	72.5	-2.7	0.42
Social and Emotional Development				
Behavior Problems score[a]	25.6	25.8	-0.2	0.37
Adaptive Social Behavior Inventory: Expressive score[a]	49.6	49.0	0.6	0.43
Adaptive Social Behavior Inventory: Compliant score[a]	49.0	49.4	-0.4	0.58
Adaptive Social Behavior Inventory: Disruptive score[a]	49.9	48.5	1.4**	0.04
Approaches Toward Learning				
Leiter-R Attention Sustained standard score	104.8	105.4	-0.6	0.61
Attention and engagement during testing	18.9	19.3	-0.4	0.19
Sample Size	**512-550**	**461-492**		

Source: Parent Second Follow-Up Survey and Child Assessment.

[a]Parent report measures. All other outcomes directly assessed.

[b]The emergent literacy composite is the sum of five items and is scored as in the Family and Child Experiences Survey (FACES): recognizes all or most letters of the alphabet; counts to 20 or more; mostly writes/draws, not scribbles; writes own first name; and identifies red, yellow, blue, and green by name.

*Estimate significantly different from zero at the 90 confidence level, two-tailed test.
**Estimate significantly different from zero at the 95 confidence level, two-tailed test.
***Estimate significantly different from zero at the 99 confidence level, two-tailed test.

APPENDIX C

TECHNICAL NOTES

APPENDIX C

TECHNICAL NOTES

This Appendix contains technical details documenting our analysis of the *Ready To Learn* impact data. First, we describe our methods for determining whether nonresponse bias is a problem in the data obtained from children recruited through educators. Next, we describe the psychometric scaling we conducted to construct our child outcomes, the weights used in the impact models, and the methods for full-sample impacts and for estimating impacts within subgroups of interest.

NONRESPONSE BIAS ANALYSIS

As we noted in Chapter II, assessments of children recruited through educators were difficult to obtain. We obtained direct child assessments for just under one-third of the 904 educators taking part in the study. This response rate was quite low, and low response rates may signal that the data collected is from a group that is not representative of the entire group of educators in the sample.

Because we ended up with a much lower response rate than desirable, we conducted two key checks of the data to determine whether serious non-response bias issues affect the data. Conducting checks of the new parent data is complicated by the fact that we only have baseline data about the *educators* of the parents' children. For example, we were not able to compare the baseline characteristics of parents who completed a followup to the baseline characteristics of parents who did not complete a follow-up survey. Nevertheless, we were able to use information about the educators to assess whether non-response bias seemed to be an issue.

Considering parents recruited through educators, we first assessed whether the responding parents were similar to all the parents who might have responded by comparing the baseline characteristics of *educators who had parents who responded to the follow up* to the baseline characteristics of *educators who had no parents respond to the follow up*. This tells us whether educator characteristics were associated with the likelihood that parents responded (for example, if more highly educated educators are more likely to have parents who

responded to the follow-up survey) and if the sample who responded was representative of the original sample.

The second test we conducted compared the characteristics of the treatment group parents (recruited through educators) who responded to the characteristics of the control group parents (recruited through educators) who responded to assess whether the two groups of parents were comparable. For this analysis, we used information from the "new parent" survey. However, because the new-parent survey was conducted *after* the educators received the intervention, we only used information that is unlikely to be affected by the intervention to assess the comparability of the two groups (for example, education level, number of people in the household, race/ethnic background, whether home is in an urban or a rural area, and receipt of WIC, food stamps, or TANF). This analysis indicates whether the treatment and control groups who responded are comparable.

Results from the first nonresponse analysis described above indicate that the set of educators from whom we have assessed children are different from the educators from whom we do not have assessed children. One-third of the variables examined differed significantly between the two groups, suggesting that nonresponse bias is an issue for the sample of children recruited through educators. For example, relative to an educator without an assessed child, educators with an assessed child were more comfortable using TV to teach children, were more likely to indicate interest in an RTL workshop to help children be better prepared for school, were less likely to indicate interest in an RTL workshop due to being required to attend, were more likely to be lead teachers, were more likely to be employed in a rural area, had more years of experience, were more likely to have an associate's degree, were less likely to be Hispanic, and were more likely to speak English. Therefore, to the extent that educator characteristics are correlated with the characteristics of students in their care, the students we recruited through educators are unlikely to be representative of children from the full set of educators.

The second analysis, which examined treatment/control differences among assessed students, suggests that the two groups are comparable (only 2 of the 36 differences were significant). However, in light of the fact that the nonresponse analysis above showed such a large number of differences between educators depending on whether or not they have an assessed child, we do not present impact estimates based on the students or parents recruited through educators.

SCALING

We constructed each of our child outcomes to adhere to published scoring procedures whenever possible. For many of the assessments, the test publishers provided scoring procedures or programs that we used to construct standard scores for children. In some cases, we used assessments that were either short versions of existing measures or were developed for use in specific populations (such as the FACES measures for Head Start children). In these cases, when possible, we constructed our scores in the same manner as suggested by published accounts, and assessed the reliability of the scores with standard scaling techniques.

We followed these general steps when constructing our outcome measures. We examined the distribution and measures of central tendency of the raw data. For exploratory work, we used respondents with complete data and checked internal consistency reliability with Coefficient alpha. We used a standard of .70 as the minimal level of internal consistency reliability to justify scale construction. If no scales or subscales were defined in prior published work, after calculating alpha, we conducted exploratory factor analysis with Varimax rotation to make decisions about possible subscales. We preferred solutions that (1) had factor loadings of .35 or higher, (2) minimized the number of items that did not load appreciably, (3) did not include items that loaded appreciably on more than one factor, and (4) made psychological sense. The subscales derived also had to have alphas of .70 or better and had to retain their reliability for important subgroups (race/ethnicity in particular).

For scales measured by parent report, we imputed scores if a scale or subscale was missing less than 25 percent of the component items. We imputed by substituting the mean for that individual on the nonmissing items within the scale or subscale. Missingness in standardized assessments such as the Woodcock-Muñoz simply resulted in a lower obtained score. Table C.1 lists all the child outcomes and the basic psychometric information about them.

WEIGHTING

For each wave of data collection (baseline, first and second follow-up), we developed two sets of weights, one containing only a correction for survey non-response, and the other containing both a correction for non-response and a rescaling factor that equalizes station size and treatment status group size. The purpose of non-response adjustment is to make the analyses using the information from those who responded to a survey representative of the total sample. The rescaling factor is created so that each station will contribute equally to the analytical results, rather than allowing stations with larger sample sizes to have more impact. Furthermore, to suit subgroup analyses, two parallel weights were created to estimate (1) overall impacts, and (2) impacts within parent/educator subgroups.[1] We describe the rationale and procedures for calculating these weights in the following sections.

Non-Response Adjustments

Our goal in preparing the non-response adjustments was to compensate for any differences between the original sample of recruited parents and educators and the respondents to either of the follow-up surveys that could have an impact on the survey results. To develop the adjustment method, we considered the information available for both respondents and non-respondents and the observed patterns of non-response. The overall non-response pattern at both time points was quite similar. We used similar methods to calculate weights for both followup points; for brevity, we will describe our methods using the second follow-up data as an example.

[1] The analogous approach is used to create weights for the children associated with parents. We describe only the methods for parent/educator sample here.

Table C.1. Psychometric Characteristics of Child Outcome Measures

	Mean	Control Mean	Minimum	Maximum	Alpha
Woodcock-Muñoz Picture Vocabulary standard score	95.32	15.95	4	179	NA
Percentage of children with Picture Vocabulary score of 100 or above	0.37	0.48	0	1	NA
Woodcock-Muñoz Letter-Word Identification standard score	104.76	14.47	57	195	NA
Percentage of children with Letter-Word Identification score of 100 or above	0.65	0.48	0	1	NA
Print knowledge score	1.09	0.89	0	2	.76
Book knowledge score	3.17	1.52	0	5	.69
Percentage Whose Parent Reports That Child:					
Recognizes most/all letters of the alphabet[a]	0.65	0.48	0	1	NA
Recognizes name in print[a]	0.95	0.23	0	1	NA
Is able to/pretends to read[a]	0.70	0.46	0	1	NA
Writes or draws[a]	0.76	0.43	0	1	NA
Writes first name[a]	0.76	0.42	0	1	NA
Emergent literacy composite[a,b]	3.68	1.52	0	5	.75
Leiter-R Classification standard score	104.80	15.90	54	146	NA
Percentage Who:					
Name 10 colors	0.68	0.47	0	1	NA
Count to 10	0.51	0.50	0	1	NA
Percentage Whose Parent Reports That Child:					
Identifies 4 colors[a]	0.83	0.38	0	1	NA
Identifies 10 written numbers[a]	0.71	0.45	0	1	NA
Behavior Problems score[a,c]	25.70	3.01	11	30	.74
Adaptive Social Behavior Inventory: Expressive score [a]	49.10	9.88	1	63	.79
Adaptive Social Behavior Inventory: Compliant score [a]	49.14	10.22	1	66	.84
Adaptive Social Behavior Inventory: Disruptive score [a,c]	49.29	9.60	31	73	.70
Leiter-R Attention Sustained standard score	105.03	15.24	60	146	NA
Attention and engagement during testing	19.21	4.06	1	24	.81
Sample Size	**512-550**	**461-492**			

Source: Parent Second Follow-Up Survey and Child Assessment.

[a]Parent report measures. All other outcomes directly assessed.

[b]The emergent literacy composite is the sum of five items and is scored as in the Family and Child Experiences Survey (FACES): recognizes all or most letters of the alphabet; counts to 20 or more; mostly writes/draws, not scribbles; writes own first name; and identifies red, yellow, blue, and green by name.

[c]For this measure, higher scores indicate less-desirable behavior. Therefore, lower scores, or impacts with negative signs for the workshop group, show a positive impact of the program because they represent lower levels of undesirable behavior.

Response rates for both follow up surveys were similar and were high. Among 2,254 sample members, 89.1 percent completed the second follow-up interview. Nonresponse patterns on design and demographic characteristics, such as treatment status, parent/educator status, race, gender and education level, were analogous to those in the first follow up. Overall, the biggest difference in these items is between educators and parents, with educators responding at a lower rate (86.8 percent) compared to their parent counterparts (90.6 percent). Therefore, we use a weighting-class approach for the adjustment, as we did in the first followup.

The weighting-class approach divides the combined sample of respondents and non-respondents into a set of cells within which the response patterns are fairly homogeneous. This is accomplished, to the extent possible, by defining the cells on the available characteristics that had differential observed cooperation rates. Once the cells are formed using these criteria, the associated adjustment factors weight the completed interviews in each cell in proportion to the cell's contribution to the full sample or the associated population (rather than in proportion to the number of completed interviews) to reduce the potential for bias in the survey estimates.[2]

To form the weighting cells, we first considered the sampling design variables: station, treatment status, and parent/educator status. For educators, some stations had few sample members. To avoid bias from small weighting cells, these stations were collapsed. In addition, race and education level were considered in forming the weighting cells. In each weighting cell c, the adjustment factor NR_FU2_c is defined as:

$$NR\_FU2_c = \frac{\#\{\text{All Sample in cell } c\}}{\#\{\text{Respondents in cell } c\}}$$

Here #{All sample in cell c} and #{Respondents in cell c} are the number of all sample members and the number of respondents in the cell, respectively.

Since parent/educator status is one factor in forming the cells, and there is no collapsing on it, the non-response adjustment factors are the same for the overall correction and correction by parent and educator separately.

Scaling Components

The scaling factors are calculated to equalize the contributions of stations and treatment groups to the average impact (that is, stations with smaller sample sizes would contribute as much to the average as stations with larger sample sizes). The scaling variables weight the sample sizes in each station and treatment combination (or station, treatment, and parent

[2] As an alternative to the weighting-class technique, we considered the use of a propensity score adjustment process. Since our analysis of the cooperation rates showed differential (interacting) response patterns by station, and the number of influential characteristics were small, we opted for the weighting-class methodology, as we expected it to provide the same, if not better, bias reduction capabilities.

versus educator status combination) to a common count corresponding to the rounded average station sample size for these subgroups.

We computed these weight variables as a ratio adjustment using the formula given in the following expression:

$$RESCALE\_TRT_{ST,TRT} = \frac{SPE_{TRT}}{\sum_{ST,TRT} NR\_FU2}$$

$$RESCALE\_TRTPE_{ST,TRT,PE} = \frac{SPE_{TRT,PE}}{\sum_{ST,TRT,PE} NR\_FU2}$$

Here, we index each station by ST, the treatment status by TRT (TRT=1 for workshop and TRT=0 for controls) and the parent/educator classification by PE (PE=1 for parents, PE=0 for educators). "SPE" reflects the common sample size we selected to equalize the impact of the individual station findings on the pooled analysis.

Before we chose "SPE" for the second follow up, we reviewed our weighting methods for the first followup. In the first followup, the original, recruited sample contained 2,319 parents and educators, which averaged across the 20 stations to include 59 treatment cases and 57 control cases.[3] In selecting the SPE value, we wanted to have the weighted count across the stations sum to a value that was close to the original sample size of 2,319 to support the use of standard variance estimation procedures. Furthermore, so the precision levels obtained from the two methods of analysis would be comparable, we wanted the two weights to sum to the same total. We selected 2,400 as the total weighted sample size because it was a common multiple of 40 and 60, the respective number of station by treatment, and station by treatment and parent/educator, combinations.

In the second followup, there were 2,254 parents and educators, which is close to, though slightly lower than, the sample size in the first followup. The number of stations by treatment, and stations by treatment and parent/educator combinations, remains unchanged. To be consistent with the first follow up, where the total weighted sample size is 2,400, we again kept 60 and 40 as the respective SPE_{TRT} and $SPE_{TRT,PE}$ values.

In our impact analysis, we used the appropriate non-response adjustment weights (associated with either first or second follow-up). We used the non-response and station rescaling weights for other descriptive analyses (such as t-tests and reporting means that were not regression-adjusted).

[3] Total station sample sizes range from 27 to 284, averaging to 115. Among the workshop group, station sample sizes range from 16 to 150, averaging to 59, and among controls from 11 to 134, averaging to 57.

Final Weights

With each of these components ready, we created the weights desired for our analyses:

A: For overall impact analyses:

A1: Non-response adjustments only: NR_FU2_c

A2: Rescaled non-response adjusted weights: $NR\_FU2_c \times RESCALE\_TRT_{ST,TRT}$

B: For parent and educator subgroup analyses:

B1: Non-response adjustments only: NR_FU2_c

B2: Rescaled non-response adjusted weights: $NR\_FU2_c \times RESCALE\_TRTPE_{ST,TRT,PE}$

Precision of Survey Estimates

Because we did not restrict sample recruitment, occasionally parents of the same child or educators in the same classroom enrolled in the study. When these groupings occurred, we randomly assigned group members as a unit. This was a relatively infrequent occurrence; 89 percent of cases in our sample were assigned singly and 11 percent were assigned as groups (mainly groups of two individuals). These groupings occurred in 58 percent of the workshops, approximately equally among those for parents and those for educators. Individuals within these kinds of units are likely to be more similar to one another than individuals across units. Therefore, without correction, "clustered" assignments of sample members can understate the true variance of an impact estimate, leading its statistical significance to be overstated.

To properly account for the effects of clustering, we used the SUDAAN software package which is able to calculate standard errors in designs with clustering. We used SUDAAN to estimate site-level impacts and averaged them to estimate the overall impacts.

REGRESSION MODEL

Program impacts were estimated using a simple linear model:

(1)

$$Y = \alpha + X\mathrm{B}_1 + S\mathrm{B}_2 + \sum_{j=1}^{20} \delta_j (s_j * t) + \varepsilon$$

where:

- Y is a given outcome measure

- X is a vector of explanatory variables, measuring demographic characteristics, attitudes, and other information as they existed prior to random assignment
- S is a vector of 19 station-level indicator variables equal to 1 if the sample member is from station j
- s_j is an indicator variable representing an individual station
- t is an indicator variable equal to 1 if the sample member is in the workshop group
- δ_j is the regression-adjusted impact estimate for station j
- $B1$ and $B2$ are sets of parameters to be estimated
- ε is a random disturbance (error term)

As noted above, we used a nonresponse adjustment weight (not shown in the model), both for overall impact estimates and for subgroups, with a specific parent/educator nonresponse weight for impacts computed within that subgroup.

ESTIMATING SUBGROUP IMPACTS

The subgroup analysis uses a regression model similar to equation (1). The only difference is that it was estimated twice—once restricted to one of the subgroups and a second time restricted to the other subgroup (for example, parents, and then for educators). A chi-square test was completed to determine whether the impact estimates differed between the groups.

CONTROL GROUP MEANS

As the tables in chapters IV and V show, the control group, particularly control group parents, have generally lower mean levels on the adult outcomes at six months compared to three months. We expected the control group to stay about the same over time and list several possible reasons why the control group declined: (1) high motivation to receive training related to improving children's school readiness—many control group members went to other types of training, which may have briefly increased their focus on activities with children that were similar to those described in *Ready To Learn* workshops (2) seasonality effects—outcomes may have been affected by the season of the year in which the follow-up surveys were conducted, (3) a sensitizing effect of the "pretest"— the baseline survey may have alerted or sensitized study participants to the aims of the study and inflated the reports of study members' behaviors (Campbell and Stanley 1966), and (4) "spillover" effects—control group members might know people assigned to the workshop group and learn from them about some of the ideas taught in workshops.

We believe the high level of motivation among control group members to focus on activities related to helping prepare children for school and their subsequent success in attending training activities is the most plausible explanation for the high proportion of controls who report doing the outcome activities and the observed decline from three to six months. However, we cannot test this explanation. We found little evidence for either seasonality or an effect of the pretest, but cannot rule out the possibility of spillover effects. We tested seasonality through regressions with dummy indicators for the season in which each follow-up survey was conducted (fall, winter, spring, or summer). None of the indicator variables was significant. To assess whether there appeared to be an effect of the baseline survey, we examined baseline and three-month attitude responses for the control group. We found no consistent increase in control group attitudes between baseline and three months, although attitudes all became more positive by six months. The workshop group had similar response patterns. We were unable to determine whether spillover had occurred, because we have no way of knowing whether a control group member knew anyone in the workshop group (and spoke to that person about *Ready To Learn* concepts) or not.

APPENDIX D

CHAPTER III SUPPLEMENTAL TABLES

Table D.1. Characteristics of *Ready To Learn* Workshops

Workshop Characteristic	Percentage All Workshops	Percentage Parent Workshops	Percentage Educator Workshops
Type of Workshop			
Basic *Ready To Learn* workshop	69	73	61
Thematic workshop	23	21	26
Program-related workshop	8	6	13
Location of Workshop			
Head Start	20	28	6
Preschool	6	9	0
Elementary school	22	31	6
Community center	26	17	42
Station	1	0	3
Library	6	6	6
Other	19	9	35
Workshop Part of Multiple Sessions			
Yes	31	41	16
No	68	59	84
Average Length of Time for Workshop (minutes)	95 Ranging from 32 to 350	80 Ranging from 32 to 165	121 Ranging from 45 to 350
Total Time			
Less than 1 hour	23	29	14
Between 1 and 2 hours	60	62	59
Greater than 2 hours	16	10	28
Workshop Format			
Lecture	23	23	20
Interactive	19	23	17
Mix	58	54	63

TABLE D.1 *(continued)*

	Percentage All Workshops	Percentage Parent Workshops	Percentage Educator Workshops
Average Number of Participants/Workshop	15 Ranging from 4 to 56	15 Ranging from 4 to 56	16 Ranging from 5 to 55
Type of Facilitator			
Ready To Learn Coordinator	75	80	68
Ready To Learn staff	14	8	26
Partner	7	11	0
Other	4	2	13
Experience—*Ready To Learn* Coordinator			
Conducted fewer than 5 workshops	3	3	5
Conducted 5 to 15 workshops	97	98	95
Experience—*Ready To Learn* Staff			
Conducted fewer than 5 workshops	0	0	10
Conducted 5 to 15 workshops	100	100	90
Experience—Partner			
Conducted fewer than 5 workshops	77	77	0
Conducted 5 to 15 workshops	23	23	0
Experience—Other			
Conducted fewer than 5 workshops	44	50	33
Conducted 5 to 15 workshops	56	50	67
Number of Facilitators			
One	74	69	84
More than one	26	31	16
Participant Followup Planned			
Yes	72	81	55
No	28	19	45

TABLE D.1 *(continued)*

	Percentage All Workshops	Percentage Parent Workshops	Percentage Educator Workshops
Type of Followup Planned			
Telephone	23	23	24
Written	59	57	65
In Person	44	48	35
Other	5	5	6
Average Time to When Facilitators First Plan to Follow Up with Participants (Days)	52 Ranging from 0 to 365	56 Ranging from 7 to 365	43 Ranging from 7 to 194
Average Number of Times Facilitators Plan to Follow Up (Per Year)	3 Ranging from 1 to 10	3 Ranging from 1 to 10	2 Ranging from 1 to 6
Language of Workshop			
English	80	70	97
Spanish	6	7	3
Both	14	22	0
Participant Did Not Understand Language			
Difficulty understanding	19	29	3
No difficulty understanding	81	71	97
Used translator	94 (out of 16)	100 (out of 15)	0
Used translated materials	87 (out of 16)	93 (out of 15)	0
Exposure to View-Read-Do			
Introduced	99	100	97
Demonstrated	95	96	94
Gave examples	95	96	94
Participants planned an activity	62	60	65
Time to practice	65	62	71
5 Minutes or less to practice	54	57	48
Greater than 5 minutes to practice	46	43	52
Participants came up with ideas	84	93	69
Recommended frequency of use	48	51	43

TABLE D.1 *(continued)*

	Percentage All Workshops	Percentage Parent Workshops	Percentage Educator Workshops
Recommended Frequency of VRD Use (of Those Given a Recommendation)			
Daily	54	44	80
Weekly	46	56	20
Monthly	0	0	0
Other Workshop Content			
Showed a clip of PBS program	100	100	100
Demonstrated reading a book	74	80	63
Demonstrated activity related to video and book	92	98	80
Used an “icebreaker”	79	74	87
Discussed media literacy	94	93	97
Discussed adult/child co-viewing	94	96	90
Discussed using TV to initiate conversation	94	94	93
Discussed the importance of reading	89	85	97
Discussed improving social skills	55	50	65
Discussed problem solving	56	55	58
Promoted numeracy skills	53	59	42
Inclusion of special needs	16	13	23
Provided local station information	71	76	61
Discussed program-specific information	94	91	100
Discussed how to access PBS	89	91	87
Materials Distributed at Workshop			
VRD planning sheets	69	66	74
Program guides	80	76	87
Producer-created materials	86	81	93
Children’s books	94	100	84
Children’s activity materials	28	31	23
Other	57	59	53
Workshop Quality			
Welcoming atmosphere			
Poor	0	0	0
Fair	9	9	10
Good	34	33	35
Very good	38	37	39
Excellent	19	20	16

TABLE D.1 *(continued)*

	Percentage All Workshops	Percentage Parent Workshops	Percentage Educator Workshops
Facilitator's communication			
Poor	0	0	0
Fair	5	6	3
Good	22	28	13
Very good	47	46	48
Excellent	26	20	35
Participant's enthusiasm			
Poor	0	0	0
Fair	9	6	16
Good	44	50	32
Very good	29	31	26
Excellent	18	13	26
Facilitator's knowledge			
Poor	0	0	0
Fair	4	4	3
Good	21	26	13
Very good	39	34	48
Excellent	36	36	35
Organization			
Poor	0	0	0
Fair	6	6	6
Good	33	38	26
Very good	45	43	48
Excellent	15	13	19
Ability to provide child development information			
Poor	4	4	3
Fair	12	10	16
Good	31	40	16
Very good	37	33	45
Excellent	16	13	19
Appropriate content			
Poor	0	0	0
Fair	0	0	0
Good	28	35	16
Very good	51	44	61
Excellent	21	20	23

TABLE D.1 *(continued)*

	Percentage All Workshops	Percentage Parent Workshops	Percentage Educator Workshops
Overall quality			
Poor	0	0	0
Fair	4	4	3
Good	35	40	27
Very good	45	44	47
Excellent	16	12	23
Sample Size	**85**	**54**	**31**

Source: Workshop Observation Forms.

Table D.2. Background Characteristics of the Early Childhood Educators

Item	Educators (Percentage)
Demographic Characteristics	
Female	98
Race	
White	56
African American	34
Hispanic	8
Other	3
Languages Spoken	
English	96
Language in addition to English	5
Geographic Area in Which Educator Works	
Urban	48
Suburban	25
Rural	27
Education and Employment	
Education	
High school/GED or less	22
Some postsecondary but no degree	39
Associate's degree	16
BA or higher	23
Taken College Courses in Each Childhood Development	71
Job Title	
Family child care provider	41
Lead teacher	28
Director	14
Assistant teacher	16
Something else	1
Type of Child Care Program	
Center-based	39
Home-based (family child care)	45
Head Start	13
Early Head Start	3
Something else	1
Years of Experience	
$\leq$ 2	10
3 to 6	20
7 to 14	31
$\geq$ 15	39

TABLE D.2 *(continued)*

Item	Educators (Percentage)
Ready To Learn	
Previous Program Exposure	11
Time of Previous Program Exposure (Among 14 percent)	
Within last 3 months	18
Within last year but not last 3 months	35
More than a year ago	47
Reasons to Attend Workshop	
Learn child care techniques	74
Help children be better prepared for school	75
Learn about ways to use TV	61
Credit	28

	Strongly Disagree	Disagree	Agree/ Strongly Agree
Views Concerning Television			
Cartoons are safe for kids	35	48	17
Don't keep track of what kids watch	70	18	12
TV has no place in a child care setting	22	65	13
Parents upset if TV used in child care	23	59	18
PBS is the same as other channels	38	50	12

	Disagree/ Strongly Disagree	Agree	Strongly Agree
TV can be an educational tool	4	46	50
Even cartoon violence is harmful to kids	9	33	58
PBS broadcasts high-quality kids' TV	2	40	58
Comfortable using TV to teach	18	58	23
PBS programs are safe for kids	17	56	28
Sample Size	**790-903**		

Source: Early Childhood Educator Baseline Survey.

Note: Data were weighted to adjust for survey nonresponse and to equalize the contribution of each station.

Table D.3. Background Characteristics of Parents

Item	Parents (Percentage)
Demographic Characteristics	
Female	90
Race	
White	33
African American	33
Hispanic	21
Other	13
Language Spoken at Home	
English	79
Geographic Area	
Urban	64
Suburban	18
Rural	18
Marital Status	
Married	55
Divorced, separated, or widowed	15
Never married	27
Have Children 3 to 5 Years Old	88
Focus Child Has Special Needs[a]	15
Education and Employment	
Education	
Less than high school diploma or GED	28
High school diploma or GED	22
Some college/voc. or tech. school but no degree	29
AA, BA, or higher	22
Employment Status	
Employed full-time	38
Employed part-time (less than 30 hours/week)	12
Homemaker	30
Other[b]	20
Annual Income	
$20,000 or less	54
$20,000 to $40,000	27
More than $40,000	19

TABLE D.3 *(continued)*

Item	Parents (Percentage)
Receives Supplemental Income Support[c]	59
Ready To Learn	
Previous Program Exposure	6
Reasons to Attend Workshop	
Help my children be better prepared for school	75
Learn new parenting techniques	66
Learn to use TV as a teaching tool	62
Required to attend	7

	Strongly Disagree	Disagree	Agree/Strongly Agree
Views Concerning Television			
Cartoons are safe for kids	19	40	42
Don't keep track of what kids watch	66	24	10
TV has no place in a child care setting	18	62	20
Upset if TV used in child care	15	62	23
PBS is the same as other channels	33	44	24

	Disagree/ Strongly Disagree	Agree	Strongly Agree
TV can be an educational tool	4	44	52
Even cartoon violence is harmful to kids	9	39	52
PBS broadcasts high-quality kids' TV	2	36	62
Comfortable if provider used TV to teach	18	54	28
PBS programs are safe for kids	10	46	44
Sample Size	**1,173-1,400**		

Source: Parent Baseline Survey.

Note: Data were weighted to adjust for survey nonresponse and to equalize the contribution of each station.

[a]This variable comes from the first follow-up survey, administered three months after the baseline survey.

[b]The other category includes full-time student; unemployed (not looking for work); unemployed (looking for work); and disabled.

[c]This includes anyone who indicated they received any of the following: TANF, WIC, or Food Stamps.

APPENDIX E

CHAPTER IV SUPPLEMENTAL TABLE

Table E.1. Impacts of *Ready To Learn* Workshops Three and Six Months After Random Assignment

	3-Month Estimated Impact	6-Month Estimated Impact
Learning Triangle Activities		
Percentage Who (3-5 Times/ Month):		
View program and talk about program or characters	2.8*	1.0
View program and do related activity	1.0	0.6
View program and read related book	3.7	4.5*
View, read, and do related activity	3.5	5.4**
Television Viewing and Co-Viewing Behaviors		
Children's Weekday:		
Total TV viewing time (hours)	0.0	0.1
Total PBS viewing time (hours)	0.1	0.0
Total other child-focused TV viewing time (hours)	–0.0	0.1
Total adult-focused TV viewing time (hours)	–0.1**	–0.0
Percentage Who (All or Most of the Time):		
Co-view PBS KIDS	6.5***	4.2*
Co-view Nick Jr.	2.3	–1.5
Co-view Cartoon Network	2.5	–0.9
Co-view Disney Channel	3.8*	–0.7
Co-view ABC Family Channel	0.5	–2.0
Attitudes Toward Television and PBS		
Percentage Who Disagree That:		
Cartoons are safe for kids	3.1	0.8
Don't keep track of what kids watch	–2.5*	0.6
TV has no place in a child care setting	–1.6	–1.4
Upset if TV used in child care	0.6	–1.0
PBS is the same as other channels	1.6	2.2
Percentage Who Agree That:		
TV can be an educational tool	0.3	0.8
Even cartoon violence is harmful to kids	0.1	0.6
PBS broadcasts high-quality kids' TV	–0.6	0.4
Comfortable if used TV to teach	–0.5	–1.5
PBS programs are safe for kids	0.6	–1.6
Books and Reading Frequency		
Percentage with ≥26 children's books	–2.7	–0.3
Percentage who read once a day or more	–2.0	2.9
Minutes reading with child per day	–0.6	0.9
Use of PBS Online Resources		
Visit website(s)	NA	4.9*
Use information from websites	NA	2.4
Sample Size	**808-1,063**	**808-1,020**

Source: Parent and Early Childhood Educator First Follow-Up Surveys.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

APPENDIX F

CHAPTER V SUPPLEMENTAL TABLES

Table F.1. Impacts of *Ready To Learn* Workshops Six Months After Random Assignment: Parent Education Subgroups

	Less than High School Diploma or GED			High School Diploma, GED, or more			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Learning Triangle Activities							
Percentage Who (3-5 Times/ Month):							
View program and talk about program or characters	93.6	93.4	0.3	92.2	92.8	-0.7	
View program and do related activity	83.7	82.9	0.7	80.6	82.1	-1.5	
View program and read related book	65.6	54.1	11.4**	56.3	54.2	2.1	
View, read, and do related activity	57.1	37.8	19.4***	39.2	37.6	1.6	***
Television Viewing and Co-Viewing Behaviors							
Children's Weekday:							
Total TV viewing time (hours)	5.1	5.0	0.1	4.3	4.3	0.0	
Total PBS viewing time (hours)	2.0	1.9	0.2	1.7	1.7	0.0	
Total adult-focused TV viewing time (hours)	0.5	0.6	-0.1	0.4	0.4	0.0	
Percentage Who (All or Most of the Time):							
Co-view PBS KIDS	54.9	47.4	7.5	54.2	44.9	9.3***	
Co-view Nick Jr.	23.8	20.4	3.4	30.9	29.3	1.6	
Co-view Cartoon Network	27.8	26.5	1.3	28.2	24.8	3.4	
Co-view Disney Channel	22.1	29.5	-7.4	31.9	28.4	3.5	*
Co-view ABC Family Channel	11.8	10.0	1.8	13.7	18.7	-5.0*	
Co-view HBO Family	8.5	7.5	1.0	7.4	7.5	-0.1	
Co-view Noggin	6.8	7.9	-1.1	13.0	8.4	4.6**	
Attitudes Toward Television and PBS							
Percentage Who Disagree That:							
Cartoons are safe for kids	41.6	37.7	3.9	74.4	69.1	5.3**	
Don't keep track of what kids watch	89.1	85.0	4.0	95.0	92.6	2.5	
TV has no place in a child care setting	75.5	80.0	-4.5	85.0	90.3	-5.3**	
Upset if TV used in child care	64.6	76.3	-11.7**	84.4	80.6	3.8	***
PBS is the same as other channels	78.2	71.3	6.9	91.0	91.3	-0.4	
Percentage Who Agree That:							
TV can be an educational tool	95.1	92.4	2.7	98.1	98.0	0.1	
Even cartoon violence is harmful to kids	93.7	90.4	3.2	96.1	95.0	1.1	
PBS broadcasts high-quality kids' TV	99.3	99.1	0.2	99.9	99.9	0.0	
Comfortable if used TV to teach	87.3	85.3	2.0	88.1	88.8	-0.8	
PBS programs are safe for kids	96.3	95.3	1.0	87.7	87.8	-0.1	
Books and Reading Frequency							
Percentage with ≥26 children's books	34.1	32.4	1.7	68.5	67.1	1.4	
Percentage who read once a day or more	56.3	44.6	11.7**	60.5	55.5	5.0	
Minutes reading with child per day	49.3	46.3	3.0	46.2	46.9	-0.7	
Visited library in past month	47.0	42.0	5.1	53.0	49.9	3.1	
Use of PBS Online Resources							
Visit website(s)	13.8	12.6	1.2	44.4	41.4	2.9	
Use information from websites	8.9	4.0	5.0*	32.6	29.9	2.8	
Sample Size	**127-166**	**103-139**		**425-465**	**399-423**		

Source: Parent Second Follow-Up Surveys.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.2. Impacts of *Ready To Learn* Workshops Three Months After Random Assignment: Parent Education Subgroups

	Less than High School Diploma or GED			High School Diploma, GED, or more			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Learning Triangle Activities							
Percentage Who (3-5 Times/ Month):							
View program and talk about program or characters	96.9	93.6	3.3	98.4	96.9	1.5	
View program and do related activity	93.7	90.0	3.6	89.8	90.5	-0.7	
View program and read related book	74.7	70.4	4.3	68.6	68.3	0.3	
View, read, and do related activity	60.1	55.4	4.7	54.8	55.3	-0.5	
Television Viewing and Co-Viewing Behaviors							
Children's Weekday:							
Total TV viewing time (hours)	5.0	5.1	-0.1	4.0	4.2	-0.2	
Total PBS viewing time (hours)	1.8	1.8	-0.1	1.7	1.6	0.0	
Total adult-focused TV viewing time (hours)	0.4	0.6	-0.2	0.3	0.4	-0.1	
Percentage Who (All or Most of the Time):							
Co-view PBS KIDS	53.7	57.4	-3.8	59.1	51.5	7.6**	*
Co-view Nick Jr.	28.8	32.4	-3.6	38.8	32.8	6.0*	
Co-view Cartoon Network	29.9	35.1	-5.2	29.7	26.0	3.7	
Co-view Disney Channel	24.5	30.0	-5.5	35.4	29.5	5.8*	*
Co-view ABC Family Channel	18.4	22.7	-4.4	21.0	21.1	-0.1	
Attitudes Toward Television and PBS							
Percentage Who Disagree That:							
Cartoons are safe for kids	37.7	27.9	9.8**	67.7	62.0	5.7**	
Don't keep track of what kids watch	73.9	69.5	4.4	89.1	92.1	-3.0	
TV has no place in a child care setting	54.8	57.8	-3.0	80.1	83.2	-3.2	
Upset if TV used in child care	51.8	62.9	-11.1**	74.0	74.2	-0.2	*
PBS is the same as other channels	61.5	50.3	11.3**	85.8	88.8	-3.0	***
Percentage Who Agree That:							
TV can be an educational tool	92.7	90.4	2.3	97.8	96.9	0.9	
Even cartoon violence is harmful to kids	77.2	78.2	-1.1	91.4	90.1	1.3	
PBS broadcasts high-quality kids' TV	98.0	96.4	1.6	98.6	99.6	-1.0	
Comfortable if used TV to teach	78.9	82.5	-3.6	87.4	84.7	2.7	
PBS programs are safe for kids	95.3	92.3	3.0	89.5	87.2	2.4	
Books and Reading Frequency							
Percentage with ≥26 children's books	38.0	29.8	8.2	64.8	68.1	-3.3	*
Percentage who read once a day or more	57.2	67.1	-9.9*	70.7	66.7	4.0	**
Minutes reading with child per day	53.7	56.2	-2.5	50.8	48.5	2.3	
Visited library in past month	59.3	56.2	3.1	57.3	55.7	1.6	
Use of PBS Online Resources							
Visit website(s)	17.9	11.0	7.0*	36.1	35.7	0.3	
Use information from websites	15.6	6.9	8.7**	25.9	27.2	-1.3	**
Sample Size	**137-152**	**123-140**		**444-460**	**394-411**		

Source: Parent First Follow-Up Surveys.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.3. Impacts of *Ready To Learn* Workshops Six Months After Random Assignment on Children: Parent Education Subgroups

	Less than High School Diploma or GED			High School Diploma, GED, or more			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Language and Emergent Literacy							
Woodcock-Muñoz Picture Vocabulary standard score	84.5	85.1	-0.6	100.7	99.7	1.0	*
Percentage of children with Picture Vocabulary score of 100 or above	5.1	10.9	-5.8	49.7	46.7	3.0	**
Woodcock-Muñoz Letter-Word Identification standard score	99.9	97.9	2.1	108.5	108.3	0.1	
Percentage of children with Letter-Word Identification score of 100 or above	43.4	41.9	1.5	74.7	73.2	1.5	
Print knowledge score	1.2	1.2	0.0	1.1	1.1	0.0	
Book knowledge score	3.1	3.2	-0.1	3.3	3.4	-0.1	
Percentage Whose Parent Reports That Child:							
Recognizes most/all letters of the alphabet[a]	46.9	54.8	-7.9	70.9	67.4	3.5	*
Recognizes name in print[a]	93.0	91.7	1.3	96.8	94.3	2.5	
Is able to/pretends to read[a]	67.9	66.3	1.6	73.2	69.3	3.9	
Writes or draws[a]	78.0	70.9	7.1	77.4	76.1	1.3	
Writes first name[a]	77.3	76.3	1.0	78.4	76.5	1.9	
Emergent literacy composite[a,b]	3.3	3.3	0.0	3.8	3.8	0.0	
Cognition and General Knowledge							
Leiter-R Classification standard score	103.7	100.0	3.7*	105.1	106.5	-1.4	**
Percentage Who:							
Name 10 colors	59.1	54.3	4.8	71.9	70.7	1.1	
Count to 10	45.1	46.4	-1.3	53.3	50.6	2.7	
Percentage Whose Parent Reports That Child:							
Identifies 4 colors[a]	76.8	78.1	-1.3	83.5	86.3	-2.8	
Identifies 10 written numbers[a]	62.7	61.6	1.1	73.3	74.6	-1.3	
Social and Emotional Development							
Behavior Problems score[a,c]	24.9	24.1	0.9**	25.9	26.0	-0.1	**
Adaptive Social Behavior Inventory: Expressive score[a]	48.7	46.7	2.0	49.8	49.6	0.2	
Adaptive Social Behavior Inventory: Compliant score[a]	49.7	48.2	1.4	49.3	49.3	0.0	
Adaptive Social Behavior Inventory: Disruptive score[a,c]	50.3	53.5	-3.2**	49.3	47.9	1.4**	***
Approaches Toward Learning							
Leiter-R Attention Sustained standard score	104.7	102.2	2.6	105.6	106.0	-0.4	
Attention and engagement during testing	19.0	18.4	0.6	19.3	19.6	-0.3	
Sample Size	**82-116**	**74-105**		**347-391**	**315-349**		

Source: Parent Second Follow-Up Survey and Child Assessment.

[a]Parent report measures. All other outcomes directly assessed.

[b]The emergent literacy composite is the sum of five items and is scored as in the Family and Child Experiences Survey (FACES): recognizes all or most letters of the alphabet; counts to 20 or more; mostly writes/draws, not scribbles; writes own first name; and identifies red, yellow, blue, and green by name.

[c]For this measure, higher scores indicate less-desirable behavior. Therefore, lower scores, or impacts with negative signs for the workshop group, show a positive impact of the program because they represent lower levels of undesirable behavior.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.4. Impacts of *Ready To Learn* Workshops Six Months After Random Assignment: Live in Rural Area Subgroups

	Rural Area			Non-Rural Area			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Learning Triangle Activities							
Percentage Who (3-5 Times/ Month):							
View program and talk about program or characters	75.2	84.6	-9.4***	87.0	84.0	3.0	***
View program and do related activity	69.2	75.6	-6.4	80.1	76.7	3.4	**
View program and read related book	50.6	50.8	-0.2	57.6	49.9	7.7***	
View, read, and do related activity	36.7	38.8	-2.1	46.5	37.1	9.4***	**
Television Viewing and Co-Viewing Behaviors							
Children's Weekday:							
Total TV viewing time (hours)	3.4	3.4	0.0	3.5	3.3	0.2	
Total PBS viewing time (hours)	1.4	1.4	-0.1	1.4	1.3	0.1	
Total adult-focused TV viewing time (hours)	0.2	0.3	-0.1	0.2	0.3	0.0	
Percentage Who (All or Most of the Time):							
Co-view PBS KIDS	53.4	41.4	12.0**	59.5	55.3	4.2	
Co-view Nick Jr.	27.3	26.5	0.9	28.4	28.3	0.1	
Co-view Cartoon Network	20.4	15.9	4.5	20.7	22.6	-1.9	
Co-view Disney Channel	25.0	19.7	5.3	26.5	25.6	0.8	
Co-view ABC Family Channel	11.5	12.9	-1.4	12.7	13.5	-0.8	
Co-view HBO Family	6.4	3.3	3.1	7.8	7.0	0.8	
Co-view Noggin	13.2	4.8	8.4***	8.2	6.3	1.9	**
Attitudes Toward Television and PBS							
Percentage Who Disagree That:							
Cartoons are safe for kids	77.6	82.7	-5.1	72.0	69.1	2.9	*
Don't keep track of what kids watch	96.0	94.5	1.5	93.7	93.3	0.5	
TV has no place in a child care setting	94.3	93.5	0.8	87.1	89.0	-1.9	
Upset if TV used in child care	85.5	89.3	-3.8	80.0	80.6	-0.6	
PBS is the same as other channels	91.9	97.0	-5.1**	90.0	86.6	3.5**	***
Percentage Who Agree That:							
TV can be an educational tool	99.5	99.0	0.6	98.0	97.1	0.8	
Even cartoon violence is harmful to kids	94.5	96.1	-1.6	95.2	94.5	0.7	
PBS broadcasts high-quality kids' TV	98.9	99.2	-0.3	99.7	99.2	0.6	
Comfortable if used TV to teach	92.3	91.4	0.9	86.9	88.4	-1.5	
PBS programs are safe for kids	84.9	83.6	1.3	88.2	87.7	0.5	
Books and Reading Frequency							
Percentage with ≥26 children's books	71.8	74.9	-3.0	70.5	66.3	4.2*	
Percentage who read once a day or more	72.4	69.6	2.8	71.9	70.3	1.6	
Minutes reading with child per day	55.5	50.3	5.2	49.5	50.8	-1.3	
Use of PBS Online Resources							
Visit website(s)	49.3	46.8	2.5	41.4	35.8	5.6**	
Use information from websites	36.4	38.4	-2.0	28.5	25.7	2.8	
Sample Size	**158-204**	**147-186**		**626-724**	**591-718**		

Source: Parent and Early Childhood Educator Second Follow-Up Surveys.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.5. Impacts of *Ready To Learn* Workshops Three Months After Random Assignment: Live in Rural Area Subgroups

	Rural Area			Non-Rural Area			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Learning Triangle Activities							
Percentage Who (3-5 Times/ Month):							
View program and talk about program or characters	86.6	83.2	3.3	91.9	87.2	4.6***	
View program and do related activity	81.1	78.2	2.9	86.4	83.3	3.1	
View program and read related book	62.6	57.8	4.8	65.1	58.8	6.3**	
View, read, and do related activity	52.0	46.0	6.0	53.0	48.3	4.7	
Television Viewing and Co-Viewing Behaviors							
Children's Weekday:							
Total TV viewing time (hours)	2.8	3.2	-0.4	3.0	3.1	-0.1	
Total PBS viewing time (hours)	1.3	1.3	0.0	1.3	1.3	0.1	
Total adult-focused TV viewing time (hours)	0.1	0.2	-0.1	0.2	0.3	-0.1*	
Percentage Who (All or Most of the Time):							
Co-view PBS KIDS	62.7	50.1	12.6**	63.6	60.0	3.6	
Co-view Nick Jr.	31.3	26.8	4.5	34.6	33.8	0.7	
Co-view Cartoon Network	21.2	19.8	1.4	21.2	22.2	-1.1	
Co-view Disney Channel	28.1	28.7	-0.6	30.3	26.6	3.7	
Co-view ABC Family Channel	15.1	13.5	1.6	17.2	17.2	-0.1	
Attitudes Toward Television and PBS							
Percentage Who Disagree That:							
Cartoons are safe for kids	79.2	73.3	5.9	67.0	64.2	2.8	
Don't keep track of what kids watch	93.7	96.2	-2.5	88.8	90.9	-2.1	
TV has no place in a child care setting	91.5	89.4	2.1	80.5	80.9	-0.5	
Upset if TV used in child care	84.9	81.3	3.7	74.6	74.0	0.5	
PBS is the same as other channels	92.1	96.1	-4.0*	84.9	81.4	3.5*	**
Percentage Who Agree That:							
TV can be an educational tool	99.3	98.7	0.6	97.1	96.4	0.7	
Even cartoon violence is harmful to kids	95.7	94.6	1.1	89.9	89.9	0.0	
PBS broadcasts high-quality kids' TV	99.2	99.9	-0.7	98.2	98.8	-0.6	
Comfortable if used TV to teach	86.4	86.6	-0.2	86.3	85.7	0.6	
PBS programs are safe for kids	84.4	82.4	2.0	88.1	87.3	0.8	
Books and Reading Frequency							
Percentage with ≥26 children's books	69.5	72.3	-2.8	65.3	63.3	2.0	
Percentage who read once a day or more	80.6	81.6	-1.0	76.7	79.1	-2.3	
Minutes reading with child per day	46.3	52.8	-6.5*	48.4	49.2	-0.8	
Sample Size	**182-224**	**157-202**		**605-749**	**587-731**		

Source: Parent and Early Childhood Educator First Follow-Up Surveys.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.6. Impacts of *Ready To Learn* Workshops Six Months After Random Assignment on Children: Live in Rural Area Parent Sample

	Rural Area			Non-Rural Area			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Language and Emergent Literacy							
Woodcock-Muñoz Picture Vocabulary standard score	100.6	100.9	-0.3	93.4	94.5	-1.2	
Percentage of children with Picture Vocabulary score of 100 or above	56.4	55.0	1.4	29.0	36.4	-7.3**	
Woodcock-Muñoz Letter-Word Identification standard score	106.2	103.4	2.9	105.9	105.3	0.6	
Percentage of children with Letter-Word Identification score of 100 or above	67.7	64.3	3.4	67.8	63.3	4.5	
Print knowledge score	1.0	1.0	0.0	1.1	1.1	0.0	
Book knowledge score	3.1	3.4	-0.3*	3.2	3.2	0.0	*
Percentage Whose Parent Reports That Child:							
Recognizes most/all letters of the alphabet[a]	70.3	73.2	-2.9	68.7	67.4	1.3	
Recognizes name in print[a]	98.5	99.2	-0.7	94.7	94.0	0.7	
Is able to/pretends to read[a]	77.5	66.7	10.8	67.7	70.5	-2.8	*
Writes or draws[a]	81.0	81.2	-0.3	78.5	74.5	4.0	
Writes first name[a]	79.9	86.3	-6.4	76.2	76.5	-0.3	
Emergent literacy composite[a,b]	3.9	4.0	-0.1	3.7	3.7	0.0	
Cognition and General Knowledge							
Leiter-R Classification standard score	101.9	104.5	-2.6	104.4	105.2	-0.8	
Percentage Who:							
Name 10 colors	69.5	70.3	-0.8	68.5	66.4	2.1	
Count to 10	54.2	52.9	1.3	49.2	47.7	1.5	
Percentage Whose Parent Reports That Child:							
Identifies 4 colors[a]	84.7	83.6	1.1	82.5	85.0	-2.4	
Identifies 10 written numbers[a]	69.6	77.5	-7.9	73.2	72.2	1.0	
Social and Emotional Development							
Behavior Problems score[a,c]	26.2	26.6	-0.4	25.6	25.8	-0.2	
Adaptive Social Behavior Inventory: Expressive score[a]	49.6	51.4	-1.8	49.3	48.6	0.7	*
Adaptive Social Behavior Inventory: Compliant score[a]	49.2	49.2	0.0	48.5	49.8	-1.3*	
Adaptive Social Behavior Inventory: Disruptive score[a,c]	48.4	44.5	4.0***	49.8	49.0	0.8	**
Approaches Toward Learning							
Leiter-R Attention Sustained standard score	102.9	107.1	-4.2*	104.4	104.6	-0.2	
Attention and engagement during testing	18.7	20.1	-1.4**	19.1	19.1	0.0	**
Sample Size	**92-100**	**86-91**		**340-394**	**315-362**		

Source: Parent Second Follow-Up Survey and Child Assessment.

[a]Parent report measures. All other outcomes directly assessed.

[b]The emergent literacy composite is the sum of five items and is scored as in the Family and Child Experiences Survey (FACES): recognizes all or most letters of the alphabet; counts to 20 or more; mostly writes/draws, not scribbles; writes own first name; and identifies red, yellow, blue, and green by name.

[c]For this measure, higher scores indicate less-desirable behavior. Therefore, lower scores, or impacts with negative signs for the workshop group, show a positive impact of the program because they represent lower levels of undesirable behavior.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.7. Impacts of *Ready To Learn* Workshops Six Months After Random Assignment: Parent Employment Status

	Not Employed Full- or Part-Time			Employed Full- or Part-Time			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Learning Triangle Activities							
Percentage Who (3-5 Times/ Month):							
View program and talk about program or characters	93.4	94.0	-0.6	93.4	91.7	1.7	
View program and do related activity	85.0	82.2	2.8	80.8	80.5	0.4	
View program and read related book	58.6	54.2	4.4	54.7	55.8	-1.1	
View, read, and do related activity	47.8	36.1	11.7***	39.3	39.8	-0.5	**
Television Viewing and Co-Viewing Behaviors							
Children's Weekday:							
Total TV viewing time (hours)	4.9	4.9	0.0	4.2	4.0	0.2	
Total PBS viewing time (hours)	2.0	1.8	0.2	1.5	1.6	-0.1	
Total adult-focused TV viewing time (hours)	0.4	0.5	-0.1	0.4	0.4	-0.1	
Percentage Who (All or Most of the Time):							
Co-view PBS KIDS	54.8	43.6	11.2***	50.3	46.0	4.4	
Co-view Nick Jr.	29.4	23.4	6.0	32.4	29.9	2.5	
Co-view Cartoon Network	29.8	22.7	7.0*	29.9	26.5	3.4	
Co-view Disney Channel	26.9	25.3	1.6	35.2	29.9	5.3	
Co-view ABC Family Channel	16.8	12.0	4.8	16.8	19.2	-2.4	
Co-view HBO Family	10.7	9.4	1.3	7.2	5.7	1.5	
Co-view Noggin	14.4	9.5	4.9*	11.0	8.2	2.8	
Attitudes Toward Television and PBS							
Percentage Who Disagree That:							
Cartoons are safe for kids	57.2	55.7	1.5	73.6	66.8	6.8**	
Don't keep track of what kids watch	93.3	87.9	5.4**	94.2	93.3	0.8	
TV has no place in a child care setting	80.7	82.0	-1.3	85.2	92.6	-7.3***	
Upset if TV used in child care	75.6	78.9	-3.3	84.1	83.2	0.9	
PBS is the same as other channels	84.0	82.7	1.4	89.9	90.1	-0.2	
Percentage Who Agree That:							
TV can be an educational tool	96.6	94.7	1.8	97.5	98.2	-0.7	
Even cartoon violence is harmful to kids	93.6	93.1	0.5	95.4	95.4	0.1	
PBS broadcasts high-quality kids' TV	99.8	99.6	0.2	99.5	99.9	-0.3	
Comfortable if used TV to teach	88.8	87.9	0.9	87.8	89.2	-1.4	
PBS programs are safe for kids	88.8	90.4	-1.6	90.9	88.6	2.4	
Books and Reading Frequency							
Percentage with ≥26 children's books	52.3	56.5	-4.2	67.9	63.5	4.4	*
Percentage who read once a day or more	61.1	53.8	7.3*	55.4	55.7	-0.3	
Minutes reading with child per day	49.4	44.6	4.8*	45.9	44.5	1.3	
Visited library in past month	48.7	47.1	1.7	50.2	46.1	4.2	
Use of PBS Online Resources							
Visit website(s)	31.2	31.1	0.0	44.0	41.1	2.9	
Use information from websites	22.7	19.5	3.2	32.6	28.2	4.4	
Sample Size	**289-309**	**263-288**		**257-289**	**206-243**		

Source: Parent Educator Second Follow-Up Surveys.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.8. Impacts of *Ready To Learn* Workshops Three Months After Random Assignment: Parent Employment Status

	Not Employed Full- or Part-Time			Employed Full- or Part-Time			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Learning Triangle Activities							
Percentage Who (3-5 Times/ Month):							
View program and talk about program or characters	98.4	96.7	1.7	98.6	95.6	3.0**	
View program and do related activity	92.2	90.3	1.9	89.2	88.8	0.4	
View program and read related book	75.5	67.1	8.4**	66.3	69.1	-2.9	**
View, read, and do related activity	59.8	53.1	6.7	52.4	57.4	-5.0	*
Television Viewing and Co-Viewing Behaviors							
Children's Weekday:							
Total TV viewing time (hours)	4.7	4.6	0.1	3.9	3.9	0.0	
Total PBS viewing time (hours)	1.9	1.7	0.2	1.5	1.6	-0.1	
Total adult-focused TV viewing time (hours)	0.3	0.4	-0.1	0.4	0.4	0.0	
Percentage Who (All or Most of the Time):							
Co-view PBS KIDS	56.4	50.2	6.1	60.2	51.4	8.9**	
Co-view Nick Jr.	34.4	31.9	2.4	41.8	35.3	6.5	
Co-view Cartoon Network	31.9	26.4	5.5	29.5	31.2	-1.7	
Co-view Disney Channel	29.7	27.6	2.1	39.8	34.3	5.6	
Co-view ABC Family Channel	21.3	20.5	0.8	22.9	24.2	-1.3	
Attitudes Toward Television and PBS							
Percentage Who Disagree That:							
Cartoons are safe for kids	49.6	45.2	4.4	69.2	62.8	6.4*	
Don't keep track of what kids watch	81.5	83.7	-2.2	88.6	92.5	-3.9	
TV has no place in a child care setting	68.4	70.1	-1.8	82.8	83.4	-0.6	
Upset if TV used in child care	61.5	68.6	-7.0*	78.4	74.3	4.0	**
PBS is the same as other channels	74.3	72.2	2.1	84.5	86.3	-1.8	
Percentage Who Agree That:							
TV can be an educational tool	94.4	94.0	0.3	97.4	96.3	1.0	
Even cartoon violence is harmful to kids	84.2	87.9	-3.7	90.1	90.1	0.0	
PBS broadcasts high-quality kids' TV	97.5	98.5	-1.0	98.6	99.1	-0.5	
Comfortable if used TV to teach	85.7	83.8	1.9	82.1	84.0	-1.9	
PBS programs are safe for kids	90.7	88.6	2.1	90.8	88.1	2.8	
Books and Reading Frequency							
Percentage with ≥26 children's books	53.6	53.2	0.4	65.6	67.2	-1.6	
Percentage who read once a day or more	71.2	66.6	4.6	66.7	68.6	-1.9	
Minutes reading with child per day	53.1	49.7	3.4	49.9	48.6	1.3	
Visited library in past month	55.5	54.4	1.1	54.4	56.8	-2.4	
Use of PBS Online Resources							
Visit website(s)	27.4	26.1	1.3	37.6	37.2	0.4	
Use information from websites	21.2	20.4	0.8	27.3	25.3	2.1	
Sample Size	**278-323**	**255-289**		**267-304**	**237-260**		

Source: Parent First Follow-Up Surveys.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.9. Impacts of *Ready To Learn* Workshops Six Months After Random Assignment on Children: Parent Employment Status

	Not Employed Full- or Part-Time			Employed Full- or Part-Time			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Language and Emergent Literacy							
Woodcock-Muñoz Picture Vocabulary standard score	91.9	94.5	-2.7**	97.8	96.3	1.5	**
Percentage of children with Picture Vocabulary score of 100 or above	26.9	38.9	-12.0***	44.9	37.8	7.1	***
Woodcock-Muñoz Letter-Word Identification standard score	104.1	104.2	-0.1	107.1	104.6	2.4*	
Percentage of children with Letter-Word Identification score of 100 or above	60.1	61.1	-1.1	72.2	64.2	8.0*	
Print knowledge score	1.0	1.1	-0.1	1.2	1.1	0.1	
Book knowledge score	3.1	3.2	-0.1	3.3	3.2	0.1	
Percentage Whose Parent Reports That Child:							
Recognizes most/all letters of the alphabet[a]	63.2	57.9	5.2	71.3	68.9	2.4	
Recognizes name in print[a]	94.1	92.4	1.7	98.0	95.6	2.4	
Is able to/pretends to read[a]	71.3	68.1	3.2	72.2	69.8	2.3	
Writes or draws[a]	79.8	70.4	9.4***	79.6	77.1	2.5	
Writes first name[a]	74.1	74.5	-0.4	79.9	82.0	-2.1	
Emergent literacy composite[a,b]	3.6	3.4	0.1	3.9	3.9	0.0	
Cognition and General Knowledge							
Leiter-R Classification standard score	103.8	104.5	-0.7	105.5	106.7	-1.2	
Percentage Who:							
Name 10 colors	64.3	63.3	1.0	72.4	69.5	2.9	
Count to 10	47.3	45.5	1.8	56.5	51.4	5.0	
Percentage Whose Parent Reports That Child:							
Identifies 4 colors[a]	81.0	81.1	-0.1	85.8	87.1	-1.4	
Identifies 10 written numbers[a]	69.6	66.1	3.5	73.7	78.0	-4.2	
Social and Emotional Development							
Behavior Problems score[a,c]	25.4	25.1	0.3	26.4	26.3	0.1	
Adaptive Social Behavior Inventory: Expressive score[a]	49.1	47.8	1.3	49.4	50.4	-1.0	*
Adaptive Social Behavior Inventory: Compliant score[a]	49.0	47.8	1.2	49.7	50.5	-0.8	
Adaptive Social Behavior Inventory: Disruptive score[a,c]	49.8	50.0	-0.2	49.7	47.6	2.1**	*
Approaches Toward Learning							
Leiter-R Attention Sustained standard score	102.9	104.2	-1.3	105.7	106.1	-0.4	
Attention and engagement during testing	18.7	18.8	-0.1	19.8	19.7	0.1	
Sample Size	**243-270**	**217-248**		**186-236**	**160-197**		

Source: Parent Second Follow-Up Survey and Child Assessment.

[a]Parent report measures. All other outcomes directly assessed.

[b]The emergent literacy composite is the sum of five items and is scored as in the Family and Child Experiences Survey (FACES): recognizes all or most letters of the alphabet; counts to 20 or more; mostly writes/draws, not scribbles; writes own first name; and identifies red, yellow, blue, and green by name.

[c]For this measure, higher scores indicate less-desirable behavior. Therefore, lower scores, or impacts with negative signs for the workshop group, show a positive impact of the program because they represent lower levels of undesirable behavior.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.10. Impacts of *Ready To Learn* Workshops Six Months After Random Assignment: Race/Ethnicity Subgroups

	African Americn, Hispanic, Other			White			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Learning Triangle Activities							
Percentage Who (3-5 Times/ Month):							
View program and talk about program or characters	87.6	89.4	-1.8	81.4	80.8	0.6	
View program and do related activity	81.3	82.0	-0.7	73.4	71.1	2.3	
View program and read related book	58.7	55.8	2.9	50.0	44.6	5.4	
View, read, and do related activity	45.2	43.1	2.1	40.4	31.4	9.0**	
Television Viewing and Co-Viewing Behaviors							
Children's Weekday:							
Total TV viewing time (hours)	4.2	3.7	0.4*	2.6	2.7	-0.1	*
Total PBS viewing time (hours)	1.6	1.5	0.1	1.1	1.1	0.0	
Total adult-focused TV viewing time (hours)	0.3	0.3	0.0	0.2	0.2	0.0	
Percentage Who (All or Most of the Time):							
Co-view PBS KIDS	62.5	54.9	7.7**	53.7	50.1	3.6	
Co-view Nick Jr.	30.8	28.5	2.3	25.2	25.5	-0.4	
Co-view Cartoon Network	23.6	23.8	-0.2	16.6	15.4	1.1	
Co-view Disney Channel	27.4	27.8	-0.4	24.2	25.0	-0.9	
Co-view ABC Family Channel	12.5	16.8	-4.2*	10.0	9.1	1.0	
Co-view HBO Family	10.6	9.7	0.9	3.8	1.9	1.8	
Co-view Noggin	10.3	6.4	3.9**	10.3	7.1	3.2	
Attitudes Toward Television and PBS							
Percentage Who Disagree That:							
Cartoons are safe for kids	62.8	60.2	2.6	87.2	88.4	-1.2	
Don't keep track of what kids watch	93.3	90.4	2.9*	97.2	96.7	0.5	
TV has no place in a child care setting	86.0	87.9	-1.9	93.1	94.1	-1.0	
Upset if TV used in child care	79.1	80.5	-1.4	85.1	85.3	-0.2	
PBS is the same as other channels	87.6	85.0	2.6	94.7	95.2	-0.5	
Percentage Who Agree That:							
TV can be an educational tool	97.6	95.9	1.7*	98.6	99.6	-1.1	**
Even cartoon violence is harmful to kids	95.5	94.0	1.5	95.8	95.6	0.2	
PBS broadcasts high-quality kids' TV	99.2	98.7	0.6	99.7	99.5	0.2	
Comfortable if used TV to teach	83.8	88.0	-4.2*	92.7	91.5	1.2	*
PBS programs are safe for kids	89.5	90.4	-0.9	83.2	84.2	-0.9	
Books and Reading Frequency							
Percentage with ≥26 children's books	60.4	59.3	1.1	84.9	83.7	1.3	
Percentage who read once a day or more	68.5	65.0	3.5	75.8	77.1	-1.2	
Minutes reading with child per day	52.4	51.5	0.9	48.2	49.7	-1.6	
Use of PBS Online Resources							
Visit website(s)	36.0	32.9	3.1	53.5	39.8	13.7***	**
Use information from websites	26.0	23.9	2.2	36.8	30.2	6.6*	
Sample Size	**505-579**	**437-538**		**266-368**	**280-394**		

Source: Parent and Early Childhood Educator Second Follow-Up Surveys.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.11. Impacts of *Ready To Learn* Workshops Three Months After Random Assignment: Race/Ethnicity Subgroups

	African Americn, Hispanic, Other			White			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Learning Triangle Activities							
Percentage Who (3-5 Times/ Month):							
View program and talk about program or characters	92.3	90.9	1.4	88.2	82.0	6.2***	
View program and do related activity	89.8	87.3	2.4	77.9	76.7	1.2	
View program and read related book	66.8	66.1	0.7	61.8	51.1	10.7***	**
View, read, and do related activity	57.3	54.0	3.3	48.0	40.5	7.5*	
Television Viewing and Co-Viewing Behaviors							
Children's Weekday:							
Total TV viewing time (hours)	3.6	3.6	0.1	2.2	2.2	0.0	
Total PBS viewing time (hours)	1.6	1.4	0.1	1.1	1.1	0.0	
Total adult-focused TV viewing time (hours)	0.2	0.4	-0.2***	0.1	0.1	0.0	**
Percentage Who (All or Most of the Time):							
Co-view PBS KIDS	66.1	59.5	6.6**	61.6	54.4	7.2*	
Co-view Nick Jr.	37.8	30.7	7.2**	30.0	28.4	1.6	
Co-view Cartoon Network	27.2	22.4	4.9*	16.4	14.3	2.2	
Co-view Disney Channel	34.7	26.5	8.2***	27.2	24.4	2.8	
Co-view ABC Family Channel	20.0	18.9	1.1	13.7	12.8	0.9	
Attitudes Toward Television and PBS							
Percentage Who Disagree That:							
Cartoons are safe for kids	58.9	54.1	4.8	83.1	81.6	1.5	
Don't keep track of what kids watch	83.6	86.4	-2.8	97.0	96.9	0.1	
TV has no place in a child care setting	76.1	79.3	-3.2	91.0	87.6	3.3	*
Upset if TV used in child care	67.6	72.5	-4.8*	86.5	80.4	6.1**	***
PBS is the same as other channels	80.6	78.6	2.0	93.6	92.8	0.8	
Percentage Who Agree That:							
TV can be an educational tool	97.1	96.2	0.9	98.3	98.9	-0.6	
Even cartoon violence is harmful to kids	88.4	87.2	1.2	95.1	95.3	-0.2	
PBS broadcasts high-quality kids' TV	98.5	98.6	-0.1	98.9	99.4	-0.5	
Comfortable if used TV to teach	85.0	82.9	2.1	87.9	89.7	-1.8	
PBS programs are safe for kids	90.1	88.4	1.7	84.7	84.5	0.2	
Books and Reading Frequency							
Percentage with ≥26 children's books	57.5	56.9	0.6	78.0	80.7	-2.7	
Percentage who read once a day or more	72.7	72.4	0.3	82.6	85.4	-2.8	
Minutes reading with child per day	49.5	51.6	-2.1	47.2	45.9	1.3	
Sample Size	**496-615**	**435-557**		**289-391**	**304-412**		

Source: Parent and Early Childhood Educator First Follow-Up Surveys.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.12. Impacts of *Ready To Learn* Workshops Six Months After Random Assignment on Children: Parent Race/Ethnicity

	African Americn, Hispanic, Other			White			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Language and Emergent Literacy							
Woodcock-Muñoz Picture Vocabulary standard score	90.3	92.1	-1.9	102.6	101.5	1.0	
Percentage of children with Picture Vocabulary score of 100 or above	20.3	29.8	-9.6**	60.0	57.6	2.4	*
Woodcock-Muñoz Letter-Word Identification standard score	104.5	103.6	0.9	105.2	105.9	-0.7	
Percentage of children with Letter-Word Identification score of 100 or above	61.1	58.0	3.1	67.2	71.2	-4.1	
Print knowledge score	1.1	1.1	0.0	1.1	1.0	0.0	
Book knowledge score	3.3	3.1	0.1	3.2	3.2	0.1	
Percentage Whose Parent Reports That Child:							
Recognizes most/all letters of the alphabet[a]	66.6	67.2	-0.6	67.1	57.0	10.0**	*
Recognizes name in print[a]	93.9	93.2	0.7	96.6	94.0	2.6	
Is able to/pretends to read[a]	69.7	67.4	2.3	73.2	67.9	5.3	
Writes or draws[a]	82.6	78.0	4.6	70.5	64.0	6.5	
Writes first name[a]	76.5	78.8	-2.4	76.1	73.4	2.8	
Emergent literacy composite[a,b]	3.7	3.7	0.0	3.6	3.5	0.1	
Cognition and General Knowledge							
Leiter-R Classification standard score	104.0	104.2	-0.1	104.4	105.4	-1.0	
Percentage Who:							
Name 10 colors	66.3	65.0	1.3	72.3	69.9	2.3	
Count to 10	51.4	49.1	2.2	51.5	43.2	8.2*	
Percentage Whose Parent Reports That Child:							
Identifies 4 colors[a]	81.8	79.4	2.4	83.9	88.9	-5.0	
Identifies 10 written numbers[a]	73.8	73.2	0.6	63.8	68.1	-4.3	
Social and Emotional Development							
Behavior Problems score[a,c]	25.7	25.8	-0.1	25.6	25.7	-0.1	
Adaptive Social Behavior Inventory: Expressive score[a]	49.0	47.8	1.1	49.9	50.6	-0.7	
Adaptive Social Behavior Inventory: Compliant score[a]	49.9	49.6	0.3	47.2	48.3	-1.0	
Adaptive Social Behavior Inventory: Disruptive score[a,c]	49.4	48.9	0.5	49.6	48.4	1.2	
Approaches Toward Learning							
Leiter-R Attention Sustained standard score	104.3	103.7	0.6	103.6	105.4	-1.8	
Attention and engagement during testing	19.4	19.5	-0.1	18.9	18.7	0.2	
Sample Size	**284-344**	**254-293**		**128-164**	**139-169**		

Source: Parent Second Follow-Up Survey and Child Assessment.

[a]Parent report measures. All other outcomes directly assessed.

[b]The emergent literacy composite is the sum of five items and is scored as in the Family and Child Experiences Survey (FACES): recognizes all or most letters of the alphabet; counts to 20 or more; mostly writes/draws, not scribbles; writes own first name; and identifies red, yellow, blue, and green by name.

[c]For this measure, higher scores indicate less-desirable behavior. Therefore, lower scores, or impacts with negative signs for the workshop group, show a positive impact of the program because they represent lower levels of undesirable behavior.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.13. Impacts of *Ready To Learn* Workshops Six Months After Random Assignment on Children: Child Age Parent Sample

	3 or 4 Years Old			5 or 6 Years Old			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Language and Emergent Literacy							
Woodcock-Muñoz Picture Vocabulary standard score	93.8	94.6	-0.8	95.9	96.2	-0.3	
Percentage of children with Picture Vocabulary score of 100 or above	30.6	32.2	-1.6	38.2	43.8	-5.6	
Woodcock-Muñoz Letter-Word Identification standard score	106.4	107.3	-0.9	103.6	101.5	2.1	*
Percentage of children with Letter-Word Identification score of 100 or above	67.6	67.2	0.5	60.9	55.6	5.3	
Print knowledge score	0.7	0.8	-0.1	1.4	1.3	0.1	*
Book knowledge score	2.4	2.6	-0.1	3.8	3.8	0.0	
Percentage Whose Parent Reports That Child:							
Recognizes most/all letters of the alphabet[a]	43.3	44.5	-1.2	83.6	79.4	4.1	
Recognizes name in print[a]	89.3	87.0	2.2	99.9	98.9	1.0*	
Is able to/pretends to read[a]	63.7	63.5	0.3	75.4	71.0	4.4	
Writes or draws[a]	63.2	57.4	5.8	89.2	86.9	2.3	
Writes first name[a]	54.3	57.9	-3.6	94.8	94.5	0.3	
Emergent literacy composite[a,b]	2.8	2.9	-0.2	4.4	4.3	0.1	
Cognition and General Knowledge							
Leiter-R Classification standard score	106.3	106.5	-0.2	103.2	104.1	-0.9	
Percentage Who:							
Name 10 colors	52.9	51.7	1.1	79.8	81.3	-1.5	
Count to 10	28.9	31.6	-2.7	67.9	66.3	1.6	
Percentage Whose Parent Reports That Child:							
Identifies 4 colors[a]	74.0	76.6	-2.5	90.1	90.2	-0.1	
Identifies 10 written numbers[a]	54.3	60.0	-5.7	86.0	82.4	3.6	
Social and Emotional Development							
Behavior Problems score[a,c]	25.3	25.3	0.0	25.8	25.8	-0.1	
Adaptive Social Behavior Inventory: Expressive score[a]	48.4	48.1	0.3	50.2	49.6	0.6	
Adaptive Social Behavior Inventory: Compliant score[a]	47.7	46.9	0.9	50.2	50.7	-0.5	
Adaptive Social Behavior Inventory: Disruptive score[a,c]	50.4	49.9	0.5	49.3	48.4	0.9	
Approaches Toward Learning							
Leiter-R Attention Sustained standard score	105.2	105.7	-0.5	103.8	104.0	-0.2	
Attention and engagement during testing	18.1	18.3	-0.2	20.2	20.3	0.0	
Sample Size	**211-260**	**173-212**		**223-254**	**222-243**		

Source: Parent Second Follow-Up Survey and Child Assessment.

[a]Parent report measures. All other outcomes directly assessed.

[b]The emergent literacy composite is the sum of five items and is scored as in the Family and Child Experiences Survey (FACES): recognizes all or most letters of the alphabet; counts to 20 or more; mostly writes/draws, not scribbles; writes own first name; and identifies red, yellow, blue, and green by name.

[c]For this measure, higher scores indicate less-desirable behavior. Therefore, lower scores, or impacts with negative signs for the workshop group, show a positive impact of the program because they represent lower levels of undesirable behavior.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.14. Impacts of *Ready To Learn* Workshops Six Months After Random Assignment on Children: Child Gender Parent Sample

	Male			Female			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Language and Emergent Literacy							
Woodcock-Muñoz Picture Vocabulary standard score	95.9	95.8	0.1	92.9	94.5	-1.7	
Percentage of children with Picture Vocabulary score of 100 or above	38.8	38.7	0.1	27.4	37.0	-9.6**	
Woodcock-Muñoz Letter-Word Identification standard score	103.9	103.4	0.5	106.8	106.2	0.6	
Percentage of children with Letter-Word Identification score of 100 or above	63.9	58.4	5.5	67.3	67.8	-0.6	
Print knowledge score	1.0	0.9	0.1	1.2	1.3	-0.1	**
Book knowledge score	3.1	2.9	0.2	3.3	3.5	-0.2	**
Percentage Whose Parent Reports That Child:							
Recognizes most/all letters of the alphabet[a]	62.9	57.5	5.4	67.4	68.5	-1.1	
Recognizes name in print[a]	93.1	90.9	2.2	96.9	96.4	0.5	
Is able to/pretends to read[a]	69.0	58.8	10.2**	73.7	73.8	-0.1	*
Writes or draws[a]	72.6	71.0	1.6	83.0	76.1	6.9**	
Writes first name[a]	73.3	74.3	-1.0	78.2	78.5	-0.4	
Emergent literacy composite[a,b]	3.5	3.5	0.0	3.8	3.8	0.0	
Cognition and General Knowledge							
Leiter-R Classification standard score	103.6	103.3	0.3	105.1	105.6	-0.5	
Percentage Who:							
Name 10 colors	62.3	59.1	3.2	71.9	75.5	-3.6	
Count to 10	45.0	43.2	1.7	54.2	59.0	-4.8	
Percentage Whose Parent Reports That Child:							
Identifies 4 colors[a]	78.6	81.0	-2.4	85.7	87.8	-2.1	
Identifies 10 written numbers[a]	65.7	66.2	-0.4	74.2	73.7	0.6	
Social and Emotional Development							
Behavior Problems score[a,c]	25.2	25.2	0.0	25.8	25.8	0.0	
Adaptive Social Behavior Inventory: Expressive score[a]	49.4	47.6	1.8*	48.9	49.5	-0.6	*
Adaptive Social Behavior Inventory: Compliant score[a]	48.3	47.7	0.6	49.2	49.4	-0.1	
Adaptive Social Behavior Inventory: Disruptive score[a,c]	49.9	49.4	0.5	50.6	49.5	1.1	
Approaches Toward Learning							
Leiter-R Attention Sustained standard score	101.8	103.0	-1.2	106.3	108.2	-2.0	
Attention and engagement during testing	18.6	17.9	0.7*	19.5	20.3	-0.8**	***
Sample Size	**202-246**	**203-243**		**237-271**	**186-220**		

Source: Parent Second Follow-Up Survey and Child Assessment.

[a]Parent report measures. All other outcomes directly assessed.

[b]The emergent literacy composite is the sum of five items and is scored as in the Family and Child Experiences Survey (FACES): recognizes all or most letters of the alphabet; counts to 20 or more; mostly writes/draws, not scribbles; writes own first name; and identifies red, yellow, blue, and green by name.

[c]For this measure, higher scores indicate less-desirable behavior. Therefore, lower scores, or impacts with negative signs for the workshop group, show a positive impact of the program because they represent lower levels of undesirable behavior.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.15. Impacts of *Ready To Learn* Workshops Six Months After Random Assignment on Children: Child Care Hours Parent Sample

	Less than 10 Hours per Week			10 Hours per Week or More			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Language and Emergent Literacy							
Woodcock-Muñoz Picture Vocabulary standard score	93.3	96.0	-2.7**	98.0	97.0	1.0	*
Percentage of children with Picture Vocabulary score of 100 or above	33.9	39.5	-5.7	37.1	41.4	-4.2	
Woodcock-Muñoz Letter-Word Identification standard score	104.2	102.9	1.3	108.7	109.5	-0.8	
Percentage of children with Letter-Word Identification score of 100 or above	60.5	61.1	-0.6	79.1	68.7	10.5*	
Print knowledge score	1.1	1.1	0.0	1.0	1.0	0.0	
Book knowledge score	3.2	3.4	-0.1	3.1	3.0	0.1	
Percentage Whose Parent Reports That Child:							
Recognizes most/all letters of the alphabet[a]	67.3	63.9	3.4	63.5	66.3	-2.8	
Recognizes name in print[a]	92.9	93.2	-0.3	97.0	94.7	2.3	
Is able to/pretends to read[a]	70.2	68.8	1.4	74.6	61.4	13.3**	
Writes or draws[a]	77.9	75.9	2.0	72.5	74.5	-2.0	
Writes first name[a]	76.6	77.6	-1.0	71.3	73.8	-2.6	
Emergent literacy composite[a,b]	3.6	3.7	0.0	3.6	3.8	-0.2	
Cognition and General Knowledge							
Leiter-R Classification standard score	103.0	104.7	-1.7	107.6	105.2	2.4	
Percentage Who:							
Name 10 colors	68.7	68.2	0.6	66.0	64.9	1.0	
Count to 10	53.1	49.7	3.4	42.0	52.3	-10.2*	**
Percentage Whose Parent Reports That Child:							
Identifies 4 colors[a]	79.9	83.5	-3.6	83.5	90.2	-6.7*	
Identifies 10 written numbers[a]	71.4	70.5	0.9	70.0	76.4	-6.4	
Social and Emotional Development							
Behavior Problems score[a,c]	25.6	25.6	0.1	25.7	25.9	-0.2	
Adaptive Social Behavior Inventory: Expressive score[a]	49.3	49.2	0.1	48.8	47.6	1.2	
Adaptive Social Behavior Inventory: Compliant score[a]	48.8	49.5	-0.7	48.2	48.2	0.0	
Adaptive Social Behavior Inventory: Disruptive score[a,c]	49.6	49.3	0.3	50.2	48.2	2.0	
Approaches Toward Learning							
Leiter-R Attention Sustained standard score	102.9	105.7	-2.9**	106.8	106.9	-0.1	
Attention and engagement during testing	19.0	19.3	-0.2	19.7	19.2	0.5	
Sample Size	**277-306**	**273-298**		**105-141**	**86-121**		

Source: Parent Second Follow-Up Survey and Child Assessment.

[a]Parent report measures. All other outcomes directly assessed.

[b]The emergent literacy composite is the sum of five items and is scored as in the Family and Child Experiences Survey (FACES): recognizes all or most letters of the alphabet; counts to 20 or more; mostly writes/draws, not scribbles; writes own first name; and identifies red, yellow, blue, and green by name.

[c]For this measure, higher scores indicate less-desirable behavior. Therefore, lower scores, or impacts with negative signs for the workshop group, show a positive impact of the program because they represent lower levels of undesirable behavior.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.16. Impacts of *Ready To Learn* Workshops Six Months After Random Assignment: Workshop Content Coverage (Observer Rating)

	Did Not Cover All Content			Covered All Content			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Learning Triangle Activities							
Percentage Who (3-5 Times/ Month):							
View program and talk about program or characters	89.8	91.2	-1.4	81.9	78.0	3.9	
View program and do related activity	79.3	82.2	-2.9	76.8	72.2	4.5	*
View program and read related book	58.0	56.0	2.0	54.2	46.8	7.3*	
View, read, and do related activity	43.2	40.1	3.2	43.5	36.5	7.0*	
Television Viewing and Co-Viewing Behaviors							
Children's Weekday:							
Total TV viewing time (hours)	4.1	4.0	0.1	3.3	2.6	0.6*	
Total PBS viewing time (hours)	1.7	1.5	0.2	1.2	1.1	0.1	
Total adult-focused TV viewing time (hours)	0.3	0.3	0.0	0.3	0.2	0.1	
Percentage Who (All or Most of the Time):							
Co-view PBS KIDS	57.8	51.4	6.4*	56.1	52.1	4.0	
Co-view Nick Jr.	29.9	29.5	0.4	25.5	24.9	0.5	
Co-view Cartoon Network	23.0	24.8	-1.8	19.4	18.8	0.6	
Co-view Disney Channel	28.1	27.2	1.0	26.6	23.4	3.2	
Co-view ABC Family Channel	12.4	16.4	-4.0*	11.3	10.0	1.3	
Co-view HBO Family	7.4	8.4	-1.0	7.7	2.9	4.7**	**
Co-view Noggin	12.0	8.2	3.8*	7.7	6.1	1.6	
Attitudes Toward Television and PBS							
Percentage Who Disagree That:							
Cartoons are safe for kids	68.1	65.3	2.7	72.7	72.6	0.1	
Don't keep track of what kids watch	93.0	92.8	0.2	95.3	94.1	1.2	
TV has no place in a child care setting	86.0	87.7	-1.7	86.4	92.5	-6.0**	
Upset if TV used in child care	78.9	77.7	1.2	82.3	83.8	-1.5	
PBS is the same as other channels	87.4	85.1	2.3	89.0	87.9	1.1	
Percentage Who Agree That:							
TV can be an educational tool	98.8	96.6	2.2**	96.5	95.5	1.1	
Even cartoon violence is harmful to kids	95.3	94.9	0.4	95.5	93.2	2.3	
PBS broadcasts high-quality kids' TV	99.9	99.3	0.7	99.1	98.9	0.2	
Comfortable if used TV to teach	88.0	89.1	-1.1	88.6	86.1	2.5	
PBS programs are safe for kids	87.8	87.5	0.3	88.2	88.7	-0.5	
Books and Reading Frequency							
Percentage with ≥26 children's books	65.4	61.7	3.7	65.6	65.2	0.4	
Percentage who read once a day or more	66.0	62.1	3.9	72.6	68.3	4.3	
Minutes reading with child per day	47.3	49.4	-2.2	54.0	47.9	6.0*	**
Use of PBS Online Resources							
Visit website(s)	39.6	36.4	3.2	41.9	32.6	9.3**	
Use information from websites	26.4	25.4	1.1	29.5	25.6	3.9	
Sample Size	**450-520**	**403-472**		**255-311**	**268-351**		

Source: Parent and Early Childhood Educator Second Follow-Up Surveys.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.17. Impacts of *Ready To Learn* Workshops Three Months After Random Assignment: Workshop Content Coverage (Observer Rating)

	Did Not Cover All Content			Covered All Content			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Learning Triangle Activities							
Percentage Who (3-5 Times/ Month):							
View program and talk about program or characters	96.5	93.2	3.3**	84.8	82.1	2.7	
View program and do related activity	89.9	88.8	1.1	80.7	78.9	1.8	
View program and read related book	67.4	68.3	-0.9	60.9	52.6	8.3**	*
View, read, and do related activity	56.3	55.3	1.1	46.6	44.5	2.2	
Television Viewing and Co-Viewing Behaviors							
Children's Weekday:							
Total TV viewing time (hours)	3.6	4.0	-0.3	2.7	2.3	0.4**	**
Total PBS viewing time (hours)	1.6	1.5	0.0	1.2	1.0	0.2**	
Total adult-focused TV viewing time (hours)	0.3	0.4	-0.1	0.1	0.2	0.0	
Percentage Who (All or Most of the Time):							
Co-view PBS KIDS	63.0	57.3	5.7*	60.7	54.7	6.0	
Co-view Nick Jr.	38.0	34.9	3.2	28.3	23.4	5.0	
Co-view Cartoon Network	28.2	27.6	0.6	18.0	15.3	2.8	
Co-view Disney Channel	34.4	29.3	5.1	25.4	19.3	6.1*	
Co-view ABC Family Channel	21.0	18.8	2.2	11.8	15.0	-3.2	
Attitudes Toward Television and PBS							
Percentage Who Disagree That:							
Cartoons are safe for kids	61.6	59.6	2.0	67.9	66.9	1.0	
Don't keep track of what kids watch	87.6	87.6	-0.1	85.3	90.8	-5.5*	
TV has no place in a child care setting	77.2	78.8	-1.6	80.8	77.6	3.2	
Upset if TV used in child care	71.1	73.2	-2.1	74.8	76.9	-2.1	
PBS is the same as other channels	80.0	81.8	-1.8	89.3	80.4	9.0***	***
Percentage Who Agree That:							
TV can be an educational tool	97.2	96.3	0.9	95.6	96.0	-0.4	
Even cartoon violence is harmful to kids	88.7	86.9	1.8	91.2	91.3	-0.1	
PBS broadcasts high-quality kids' TV	98.3	98.1	0.2	98.1	99.6	-1.5*	
Comfortable if used TV to teach	84.6	86.4	-1.8	85.7	83.9	1.9	
PBS programs are safe for kids	89.4	86.8	2.6	88.7	87.9	0.7	
Books and Reading Frequency							
Percentage with ≥26 children's books	63.1	59.3	3.8	65.1	59.6	5.5	
Percentage who read once a day or more	70.0	75.9	-5.9**	83.7	78.2	5.5*	***
Minutes reading with child per day	48.6	51.6	-3.0	48.6	48.7	0.0	
Sample Size	**463-534**	**419-490**		**240-330**	**258-354**		

Source: Parent and Early Childhood Educator First Follow-Up Surveys.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.18. Impacts of *Ready To Learn* Workshops Six Months After Random Assignment on Children: Workshop Content Coverage (Observer Rating) Parent Sample

	Did Not Cover All Content			Covered All Content			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Language and Emergent Literacy							
Woodcock-Muñoz Picture Vocabulary standard score	95.6	94.3	1.4	94.7	95.8	-1.0	
Percentage of children with Picture Vocabulary score of 100 or above	37.1	38.2	-1.1	31.0	35.3	-4.3	
Woodcock-Muñoz Letter-Word Identification standard score	106.6	104.6	2.0*	104.1	103.4	0.7	
Percentage of children with Letter-Word Identification score of 100 or above	70.2	63.4	6.8*	61.1	59.1	2.0	
Print knowledge score	1.2	1.1	0.1	0.9	0.9	0.1	
Book knowledge score	3.3	3.1	0.1	2.8	2.9	-0.1	
Percentage Whose Parent Reports That Child:							
Recognizes most/all letters of the alphabet[a]	67.5	65.8	1.7	63.4	55.6	7.8	
Recognizes name in print[a]	95.4	93.9	1.5	95.0	95.4	-0.4	
Is able to/pretends to read[a]	70.1	69.7	0.5	66.7	69.9	-3.2	
Writes or draws[a]	78.5	76.4	2.2	76.2	68.8	7.4	
Writes first name[a]	76.1	74.1	2.1	76.9	74.2	2.7	
Emergent literacy composite[a,b]	3.7	3.7	0.1	3.6	3.5	0.1	
Cognition and General Knowledge							
Leiter-R Classification standard score	104.8	105.4	-0.6	101.2	102.6	-1.3	
Percentage Who:							
Name 10 colors	72.4	65.4	7.0**	54.1	68.9	-14.8**	***
Count to 10	51.6	48.4	3.2	49.0	48.6	0.4	
Percentage Whose Parent Reports That Child:							
Identifies 4 colors[a]	82.6	83.5	-1.0	78.8	82.2	-3.4	
Identifies 10 written numbers[a]	72.2	70.7	1.5	73.9	69.1	4.8	
Social and Emotional Development							
Behavior Problems score[a,c]	25.6	25.5	0.1	25.6	26.0	-0.4	
Adaptive Social Behavior Inventory: Expressive score[a]	49.1	48.5	0.6	47.5	48.4	-0.9	
Adaptive Social Behavior Inventory: Compliant score[a]	48.8	49.2	-0.4	48.2	48.1	0.1	
Adaptive Social Behavior Inventory: Disruptive score[a,c]	49.7	48.8	0.9	48.4	49.0	-0.5	
Approaches Toward Learning							
Leiter-R Attention Sustained standard score	106.7	105.7	1.0	101.8	105.5	-3.8*	**
Attention and engagement during testing	19.2	19.0	0.2	18.6	19.3	-0.7	
Sample Size	**307-345**	**284-313**		**98-113**	**90-107**		

Source: Parent Second Follow-Up Survey and Child Assessment.

[a]Parent report measures. All other outcomes directly assessed.

[b]The emergent literacy composite is the sum of five items and is scored as in the Family and Child Experiences Survey (FACES): recognizes all or most letters of the alphabet; counts to 20 or more; mostly writes/draws, not scribbles; writes own first name; and identifies red, yellow, blue, and green by name.

[c]For this measure, higher scores indicate less-desirable behavior. Therefore, lower scores, or impacts with negative signs for the workshop group, show a positive impact of the program because they represent lower levels of undesirable behavior.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.19. Impacts of *Ready To Learn* Workshops Six Months After Random Assignment: Quality of Presentation (Observer Rating)

	Observer Rating Low			Observer Rating High			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Learning Triangle Activities							
Percentage Who (3-5 Times/ Month):							
View program and talk about program or characters	90.8	89.3	1.6	79.3	79.7	-0.4	
View program and do related activity	77.2	80.1	-2.9	75.4	74.6	0.8	
View program and read related book	60.2	55.9	4.3	50.2	47.0	3.2	
View, read, and do related activity	45.1	39.6	5.5	40.5	36.2	4.4	
Television Viewing and Co-Viewing Behaviors							
Children's Weekday:							
Total TV viewing time (hours)	3.9	3.6	0.3	2.9	3.0	-0.1	
Total PBS viewing time (hours)	1.5	1.4	0.1	1.2	1.2	0.0	
Total adult-focused TV viewing time (hours)	0.3	0.3	0.0	0.2	0.2	0.0	
Percentage Who (All or Most of the Time):							
Co-view PBS KIDS	55.5	48.1	7.4*	60.0	55.6	4.4	
Co-view Nick Jr.	27.9	28.4	-0.5	27.2	25.8	1.4	
Co-view Cartoon Network	25.5	19.3	6.2*	17.8	20.4	-2.6	**
Co-view Disney Channel	27.4	26.1	1.3	25.7	25.3	0.4	
Co-view ABC Family Channel	9.8	16.1	-6.3**	12.2	12.6	-0.3	*
Co-view HBO Family	6.5	8.8	-2.2	6.8	4.4	2.5	*
Co-view Noggin	10.2	8.5	1.6	10.7	5.3	5.4***	
Attitudes Toward Television and PBS							
Percentage Who Disagree That:							
Cartoons are safe for kids	72.6	68.2	4.3	74.5	75.1	-0.6	
Don't keep track of what kids watch	95.3	93.2	2.1	94.0	94.7	-0.6	
TV has no place in a child care setting	87.7	89.9	-2.1	89.0	89.8	-0.8	
Upset if TV used in child care	81.7	80.6	1.1	80.1	82.1	-2.0	
PBS is the same as other channels	90.0	90.4	-0.4	89.8	87.4	2.5	
Percentage Who Agree That:							
TV can be an educational tool	97.4	96.7	0.7	98.4	97.6	0.8	
Even cartoon violence is harmful to kids	95.4	96.0	-0.6	95.1	94.0	1.1	
PBS broadcasts high-quality kids' TV	99.7	99.0	0.6	99.2	98.6	0.7	
Comfortable if used TV to teach	85.5	93.0	-7.5***	88.1	86.0	2.1	***
PBS programs are safe for kids	84.5	88.3	-3.8	87.4	86.5	0.9	
Books and Reading Frequency							
Percentage with ≥26 children's books	64.2	63.8	0.4	70.0	69.9	0.2	
Percentage who read once a day or more	63.9	61.4	2.5	76.0	73.4	2.7	
Minutes reading with child per day	47.4	47.8	-0.4	53.0	50.9	2.1	
Use of PBS Online Resources							
Visit website(s)	35.7	35.2	0.6	43.7	35.1	8.6***	
Use information from websites	27.5	25.5	2.0	28.4	26.9	1.5	
Sample Size	**279-320**	**268-335**		**535-650**	**493-615**		

Source: Parent and Early Childhood Educator Second Follow-Up Surveys.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.20. Impacts of *Ready To Learn* Workshops Three Months After Random Assignment: Quality of Presentation (Observer Rating)

	Observer Rating Low			Observer Rating High			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Learning Triangle Activities							
Percentage Who (3-5 Times/ Month):							
View program and talk about program or characters	96.1	91.3	4.8***	84.4	82.2	2.2	
View program and do related activity	90.9	85.9	5.0**	80.4	81.3	-0.9	*
View program and read related book	69.0	66.4	2.6	62.2	55.8	6.4**	
View, read, and do related activity	57.7	53.5	4.2	51.5	43.7	7.8**	
Television Viewing and Co-Viewing Behaviors							
Children's Weekday:							
Total TV viewing time (hours)	3.9	3.6	0.2	2.5	2.6	-0.1	
Total PBS viewing time (hours)	1.7	1.5	0.1	1.2	1.1	0.1	
Total adult-focused TV viewing time (hours)	0.2	0.3	0.0	0.2	0.3	-0.1**	
Percentage Who (All or Most of the Time):							
Co-view PBS KIDS	62.7	59.9	2.8	63.5	55.6	7.9**	
Co-view Nick Jr.	35.9	33.3	2.6	31.4	28.2	3.3	
Co-view Cartoon Network	26.9	25.7	1.2	19.9	15.7	4.2*	
Co-view Disney Channel	30.9	31.3	-0.4	29.7	22.8	6.9**	
Co-view ABC Family Channel	20.1	19.6	0.5	14.7	12.5	2.3	
Attitudes Toward Television and PBS							
Percentage Who Disagree That:							
Cartoons are safe for kids	65.6	62.2	3.5	68.4	66.7	1.7	
Don't keep track of what kids watch	89.6	91.4	-1.8	87.7	91.7	-4.0**	
TV has no place in a child care setting	80.0	81.2	-1.1	79.8	84.0	-4.2*	
Upset if TV used in child care	74.3	72.9	1.4	74.3	75.9	-1.6	
PBS is the same as other channels	85.2	83.2	2.0	84.2	82.6	1.6	
Percentage Who Agree That:							
TV can be an educational tool	97.1	96.5	0.6	97.4	97.3	0.2	
Even cartoon violence is harmful to kids	90.5	89.8	0.8	90.2	90.2	0.1	
PBS broadcasts high-quality kids' TV	98.0	99.3	-1.4	98.4	98.5	-0.2	
Comfortable if used TV to teach	85.1	87.7	-2.6	85.8	85.0	0.8	
PBS programs are safe for kids	88.5	86.4	2.1	87.7	86.3	1.4	
Books and Reading Frequency							
Percentage with ≥26 children's books	64.8	67.6	-2.9	63.6	64.3	-0.7	
Percentage who read once a day or more	69.7	74.4	-4.7	80.6	81.7	-1.0	
Minutes reading with child per day	49.8	48.2	1.6	48.9	48.5	0.4	
Sample Size	**286-344**	**296-350**		**517-682**	**460-634**		

Source: Parent and Early Childhood Educator First Follow-Up Surveys.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.21. Impacts of *Ready To Learn* Workshops Six Months After Random Assignment on Children: Quality of Presentation (Observer Rating) Parent Sample

	Observer Rating Low			Observer Rating High			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Language and Emergent Literacy							
Woodcock-Muñoz Picture Vocabulary standard score	96.6	95.2	1.4	93.3	95.3	-2.0	*
Percentage of children with Picture Vocabulary score of 100 or above	37.0	42.1	-5.1	32.7	35.2	-2.5	
Woodcock-Muñoz Letter-Word Identification standard score	103.6	103.2	0.4	105.1	104.5	0.6	
Percentage of children with Letter-Word Identification score of 100 or above	62.4	59.1	3.4	66.1	61.6	4.5	
Print knowledge score	1.1	1.0	0.1	1.1	1.1	-0.1	
Book knowledge score	3.1	3.0	0.1	3.2	3.2	0.0	
Percentage Whose Parent Reports That Child:							
Recognizes most/all letters of the alphabet[a]	61.8	61.7	0.1	69.4	65.3	4.1	
Recognizes name in print[a]	93.5	93.8	-0.3	96.6	93.4	3.1*	
Is able to/pretends to read[a]	76.5	73.2	3.2	69.3	63.0	6.2	
Writes or draws[a]	74.5	76.6	-2.1	78.8	72.7	6.1*	
Writes first name[a]	75.1	73.1	2.0	75.0	78.1	-3.2	
Emergent literacy composite[a,b]	3.6	3.6	0.0	3.7	3.7	0.0	
Cognition and General Knowledge							
Leiter-R Classification standard score	106.3	106.9	-0.6	102.8	103.5	-0.6	
Percentage Who:							
Name 10 colors	70.4	64.5	5.9	65.6	69.3	-3.7	*
Count to 10	51.8	47.6	4.2	48.6	51.4	-2.8	
Percentage Whose Parent Reports That Child:							
Identifies 4 colors[a]	82.1	80.2	1.9	80.2	84.5	-4.3	
Identifies 10 written numbers[a]	67.3	65.3	2.0	73.0	75.8	-2.9	
Social and Emotional Development							
Behavior Problems score[a,c]	25.7	26.0	-0.3	25.6	25.5	0.1	
Adaptive Social Behavior Inventory: Expressive score[a]	49.7	48.1	1.6	48.3	49.4	-1.1	*
Adaptive Social Behavior Inventory: Compliant score[a]	49.0	49.8	-0.8	48.4	48.6	-0.2	
Adaptive Social Behavior Inventory: Disruptive score[a,c]	49.9	47.6	2.2**	49.2	49.2	0.0	*
Approaches Toward Learning							
Leiter-R Attention Sustained standard score	106.7	106.4	0.3	102.4	104.6	-2.2	
Attention and engagement during testing	19.0	18.8	0.2	19.3	19.4	-0.2	
Sample Size	**201-228**	**191-210**		**280-304**	**243-270**		

Source: Parent Second Follow-Up Survey and Child Assessment.

[a]Parent report measures. All other outcomes directly assessed.

[b]The emergent literacy composite is the sum of five items and is scored as in the Family and Child Experiences Survey (FACES): recognizes all or most letters of the alphabet; counts to 20 or more; mostly writes/draws, not scribbles; writes own first name; and identifies red, yellow, blue, and green by name.

[c]For this measure, higher scores indicate less-desirable behavior. Therefore, lower scores, or impacts with negative signs for the workshop group, show a positive impact of the program because they represent lower levels of undesirable behavior.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.22. Impacts of *Ready To Learn* Workshops Six Months After Random Assignment: Overall Quality (Observer Rating)

	Lower Quality			High Quality			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Learning Triangle Activities							
Percentage Who (3-5 Times/ Month):							
View program and talk about program or characters	90.9	91.1	-0.2	79.6	76.5	3.1	
View program and do related activity	79.8	82.2	-2.4	74.7	71.3	3.4	
View program and read related book	58.1	56.9	1.2	51.1	44.7	6.4	
View, read, and do related activity	44.8	40.8	3.9	39.9	35.8	4.1	
Television Viewing and Co-Viewing Behaviors							
Children's Weekday:							
Total TV viewing time (hours)	3.9	3.9	0.1	3.5	2.7	0.8*	
Total PBS viewing time (hours)	1.7	1.5	0.2	1.3	1.2	0.1	
Total adult-focused TV viewing time (hours)	0.3	0.3	0.0	0.3	0.2	0.1	
Percentage Who (All or Most of the Time):							
Co-view PBS KIDS	58.3	51.9	6.4**	54.1	52.2	1.9	
Co-view Nick Jr.	28.1	29.6	-1.5	27.2	24.1	3.0	
Co-view Cartoon Network	22.4	24.2	-1.8	19.5	21.0	-1.5	
Co-view Disney Channel	27.0	27.0	0.0	26.9	24.2	2.7	
Co-view ABC Family Channel	11.5	16.1	-4.5**	12.7	11.4	1.3	
Co-view HBO Family	6.6	7.9	-1.3	7.9	2.5	5.4**	**
Co-view Noggin	11.0	8.0	3.0	8.3	6.3	2.0	
Attitudes Toward Television and PBS							
Percentage Who Disagree That:							
Cartoons are safe for kids	67.8	65.8	1.9	72.8	71.8	1.0	
Don't keep track of what kids watch	93.3	92.7	0.6	95.4	94.0	1.3	
TV has no place in a child care setting	85.8	87.6	-1.9	87.6	92.6	-5.0*	
Upset if TV used in child care	79.9	79.0	0.9	80.2	81.3	-1.2	
PBS is the same as other channels	87.5	85.1	2.4	89.4	87.8	1.6	
Percentage Who Agree That:							
TV can be an educational tool	98.3	96.5	1.8*	97.7	94.7	3.0	
Even cartoon violence is harmful to kids	95.3	94.7	0.6	95.5	93.4	2.2	
PBS broadcasts high-quality kids' TV	99.9	99.3	0.5	99.3	99.1	0.2	
Comfortable if used TV to teach	87.7	89.6	-1.9	90.2	84.6	5.6*	*
PBS programs are safe for kids	87.4	89.3	-1.9	89.1	87.4	1.7	
Books and Reading Frequency							
Percentage with ≥26 children's books	64.4	62.5	1.9	65.0	63.8	1.2	
Percentage who read once a day or more	66.1	64.0	2.1	71.9	66.2	5.7	
Minutes reading with child per day	47.7	48.3	-0.6	56.0	49.6	6.4	
Use of PBS Online Resources							
Visit website(s)	38.8	36.5	2.3	43.1	30.6	12.6***	*
Use information from websites	26.7	25.2	1.5	29.8	25.0	4.7	
Sample Size	**526-607**	**499-600**		**184-227**	**179-330**		

Source: Parent and Early Childhood Educator Second Follow-Up Surveys.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.23. Impacts of *Ready To Learn* Workshops Three Months After Random Assignment: Overall Quality (Observer Rating)

	Lower Quality			High Quality			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Learning Triangle Activities							
Percentage Who (3-5 Times/ Month):							
View program and talk about program or characters	95.8	91.9	3.9***	81.9	81.0	0.9	
View program and do related activity	90.1	87.1	3.0	77.7	78.6	-0.8	
View program and read related book	67.3	67.3	0.0	59.3	51.8	7.5	
View, read, and do related activity	57.1	54.7	2.4	42.8	43.9	-1.1	
Television Viewing and Co-Viewing Behaviors							
Children's Weekday:							
Total TV viewing time (hours)	3.9	3.6	0.2	2.7	2.3	0.5	*
Total PBS viewing time (hours)	1.7	1.5	0.1	1.2	1.0	0.3***	*
Total adult-focused TV viewing time (hours)	0.2	0.3	0.0	0.2	0.2	0.0	
Percentage Who (All or Most of the Time):							
Co-view PBS KIDS	62.6	57.1	5.6*	59.7	53.7	6.0	
Co-view Nick Jr.	36.5	33.3	3.3	28.1	24.5	3.7	
Co-view Cartoon Network	27.1	25.6	1.4	16.6	15.9	0.7	
Co-view Disney Channel	32.8	27.8	5.0*	24.1	20.0	4.1	
Co-view ABC Family Channel	20.3	18.2	2.1	10.5	15.9	-5.3*	*
Attitudes Toward Television and PBS							
Percentage Who Disagree That:							
Cartoons are safe for kids	62.1	59.6	2.5	65.8	66.0	-0.2	
Don't keep track of what kids watch	87.4	88.4	-1.0	83.8	89.9	-6.1*	
TV has no place in a child care setting	77.1	79.3	-2.1	80.6	76.4	4.1	
Upset if TV used in child care	71.9	73.8	-1.9	72.3	76.3	-4.1	
PBS is the same as other channels	79.8	81.4	-1.6	89.8	80.1	9.7***	***
Percentage Who Agree That:							
TV can be an educational tool	96.9	96.1	0.8	96.2	95.5	0.6	
Even cartoon violence is harmful to kids	89.0	87.8	1.3	90.3	90.3	0.0	
PBS broadcasts high-quality kids' TV	98.2	98.2	0.0	98.3	99.4	-1.1	
Comfortable if used TV to teach	84.4	87.2	-2.9	85.8	81.1	4.8	*
PBS programs are safe for kids	89.3	87.5	1.9	89.0	88.0	1.0	
Books and Reading Frequency							
Percentage with ≥26 children's books	61.9	60.4	1.5	65.4	56.1	9.2**	
Percentage who read once a day or more	71.2	75.8	-4.6*	83.2	79.3	3.9	*
Minutes reading with child per day	48.6	50.2	-1.6	49.8	50.9	-1.2	
Sample Size	**539-638**	**527-630**		**168-230**	**156-222**		

Source: Parent and Early Childhood Educator First Follow-Up Surveys.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.24. Impacts of *Ready To Learn* Workshops Six Months After Random Assignment on Children: Overall Quality (Observer Rating) Parent Sample

	Lower Quality			High Quality			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Language and Emergent Literacy							
Woodcock-Muñoz Picture Vocabulary standard score	95.5	94.6	0.9	86.9	91.4	-4.5	*
Percentage of children with Picture Vocabulary score of 100 or above	36.2	38.4	-2.2	18.0	32.0	-14.0*	
Woodcock-Muñoz Letter-Word Identification standard score	106.3	104.5	1.7*	101.5	100.6	0.8	
Percentage of children with Letter-Word Identification score of 100 or above	70.0	63.5	6.5*	50.8	52.4	-1.6	
Print knowledge score	1.2	1.1	0.1	0.9	0.9	0.0	
Book knowledge score	3.3	3.1	0.1	2.7	3.1	-0.4	*
Percentage Whose Parent Reports That Child:							
Recognizes most/all letters of the alphabet[a]	67.9	67.5	0.4	64.0	58.5	5.4	
Recognizes name in print[a]	95.8	94.4	1.4	97.2	97.6	-0.4	
Is able to/pretends to read[a]	69.4	71.4	-2.1	65.2	62.1	3.1	
Writes or draws[a]	78.2	79.0	-0.8	79.9	63.2	16.8**	**
Writes first name[a]	77.6	75.3	2.4	78.1	79.7	-1.7	
Emergent literacy composite[a,b]	3.8	3.8	0.0	3.6	3.6	0.0	
Cognition and General Knowledge							
Leiter-R Classification standard score	105.4	105.3	0.2	96.0	101.0	-5.0*	
Percentage Who:							
Name 10 colors	72.0	65.2	6.8**	49.9	79.5	-29.6***	***
Count to 10	51.1	48.1	3.1	45.5	54.9	-9.4	
Percentage Whose Parent Reports That Child:							
Identifies 4 colors[a]	83.3	84.6	-1.3	74.4	83.6	-9.3	
Identifies 10 written numbers[a]	73.1	71.1	1.9	75.1	78.0	-2.8	
Social and Emotional Development							
Behavior Problems score[a,c]	25.6	25.7	-0.1	25.1	26.0	-0.9*	
Adaptive Social Behavior Inventory: Expressive score[a]	49.3	48.8	0.5	47.1	49.6	-2.5	
Adaptive Social Behavior Inventory: Compliant score[a]	48.9	49.4	-0.5	46.5	49.5	-3.0	
Adaptive Social Behavior Inventory: Disruptive score[a,c]	49.9	48.8	1.1	49.3	48.5	0.8	
Approaches Toward Learning							
Leiter-R Attention Sustained standard score	106.5	105.8	0.6	99.4	106.5	-7.1***	***
Attention and engagement during testing	19.3	19.0	0.3	17.9	19.8	-2.0***	***
Sample Size	**361-410**	**336-378**		**51-62**	**43-57**		

Source: Parent Second Follow-Up Survey and Child Assessment.

[a]Parent report measures. All other outcomes directly assessed.

[b]The emergent literacy composite is the sum of five items and is scored as in the Family and Child Experiences Survey (FACES): recognizes all or most letters of the alphabet; counts to 20 or more; mostly writes/draws, not scribbles; writes own first name; and identifies red, yellow, blue, and green by name.

[c]For this measure, higher scores indicate less-desirable behavior. Therefore, lower scores, or impacts with negative signs for the workshop group, show a positive impact of the program because they represent lower levels of undesirable behavior.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.25. Impacts of *Ready To Learn* Workshops Six Months After Random Assignment: Planned View-Read-Do Activities

	Participant Did Not Plan V-R-D			Participant Planned V-R-D			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Learning Triangle Activities							
Percentage Who (3-5 Times/ Month):							
View program and talk about program or characters	85.1	84.7	0.4	87.6	87.1	0.5	
View program and do related activity	76.2	74.0	2.2	79.9	79.5	0.4	
View program and read related book	51.9	52.9	-1.1	57.4	50.3	7.1**	
View, read, and do related activity	38.0	34.6	3.4	45.1	39.6	5.5*	
Television Viewing and Co-Viewing Behaviors							
Children's Weekday:							
Total TV viewing time (hours)	3.0	3.5	-0.4	3.5	3.4	0.1	
Total PBS viewing time (hours)	1.3	1.4	-0.1	1.4	1.4	0.0	
Total adult-focused TV viewing time (hours)	0.2	0.3	-0.1**	0.3	0.3	0.0	*
Percentage Who (All or Most of the Time):							
Co-view PBS KIDS	57.0	51.8	5.2	56.8	52.9	3.9	
Co-view Nick Jr.	24.9	26.1	-1.2	28.3	28.0	0.3	
Co-view Cartoon Network	23.3	18.8	4.5	19.8	22.0	-2.2	
Co-view Disney Channel	25.8	25.7	0.1	26.6	25.4	1.3	
Co-view ABC Family Channel	10.6	16.1	-5.5*	13.3	14.9	-1.6	
Co-view HBO Family	6.4	4.5	2.0	6.8	6.0	0.9	
Co-view Noggin	10.1	5.5	4.7*	10.9	6.9	4.0**	
Attitudes Toward Television and PBS							
Percentage Who Disagree That:							
Cartoons are safe for kids	66.0	66.0	0.0	75.3	73.7	1.7	
Don't keep track of what kids watch	91.5	90.3	1.2	94.6	94.4	0.2	
TV has no place in a child care setting	87.0	85.2	1.8	88.4	91.5	-3.1*	
Upset if TV used in child care	75.4	77.5	-2.1	84.7	82.1	2.6	
PBS is the same as other channels	86.7	86.0	0.7	90.5	88.7	1.7	
Percentage Who Agree That:							
TV can be an educational tool	96.7	96.9	-0.2	98.3	97.3	0.9	
Even cartoon violence is harmful to kids	94.1	92.4	1.7	95.5	95.0	0.4	
PBS broadcasts high-quality kids' TV	98.6	99.2	-0.6	99.6	98.8	0.8	
Comfortable if used TV to teach	86.1	90.8	-4.7	89.0	87.0	2.0	*
PBS programs are safe for kids	85.6	88.4	-2.8	89.0	88.8	0.2	
Books and Reading Frequency							
Percentage with ≥26 children's books	67.4	70.7	-3.3	70.2	69.3	0.8	
Percentage who read once a day or more	73.7	69.4	4.3	69.8	66.6	3.2	
Minutes reading with child per day	48.8	42.9	5.9**	51.6	51.8	-0.2	
Use of PBS Online Resources							
Visit website(s)	42.5	41.9	0.6	46.4	38.8	7.6**	
Use information from websites	31.8	25.0	6.7	33.5	31.7	1.9	
Sample Size	**227-268**	**192-239**		**573-674**	**559-683**		

Source: Parent and Early Childhood Educator Second Follow-Up Surveys.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.26. Impacts of *Ready To Learn* Workshops Three Months After Random Assignment: Planned View-Read-Do Activities

	Participant Did Not Plan V-R-D			Participant Planned V-R-D			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Learning Triangle Activities							
Percentage Who (3-5 Times/ Month):							
View program and talk about program or characters	90.4	89.0	1.4	91.1	89.3	1.8	
View program and do related activity	79.7	85.4	-5.7	87.5	86.0	1.5	*
View program and read related book	62.6	63.0	-0.4	67.7	62.5	5.3*	
View, read, and do related activity	49.3	52.2	-2.9	57.1	50.0	7.1**	*
Television Viewing and Co-Viewing Behaviors							
Children's Weekday:							
Total TV viewing time (hours)	2.7	2.9	-0.2	3.2	3.1	0.1	
Total PBS viewing time (hours)	1.2	1.4	-0.2	1.5	1.3	0.2**	*
Total adult-focused TV viewing time (hours)	0.2	0.4	-0.2**	0.2	0.3	-0.1	
Percentage Who (All or Most of the Time):							
Co-view PBS KIDS	58.7	56.3	2.4	61.8	58.4	3.4	
Co-view Nick Jr.	28.7	27.3	1.4	37.5	30.4	7.2**	
Co-view Cartoon Network	23.5	23.1	0.4	24.9	18.2	6.7***	
Co-view Disney Channel	29.7	30.6	-0.8	32.6	25.2	7.5***	*
Co-view ABC Family Channel	13.6	16.5	-2.8	19.0	16.3	2.7	
Attitudes Toward Television and PBS							
Percentage Who Disagree That:							
Cartoons are safe for kids	61.0	56.7	4.3	67.9	65.9	1.9	
Don't keep track of what kids watch	87.5	86.5	1.0	87.8	93.3	-5.5***	*
TV has no place in a child care setting	73.5	76.1	-2.5	82.7	83.4	-0.7	
Upset if TV used in child care	69.1	68.7	0.4	76.2	75.6	0.6	
PBS is the same as other channels	82.2	77.7	4.5	85.5	85.1	0.4	
Percentage Who Agree That:							
TV can be an educational tool	96.1	96.1	0.0	97.1	97.6	-0.5	
Even cartoon violence is harmful to kids	86.8	89.3	-2.6	92.7	90.3	2.4	
PBS broadcasts high-quality kids' TV	97.6	97.6	-0.1	98.8	99.6	-0.7	
Comfortable if used TV to teach	82.1	83.0	-0.9	86.2	86.7	-0.5	
PBS programs are safe for kids	88.8	84.6	4.2	88.1	86.0	2.1	
Books and Reading Frequency							
Percentage with ≥26 children's books	60.0	64.7	-4.7	65.9	64.5	1.4	
Percentage who read once a day or more	70.7	79.2	-8.5**	78.5	78.9	-0.4	*
Minutes reading with child per day	45.9	47.1	-1.2	51.0	50.0	1.0	
Sample Size	**218-309**	**181-260**		**578-710**	**571-711**		

Source: Parent and Early Childhood Educator First Follow-Up Surveys.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.27. Impacts of *Ready To Learn* Workshops Six Months After Random Assignment on Children: Planned View-Read-Do Activities Parent Sample

	Participant Did Not Plan V-R-D			Participant Planned V-R-D			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Language and Emergent Literacy							
Woodcock-Muñoz Picture Vocabulary standard score	98.3	98.3	0.0	94.6	93.8	0.8	
Percentage of children with Picture Vocabulary score of 100 or above	43.4	48.7	-5.3	35.6	35.0	0.6	
Woodcock-Muñoz Letter-Word Identification standard score	103.6	105.7	-2.0	106.1	104.3	1.8	*
Percentage of children with Letter-Word Identification score of 100 or above	63.3	63.4	-0.1	69.0	60.5	8.5**	
Print knowledge score	1.3	1.2	0.0	1.0	1.0	0.1	
Book knowledge score	3.4	3.6	-0.1	3.1	3.0	0.1	
Percentage Whose Parent Reports That Child:							
Recognizes most/all letters of the alphabet[a]	59.0	68.7	-9.7**	71.6	66.7	4.9	**
Recognizes name in print[a]	95.3	94.8	0.5	96.0	95.0	1.0	
Is able to/pretends to read[a]	72.4	73.7	-1.4	73.5	71.2	2.3	
Writes or draws[a]	77.8	72.2	5.6	78.6	77.6	1.0	
Writes first name[a]	74.8	84.4	-9.7**	78.0	76.4	1.6	**
Emergent literacy composite[a,b]	3.6	3.8	-0.2	3.8	3.8	0.1	
Cognition and General Knowledge							
Leiter-R Classification standard score	105.6	107.9	-2.3	104.1	105.5	-1.3	
Percentage Who:							
Name 10 colors	70.2	71.5	-1.3	71.0	66.3	4.7	
Count to 10	54.1	56.9	-2.8	50.6	49.6	1.0	
Percentage Whose Parent Reports That Child:							
Identifies 4 colors[a]	84.0	85.5	-1.5	82.2	83.7	-1.5	
Identifies 10 written numbers[a]	67.0	74.8	-7.9*	74.9	71.1	3.8	**
Social and Emotional Development							
Behavior Problems score[a,c]	25.5	25.7	-0.1	25.8	25.9	-0.1	
Adaptive Social Behavior Inventory: Expressive score[a]	51.1	48.9	2.2	49.0	49.1	-0.2	
Adaptive Social Behavior Inventory: Compliant score[a]	48.4	49.9	-1.4	48.8	49.2	-0.4	
Adaptive Social Behavior Inventory: Disruptive score[a,c]	50.7	48.6	2.1**	49.6	47.9	1.8**	
Approaches Toward Learning							
Leiter-R Attention Sustained standard score	104.9	108.9	-3.9**	105.4	104.7	0.6	**
Attention and engagement during testing	19.1	19.7	-0.7*	19.1	19.0	0.2	
Sample Size	**131-153**	**123-142**		**298-342**	**271-316**		

Source: Parent Second Follow-Up Survey and Child Assessment.

[a]Parent report measures. All other outcomes directly assessed.

[b]The emergent literacy composite is the sum of five items and is scored as in the Family and Child Experiences Survey (FACES): recognizes all or most letters of the alphabet; counts to 20 or more; mostly writes/draws, not scribbles; writes own first name; and identifies red, yellow, blue, and green by name.

[c]For this measure, higher scores indicate less-desirable behavior. Therefore, lower scores, or impacts with negative signs for the workshop group, show a positive impact of the program because they represent lower levels of undesirable behavior.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.28. Impacts of *Ready To Learn* Workshops Six Months After Random Assignment: Workshop Practice Time for View-Read-Do Activities

	Did Not Provide Practice Time			Provided Practice Time			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Learning Triangle Activities							
Percentage Who (3-5 Times/ Month):							
View program and talk about program or characters	91.2	89.3	1.9	85.4	85.5	-0.1	
View program and do related activity	82.6	79.6	3.0	77.5	76.3	1.1	
View program and read related book	58.4	56.7	1.8	55.5	49.9	5.6*	
View, read, and do related activity	45.2	39.9	5.4	44.5	38.8	5.6*	
Television Viewing and Co-Viewing Behaviors							
Children's Weekday:							
Total TV viewing time (hours)	3.3	3.5	-0.2	3.4	3.4	0.0	
Total PBS viewing time (hours)	1.4	1.4	0.0	1.4	1.4	-0.1	
Total adult-focused TV viewing time (hours)	0.2	0.3	-0.1	0.3	0.3	0.0	
Percentage Who (All or Most of the Time):							
Co-view PBS KIDS	55.4	48.2	7.2*	59.3	53.6	5.6**	
Co-view Nick Jr.	28.8	24.2	4.6	28.2	26.7	1.5	
Co-view Cartoon Network	25.0	19.9	5.2	20.6	22.5	-1.9	
Co-view Disney Channel	28.2	22.4	5.8	27.1	26.8	0.3	
Co-view ABC Family Channel	12.3	12.0	0.3	13.5	15.1	-1.6	
Co-view HBO Family	7.1	6.7	0.3	7.4	5.6	1.9	
Co-view Noggin	10.3	7.3	3.1	10.3	5.9	4.4***	
Attitudes Toward Television and PBS							
Percentage Who Disagree That:							
Cartoons are safe for kids	61.1	62.2	-1.2	72.4	71.6	0.8	
Don't keep track of what kids watch	92.7	92.4	0.3	93.6	92.3	1.3	
TV has no place in a child care setting	85.4	85.5	-0.1	87.8	90.5	-2.7	
Upset if TV used in child care	75.1	76.8	-1.7	81.9	82.4	-0.6	
PBS is the same as other channels	88.2	86.2	2.0	89.5	87.1	2.3	
Percentage Who Agree That:							
TV can be an educational tool	97.2	96.3	0.9	98.0	97.9	0.1	
Even cartoon violence is harmful to kids	92.4	91.4	0.9	95.8	94.9	0.9	
PBS broadcasts high-quality kids' TV	99.0	99.1	-0.2	99.5	99.0	0.4	
Comfortable if used TV to teach	88.2	90.1	-2.0	89.0	88.1	0.9	
PBS programs are safe for kids	88.3	84.3	4.1	89.1	89.9	-0.7	
Books and Reading Frequency							
Percentage with ≥26 children's books	66.2	64.1	2.1	67.8	66.4	1.4	
Percentage who read once a day or more	70.6	65.9	4.7	71.4	66.9	4.5*	
Minutes reading with child per day	47.3	44.1	3.2	50.2	51.1	-0.9	
Use of PBS Online Resources							
Visit website(s)	41.8	41.8	0.0	41.4	36.6	4.8*	
Use information from websites	31.0	26.9	4.1	28.7	28.2	0.5	
Sample Size	**236-265**	**209-249**		**595-694**	**560-680**		

Source: Parent and Early Childhood Educator Second Follow-Up Surveys.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.29. Impacts of *Ready To Learn* Workshops Three Months After Random Assignment: Workshop Practice Time for View-Read-Do Activities

	Did Not Provide Practice Time			Provided Practice Time			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Learning Triangle Activities							
Percentage Who (3-5 Times/ Month):							
View program and talk about program or characters	94.5	90.5	4.0*	90.0	87.6	2.4	
View program and do related activity	84.6	87.5	-2.9	85.0	83.8	1.2	
View program and read related book	68.4	62.4	6.0	63.5	60.0	3.6	
View, read, and do related activity	55.9	51.9	4.0	50.4	48.9	1.5	
Television Viewing and Co-Viewing Behaviors							
Children's Weekday:							
Total TV viewing time (hours)	2.9	3.1	-0.2	3.2	3.1	0.1	
Total PBS viewing time (hours)	1.3	1.3	0.0	1.4	1.3	0.0	
Total adult-focused TV viewing time (hours)	0.2	0.3	-0.1*	0.2	0.2	0.0	
Percentage Who (All or Most of the Time):							
Co-view PBS KIDS	60.1	57.9	2.2	62.7	57.7	5.0*	
Co-view Nick Jr.	34.3	28.7	5.6	33.9	31.4	2.5	
Co-view Cartoon Network	27.6	25.3	2.4	22.0	20.3	1.6	
Co-view Disney Channel	31.9	29.2	2.7	32.0	25.3	6.7**	
Co-view ABC Family Channel	17.2	15.7	1.6	18.1	17.4	0.7	
Attitudes Toward Television and PBS							
Percentage Who Disagree That:							
Cartoons are safe for kids	58.7	54.3	4.5	68.7	66.0	2.7	
Don't keep track of what kids watch	87.9	87.7	0.2	88.2	91.7	-3.6**	
TV has no place in a child care setting	73.9	75.9	-2.0	83.5	82.4	1.1	
Upset if TV used in child care	70.5	69.4	1.1	76.0	76.6	-0.6	
PBS is the same as other channels	77.3	76.1	1.2	87.0	84.1	2.9	
Percentage Who Agree That:							
TV can be an educational tool	96.2	95.2	1.0	97.2	97.4	-0.2	
Even cartoon violence is harmful to kids	86.6	89.9	-3.3	91.0	90.3	0.7	
PBS broadcasts high-quality kids' TV	97.3	97.4	-0.1	98.8	99.5	-0.8	
Comfortable if used TV to teach	82.9	84.0	-1.2	86.5	85.3	1.2	
PBS programs are safe for kids	91.2	83.5	7.7***	88.5	89.2	-0.7	**
Books and Reading Frequency							
Percentage with ≥26 children's books	61.6	64.7	-3.1	65.1	64.7	0.4	
Percentage who read once a day or more	72.5	78.9	-6.4	75.3	77.5	-2.3	
Minutes reading with child per day	45.8	46.9	-1.0	48.6	50.0	-1.3	
Sample Size	**231-295**	**196-258**		**592-716**	**574-707**		

Source: Parent and Early Childhood Educator First Follow-Up Surveys.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.30. Impacts of *Ready To Learn* Workshops Six Months After Random Assignment on Children: Workshop Practice Time for View-Read-Do Activities Parent Sample

	Did Not Provide Practice Time			Provided Practice Time			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Language and Emergent Literacy							
Woodcock-Muñoz Picture Vocabulary standard score	95.8	96.8	-1.0	94.3	94.3	0.0	
Percentage of children with Picture Vocabulary score of 100 or above	35.8	45.4	-9.6*	35.2	35.1	0.1	
Woodcock-Muñoz Letter-Word Identification standard score	103.6	105.6	-2.0	106.5	105.2	1.2	
Percentage of children with Letter-Word Identification score of 100 or above	63.7	63.5	0.2	69.6	62.7	6.9*	
Print knowledge score	1.2	1.2	0.0	1.1	1.0	0.1	
Book knowledge score	3.4	3.5	-0.1	3.0	2.9	0.1	
Percentage Whose Parent Reports That Child:							
Recognizes most/all letters of the alphabet[a]	61.1	63.7	-2.7	70.7	68.7	2.1	
Recognizes name in print[a]	95.4	93.5	2.0	96.3	95.1	1.2	
Is able to/pretends to read[a]	75.1	71.7	3.4	68.8	69.0	-0.1	
Writes or draws[a]	76.6	71.1	5.5	79.3	79.1	0.1	
Writes first name[a]	71.5	81.5	-10.1***	79.8	75.7	4.1	***
Emergent literacy composite[a,b]	3.6	3.7	-0.1	3.8	3.8	0.0	
Cognition and General Knowledge							
Leiter-R Classification standard score	107.0	107.4	-0.5	104.4	105.9	-1.5	
Percentage Who:							
Name 10 colors	67.9	69.6	-1.7	71.1	65.9	5.2	
Count to 10	52.0	54.4	-2.4	50.1	51.1	-1.0	
Percentage Whose Parent Reports That Child:							
Identifies 4 colors[a]	81.6	84.2	-2.6	83.3	83.6	-0.3	
Identifies 10 written numbers[a]	63.1	69.9	-6.8	76.3	75.9	0.4	
Social and Emotional Development							
Behavior Problems score[a,c]	25.4	25.6	-0.2	25.7	25.8	-0.1	
Adaptive Social Behavior Inventory: Expressive score[a]	50.6	48.7	1.8	48.5	48.3	0.2	
Adaptive Social Behavior Inventory: Compliant score[a]	48.0	49.1	-1.1	49.0	49.2	-0.2	
Adaptive Social Behavior Inventory: Disruptive score[a,c]	51.3	49.5	1.8*	49.8	48.2	1.6**	
Approaches Toward Learning							
Leiter-R Attention Sustained standard score	103.9	107.8	-4.0**	106.5	105.3	1.2	**
Attention and engagement during testing	19.0	19.8	-0.8**	19.2	18.9	0.3	**
Sample Size	**149-170**	**129-154**		**318-365**	**279-320**		

Source: Parent Second Follow-Up Survey and Child Assessment.

[a]Parent report measures. All other outcomes directly assessed.

[b]The emergent literacy composite is the sum of five items and is scored as in the Family and Child Experiences Survey (FACES): recognizes all or most letters of the alphabet; counts to 20 or more; mostly writes/draws, not scribbles; writes own first name; and identifies red, yellow, blue, and green by name.

[c]For this measure, higher scores indicate less-desirable behavior. Therefore, lower scores, or impacts with negative signs for the workshop group, show a positive impact of the program because they represent lower levels of undesirable behavior.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.31. Impacts of *Ready To Learn* Workshops Six Months After Random Assignment: Demonstrated Reading a Book (Observer Rating)

	Did Not Demonstrate Reading a Book			Demonstrated Reading a Book			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Learning Triangle Activities							
Percentage Who (3-5 Times/ Month):							
View program and talk about program or characters	78.6	80.9	-2.2	88.1	86.6	1.5	
View program and do related activity	70.9	75.9	-5.0	80.6	78.4	2.2	
View program and read related book	51.7	50.9	0.8	57.7	53.0	4.8*	
View, read, and do related activity	39.5	36.9	2.7	46.9	40.0	6.9**	
Television Viewing and Co-Viewing Behaviors							
Children's Weekday:							
Total TV viewing time (hours)	3.5	3.4	0.1	3.4	3.3	0.1	
Total PBS viewing time (hours)	1.2	1.3	-0.1	1.5	1.4	0.1	
Total adult-focused TV viewing time (hours)	0.2	0.2	0.0	0.2	0.3	-0.1	
Percentage Who (All or Most of the Time):							
Co-view PBS KIDS	51.8	44.4	7.4	61.8	55.0	6.8***	
Co-view Nick Jr.	30.1	25.1	5.1	29.0	27.4	1.6	
Co-view Cartoon Network	21.1	21.1	0.0	22.2	22.4	-0.3	
Co-view Disney Channel	27.4	26.8	0.6	28.0	25.4	2.6	
Co-view ABC Family Channel	14.3	18.9	-4.6	13.3	11.4	2.0	
Co-view HBO Family	8.2	7.5	0.7	7.6	6.0	1.5	
Co-view Noggin	11.6	5.7	5.9*	11.1	7.3	3.8**	
Attitudes Toward Television and PBS							
Percentage Who Disagree That:							
Cartoons are safe for kids	74.4	69.8	4.7	69.5	68.8	0.7	
Don't keep track of what kids watch	92.7	93.0	-0.3	94.1	93.9	0.2	
TV has no place in a child care setting	87.8	92.4	-4.6	85.6	89.5	-3.9**	
Upset if TV used in child care	81.5	78.3	3.2	79.4	83.5	-4.1*	*
PBS is the same as other channels	87.8	90.2	-2.4	88.9	86.9	2.0	
Percentage Who Agree That:							
TV can be an educational tool	96.8	97.1	-0.3	97.9	97.0	0.9	
Even cartoon violence is harmful to kids	95.1	95.4	-0.3	94.6	94.5	0.2	
PBS broadcasts high-quality kids' TV	99.0	97.9	1.1	99.5	99.2	0.3	
Comfortable if used TV to teach	84.1	87.8	-3.7	88.8	88.6	0.2	
PBS programs are safe for kids	88.1	82.1	6.0*	89.2	89.0	0.2	
Books and Reading Frequency							
Percentage with ≥26 children's books	67.1	65.1	1.9	67.4	65.9	1.5	
Percentage who read once a day or more	68.8	65.6	3.2	72.6	67.9	4.6**	
Minutes reading with child per day	48.6	50.4	-1.8	50.2	49.9	0.4	
Use of PBS Online Resources							
Visit website(s)	39.9	36.8	3.1	41.0	33.9	7.1***	
Use information from websites	27.2	26.9	0.3	28.1	25.9	2.3	
Sample Size	**177-212**	**160-207**		**643-732**	**602-722**		

Source: Parent and Early Childhood Educator Second Follow-Up Surveys.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.32. Impacts of *Ready To Learn* Workshops Three Months After Random Assignment: Demonstrated Reading a Book (Observer Rating)

	Did Not Demonstrate Reading a Book			Demonstrated Reading a Book			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Learning Triangle Activities							
Percentage Who (3-5 Times/ Month):							
View program and talk about program or characters	87.2	85.0	2.2	91.9	87.8	4.1***	
View program and do related activity	84.5	81.6	2.9	86.0	83.7	2.3	
View program and read related book	60.2	53.8	6.4	67.4	60.3	7.2***	
View, read, and do related activity	48.8	43.6	5.2	54.6	50.1	4.5	
Television Viewing and Co-Viewing Behaviors							
Children's Weekday:							
Total TV viewing time (hours)	3.2	3.4	-0.2	3.0	3.0	0.0	
Total PBS viewing time (hours)	1.3	1.3	0.0	1.3	1.3	0.1	
Total adult-focused TV viewing time (hours)	0.2	0.2	0.0	0.2	0.3	-0.1**	
Percentage Who (All or Most of the Time):							
Co-view PBS KIDS	56.6	57.1	-0.5	64.6	57.4	7.2***	
Co-view Nick Jr.	36.7	30.4	6.3	33.7	30.0	3.7	
Co-view Cartoon Network	22.5	22.1	0.4	23.3	21.0	2.3	
Co-view Disney Channel	32.4	25.9	6.5	31.0	25.8	5.2**	
Co-view ABC Family Channel	18.1	13.5	4.6	17.0	16.2	0.8	
Attitudes Toward Television and PBS							
Percentage Who Disagree That:							
Cartoons are safe for kids	69.9	61.7	8.2**	64.4	62.9	1.5	
Don't keep track of what kids watch	90.2	93.8	-3.7	87.2	89.9	-2.7	
TV has no place in a child care setting	84.7	87.0	-2.3	77.0	78.8	-1.8	
Upset if TV used in child care	74.4	73.9	0.5	72.3	75.1	-2.8	
PBS is the same as other channels	87.9	87.8	0.2	82.1	79.5	2.6	
Percentage Who Agree That:							
TV can be an educational tool	96.9	98.3	-1.4	96.4	95.5	0.9	
Even cartoon violence is harmful to kids	93.3	90.1	3.2	89.0	89.6	-0.6	
PBS broadcasts high-quality kids' TV	99.0	99.1	-0.2	98.1	98.7	-0.6	
Comfortable if used TV to teach	84.4	83.7	0.7	85.8	85.1	0.7	
PBS programs are safe for kids	89.1	85.2	3.9	88.9	87.3	1.6	
Books and Reading Frequency							
Percentage with ≥26 children's books	65.1	66.0	-0.9	62.8	62.2	0.6	
Percentage who read once a day or more	77.9	75.8	2.1	76.3	77.8	-1.5	
Minutes reading with child per day	49.8	52.4	-2.6	47.5	48.4	-0.9	
Sample Size	**171-218**	**165-218**		**636-775**	**591-736**		

Source: Parent and Early Childhood Educator First Follow-Up Surveys.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.33. Impacts of *Ready To Learn* Workshops Six Months After Random Assignment on Children: Demonstrated Reading a Book (Observer Rating) Parent Sample

	Did Not Demonstrate Reading a Book			Demonstrated Reading a Book			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Language and Emergent Literacy							
Woodcock-Muñoz Picture Vocabulary standard score	98.6	95.4	3.2*	94.1	95.2	-1.1	**
Percentage of children with Picture Vocabulary score of 100 or above	44.2	39.8	4.3	32.5	38.3	-5.8*	
Woodcock-Muñoz Letter-Word Identification standard score	108.8	107.3	1.5	104.8	104.8	0.0	
Percentage of children with Letter-Word Identification score of 100 or above	70.1	67.3	2.7	66.7	64.2	2.4	
Print knowledge score	1.2	1.2	0.0	1.1	1.1	0.0	
Book knowledge score	3.3	3.2	0.1	3.2	3.2	0.0	
Percentage Whose Parent Reports That Child:							
Recognizes most/all letters of the alphabet[a]	71.5	69.9	1.6	64.2	62.9	1.3	
Recognizes name in print[a]	97.1	95.7	1.5	95.0	93.6	1.4	
Is able to/pretends to read[a]	77.6	67.6	10.0	72.4	70.0	2.4	
Writes or draws[a]	76.8	80.2	-3.4	76.1	73.6	2.5	
Writes first name[a]	79.6	84.0	-4.5	74.3	74.4	0.0	
Emergent literacy composite[a,b]	3.9	3.9	0.0	3.6	3.6	0.0	
Cognition and General Knowledge							
Leiter-R Classification standard score	108.1	109.2	-1.1	104.4	105.0	-0.6	
Percentage Who:							
Name 10 colors	76.9	70.5	6.4	66.6	66.7	-0.1	
Count to 10	53.8	52.2	1.7	49.8	51.9	-2.1	
Percentage Whose Parent Reports That Child:							
Identifies 4 colors[a]	81.9	83.6	-1.7	82.4	82.9	-0.6	
Identifies 10 written numbers[a]	71.4	74.3	-2.9	69.8	71.8	-1.9	
Social and Emotional Development							
Behavior Problems score[a,c]	26.2	26.2	0.1	25.5	25.5	0.0	
Adaptive Social Behavior Inventory: Expressive score[a]	47.9	48.0	-0.1	49.4	48.5	1.0	
Adaptive Social Behavior Inventory: Compliant score[a]	47.8	50.4	-2.6**	48.9	48.3	0.6	**
Adaptive Social Behavior Inventory: Disruptive score[a,c]	48.9	47.2	1.6	50.1	49.1	0.9	
Approaches Toward Learning							
Leiter-R Attention Sustained standard score	108.7	108.1	0.6	104.8	105.5	-0.6	
Attention and engagement during testing	19.7	19.8	-0.1	19.0	18.9	0.1	
Sample Size	**113-123**	**95-104**		**373-421**	**340-382**		

Source: Parent Second Follow-Up Survey and Child Assessment.

[a]Parent report measures. All other outcomes directly assessed.

[b]The emergent literacy composite is the sum of five items and is scored as in the Family and Child Experiences Survey (FACES): recognizes all or most letters of the alphabet; counts to 20 or more; mostly writes/draws, not scribbles; writes own first name; and identifies red, yellow, blue, and green by name.

[c]For this measure, higher scores indicate less-desirable behavior. Therefore, lower scores, or impacts with negative signs for the workshop group, show a positive impact of the program because they represent lower levels of undesirable behavior.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.34. Impacts of *Ready To Learn* Workshops Six Months After Random Assignment: Workshop Dosage

	Low Dosage (75 mins. or less)			High Dosage (greater than 75 mins.)			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Learning Triangle Activities							
Percentage Who (3-5 Times/ Month):							
View program and talk about program or characters	86.2	83.5	2.7	84.2	86.0	-1.8	
View program and do related activity	76.8	75.4	1.4	78.5	78.9	-0.4	
View program and read related book	59.2	48.6	10.5***	51.9	51.8	0.2	**
View, read, and do related activity	46.1	35.6	10.5***	41.8	40.0	1.9	*
Television Viewing and Co-Viewing Behaviors							
Children's Weekday:							
Total TV viewing time (hours)	3.5	3.3	0.3	3.4	3.5	-0.1	
Total PBS viewing time (hours)	1.3	1.3	0.0	1.5	1.5	0.0	
Total adult-focused TV viewing time (hours)	0.2	0.2	0.0	0.3	0.3	0.0	
Percentage Who (All or Most of the Time):							
Co-view PBS KIDS	49.9	46.6	3.3	65.6	59.3	6.3**	
Co-view Nick Jr.	25.8	28.3	-2.5	28.2	27.1	1.1	
Co-view Cartoon Network	22.3	21.7	0.6	19.5	22.3	-2.9	
Co-view Disney Channel	24.5	23.2	1.4	28.3	29.7	-1.4	
Co-view ABC Family Channel	12.2	13.8	-1.6	12.6	13.9	-1.3	
Co-view HBO Family	7.7	6.8	0.9	6.4	5.5	1.0	
Co-view Noggin	11.1	8.2	2.8	9.6	6.0	3.6**	
Attitudes Toward Television and PBS							
Percentage Who Disagree That:							
Cartoons are safe for kids	72.0	69.6	2.4	73.5	71.6	1.9	
Don't keep track of what kids watch	94.4	93.4	1.0	92.3	93.7	-1.3	
TV has no place in a child care setting	85.5	89.8	-4.2*	89.4	90.1	-0.8	
Upset if TV used in child care	79.7	82.3	-2.6	79.9	81.0	-1.0	
PBS is the same as other channels	88.0	91.1	-3.1	90.5	85.7	4.9**	***
Percentage Who Agree That:							
TV can be an educational tool	96.3	97.2	-0.9	98.8	97.3	1.5*	*
Even cartoon violence is harmful to kids	95.0	95.1	0.0	95.7	95.0	0.7	
PBS broadcasts high-quality kids' TV	98.9	98.9	0.0	99.8	99.5	0.4	
Comfortable if used TV to teach	85.0	88.9	-4.0*	87.9	87.0	0.8	
PBS programs are safe for kids	84.8	86.1	-1.3	88.1	90.8	-2.7	
Books and Reading Frequency							
Percentage with ≥26 children's books	70.2	68.2	2.0	64.9	66.6	-1.7	
Percentage who read once a day or more	68.2	69.2	-1.0	72.9	68.5	4.4	
Minutes reading with child per day	50.6	48.6	1.9	52.1	52.7	-0.6	
Use of PBS Online Resources							
Visit website(s)	41.4	38.9	2.5	40.5	35.5	5.1	
Use information from websites	30.5	28.0	2.5	27.8	26.4	1.4	
Sample Size	**352-421**	**347-439**		**457-525**	**412-494**		

Source: Parent and Early Childhood Educator Second Follow-Up Surveys.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.35. Impacts of *Ready To Learn* Workshops Three Months After Random Assignment: Workshop Dosage

	Low Dosage (75 mins. or less)			High Dosage (greater than 75 mins.)			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Learning Triangle Activities							
Percentage Who (3-5 Times/ Month):							
View program and talk about program or characters	90.0	89.7	0.3	89.7	84.9	4.8**	
View program and do related activity	83.1	84.5	-1.4	85.8	83.1	2.7	
View program and read related book	65.6	60.7	5.0	65.1	58.9	6.2*	
View, read, and do related activity	53.6	49.3	4.3	53.6	47.2	6.5*	
Television Viewing and Co-Viewing Behaviors							
Children's Weekday:							
Total TV viewing time (hours)	3.0	3.1	-0.1	3.0	3.0	0.0	
Total PBS viewing time (hours)	1.4	1.2	0.2*	1.3	1.3	0.0	
Total adult-focused TV viewing time (hours)	0.2	0.3	-0.1	0.2	0.3	-0.1**	
Percentage Who (All or Most of the Time):							
Co-view PBS KIDS	56.9	56.6	0.4	66.5	57.1	9.4***	*
Co-view Nick Jr.	37.5	31.3	6.2*	32.0	28.8	3.2	
Co-view Cartoon Network	26.6	21.5	5.0	20.7	19.6	1.1	
Co-view Disney Channel	31.7	29.2	2.5	31.3	25.6	5.7*	
Co-view ABC Family Channel	17.0	15.4	1.6	17.7	15.3	2.4	
Attitudes Toward Television and PBS							
Percentage Who Disagree That:							
Cartoons are safe for kids	63.3	60.2	3.2	69.1	66.9	2.2	
Don't keep track of what kids watch	88.2	91.0	-2.7	88.6	91.3	-2.6	
TV has no place in a child care setting	77.6	79.9	-2.2	81.6	82.5	-0.9	
Upset if TV used in child care	74.0	68.8	5.1	74.6	78.1	-3.5	**
PBS is the same as other channels	84.3	81.4	2.9	84.7	83.2	1.5	
Percentage Who Agree That:							
TV can be an educational tool	96.3	97.7	-1.3	97.6	95.6	2.0*	*
Even cartoon violence is harmful to kids	90.6	91.0	-0.4	90.1	88.4	1.7	
PBS broadcasts high-quality kids' TV	98.3	99.7	-1.4**	98.9	98.3	0.6	*
Comfortable if used TV to teach	83.7	83.9	-0.2	86.3	86.4	-0.1	
PBS programs are safe for kids	89.8	87.2	2.6	87.3	88.3	-1.1	
Books and Reading Frequency							
Percentage with ≥26 children's books	66.7	65.8	0.8	59.4	64.5	-5.0*	
Percentage who read once a day or more	76.7	81.0	-4.3	75.8	75.2	0.6	
Minutes reading with child per day	49.4	48.9	0.5	49.9	49.6	0.3	
Sample Size	**356-460**	**354-462**		**438-548**	**408-512**		

Source: Parent and Early Childhood Educator First Follow-Up Surveys.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.

Table F.36. Impacts of *Ready To Learn* Workshops Six Months After Random Assignment on Children: Workshop Dosage Parent Sample

	Low Dosage (75 mins. or less)			High Dosage (greater than 75 mins.)			
	Workshop Group	Control Group	Estimated Impact	Workshop Group	Control Group	Estimated Impact	Subgroup Difference
Language and Emergent Literacy							
Woodcock-Muñoz Picture Vocabulary standard score	97.6	94.9	2.7**	91.3	94.6	-3.3***	***
Percentage of children with Picture Vocabulary score of 100 or above	41.2	42.3	-1.1	27.8	32.8	-5.0	
Woodcock-Muñoz Letter-Word Identification standard score	108.6	107.7	0.9	102.2	102.2	0.0	
Percentage of children with Letter-Word Identification score of 100 or above	73.0	72.8	0.2	61.8	53.7	8.1*	
Print knowledge score	1.2	1.1	0.1	1.1	1.1	0.0	
Book knowledge score	3.3	3.2	0.2	3.2	3.2	0.0	
Percentage Whose Parent Reports That Child:							
Recognizes most/all letters of the alphabet[a]	70.3	68.4	1.9	65.8	64.5	1.3	
Recognizes name in print[a]	96.2	94.3	1.9	94.7	94.6	0.1	
Is able to/pretends to read[a]	76.1	69.2	6.9	66.4	70.5	-4.2	*
Writes or draws[a]	80.2	74.2	6.0	75.3	76.3	-1.0	
Writes first name[a]	77.8	76.5	1.3	76.3	77.4	-1.1	
Emergent literacy composite[a,b]	3.9	3.8	0.1	3.6	3.7	-0.1	
Cognition and General Knowledge							
Leiter-R Classification standard score	106.3	107.1	-0.8	102.9	103.7	-0.8	
Percentage Who:							
Name 10 colors	74.3	71.0	3.3	65.9	66.0	-0.1	
Count to 10	51.5	45.6	6.0	51.2	55.0	-3.9	
Percentage Whose Parent Reports That Child:							
Identifies 4 colors[a]	84.5	85.2	-0.7	80.3	82.2	-1.9	
Identifies 10 written numbers[a]	73.1	72.4	0.7	72.7	70.7	2.0	
Social and Emotional Development							
Behavior Problems score[a,c]	26.0	26.1	-0.1	25.4	25.6	-0.2	
Adaptive Social Behavior Inventory: Expressive score[a]	49.7	49.4	0.2	48.9	48.4	0.5	
Adaptive Social Behavior Inventory: Compliant score[a]	47.9	50.3	-2.4**	49.5	48.8	0.7	**
Adaptive Social Behavior Inventory: Disruptive score[a,c]	49.8	48.3	1.5	49.5	48.4	1.2	
Approaches Toward Learning							
Leiter-R Attention Sustained standard score	105.6	106.5	-0.9	105.2	105.1	0.2	
Attention and engagement during testing	19.3	19.4	-0.2	18.9	18.9	0.1	
Sample Size	**219-257**	**202-234**		**232-262**	**209-236**		

Source: Parent Second Follow-Up Survey and Child Assessment.

[a]Parent report measures. All other outcomes directly assessed.

[b]The emergent literacy composite is the sum of five items and is scored as in the Family and Child Experiences Survey (FACES): recognizes all or most letters of the alphabet; counts to 20 or more; mostly writes/draws, not scribbles; writes own first name; and identifies red, yellow, blue, and green by name.

[c]For this measure, higher scores indicate less-desirable behavior. Therefore, lower scores, or impacts with negative signs for the workshop group, show a positive impact of the program because they represent lower levels of undesirable behavior.

*Estimate significantly different from zero at the 90% confidence level, two-tailed test.
**Estimate significantly different from zero at the 95% confidence level, two-tailed test.
***Estimate significantly different from zero at the 99% confidence level, two-tailed test.